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Meeting of the MAP Focal Points

Athens, Greece, 13-16 October 2015

Report of the Meeting of the MAP Focal Points

Report of the Meeting of the Mediterranean Action Plan Focal Points

Introduction

1. In accordance with the programme of work adopted by the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its protocols at their eighteenth meeting, held in Istanbul in December 2013, a meeting of the Mediterranean Action Plan (MAP) focal points was held at the Royal Olympic Hotel in Athens from 13 to 16 October 2015.

Attendance

2. The following Contracting Parties to the Barcelona Convention were represented at the meeting: Albania, Bosnia and Herzegovina, Croatia, Cyprus, European Union, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia and Turkey.
3. The following United Nations bodies, specialized agencies, convention secretariats and intergovernmental organizations were represented as observers: Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), European Environmental Agency (EEA) and the Secretariat of the Union for the Mediterranean. The Compliance Committee of the Barcelona Convention was also represented.
4. The following non-governmental and other organizations were represented as observers: Hellenic Marine Environment Protection Association (HELMPEPA), Mediterranean Association to Save the Sea Turtles (MEDASSET), the network of Marine Protected Areas managers in the Mediterranean (MedPAN), Mediterranean Programme for International Environmental Law and Negotiation (MEPIELAN CENTRE), Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE) and World Wildlife Fund for Nature, Greece (WWF-Greece). (The full list of participants is set out in Annex I to the present report).

I. Opening of the meeting (agenda item 1)

5. The meeting was opened at 9.40 a.m. on Tuesday, 13 October 2015, by Mr Gaetano Leone, MAP Coordinator. Welcoming and opening statements were delivered by the Alternate Minister of Environment and Energy for Greece, Mr Yiannis Tsironis, and the President of the Bureau of the Barcelona Convention, Mr Mehmet Emin Birpinar.
6. Mr Tsironis' statement is set out in annex II to the present report.
7. In his remarks, Mr Birpinar reviewed the progress made since the eighteenth meeting of the Contracting Parties to the Barcelona Convention. He characterized the biennium 2014–2015 as one of transition in terms of both the funding and the functioning of the Convention. In terms of funding, a working capital reserve had been created to secure the operations of the secretariat, as decided by the Contracting Parties at their eighteenth meeting, and it had been funded to the desired level thanks to the timely payment of contributions by most of the Contracting Parties. The financial system had also been strengthened during the biennium by the introduction of the United Nations enterprise resource planning system, Umoja, and the new financial regulations, rules and procedures applicable to the Barcelona Convention adopted by the Contracting Parties at their eighteenth meeting. In terms of functioning, there had been important strategic and technical accomplishments, bringing greater coherence to the Convention, including the adoption of the Regional Plan on Marine Litter Management in the Mediterranean; the development of a draft mid-term strategy covering three biennia; a review of the implementation of the Mediterranean Strategy on Sustainable Development (MSSD); the development of an action plan on sustainable consumption and production in the Mediterranean and the elaboration of an action plan for the conservation of cetaceans in

the Mediterranean Sea under the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean. In the light of such achievements, for which he congratulated the secretariat, the Mediterranean Action Plan could serve as a model of friendship and cooperation for other regions. In closing, he thanked the secretariat and the Government of Greece for organizing the current meeting and said that he looked forward to a successful nineteenth meeting of the Contracting Parties.

II. Organizational matters (agenda item 2)

A. Rules of procedure for meetings of the MAP focal points

8. The focal points agreed that the rules of procedure for meetings and conferences of the Contracting Parties to the Barcelona Convention (UNEP/IG.43/6, annex XI, as amended by the Contracting Parties (UNEP(OCA)/MED IG.1/5 and UNEP(OCA)/MED IG.3/5), would apply mutatis mutandis to their deliberations.

B. Election of officers

9. In accordance with rule 20 of the rules of procedure, the focal points unanimously elected the following officers:

Chair:	Mr Charalambos Hajipakkos (Cyprus)
Vice-Chairs:	Mr Tarik Kupusovic (Bosnia and Herzegovina)
	Mr Mohamed Abdel Monem Farouk Osman (Egypt)
	Mr Oliviero Montanaro (Italy)
	Mr Mohamed Ali Ben Temessek (Tunisia)
Rapporteur:	Ms Edlira Dersha (Albania)

C. Adoption of the provisional agenda

10. The focal points adopted their agenda on the basis of the provisional agenda circulated in document UNEP(DEPI)/MED WG.421/1/Corr.1. (As set out in Annex III to the present report).

D. Organization of work

11. The focal points agreed to work in plenary session and to establish small groups to consider specific issues as necessary, taking into account the needs of small delegations. One representative, speaking on behalf of a group of countries, asked that small changes in the timetable be accommodated during the course of the meeting for the sake of efficiency, given the heavy agenda for the meeting. He also invited the Secretariat to present an overview of the budget at its earliest convenience to allow members to assess the budget impact of the various agenda items as they were discussed.

III. Progress report on activities carried out during the 2014–2015 biennium

IV. Financial implementation 2014–2015

12. The focal points considered item 3 (progress report on activities carried out during the 2014–2015 biennium) and item 4 (financial implementation 2014–2015) concurrently.
13. The Coordinator presented the progress report on the activities carried out during the 2014–2015 biennium (UNEP(DEPI)/MED WG. 421/3), and the report on financial implementation of the 2012–2013 programme of work (UNEP(DEPI)/MED WG.421/Inf.4.)
14. In the ensuing discussion, focal points expressed deep appreciation for the successful implementation of the programme of work and the results achieved in the biennium.

15. Some focal points expressed their views: on the need for greater interaction between the regional activity centres and their related focal points. In particular, this was essential for projects that must be discussed, approved and implemented in full and timely coordination with the Parties; on the necessity to timely define the implementing mechanism of the newly-approved integrated monitoring and assessment programme (IMAP) and the consequent need to include in the programme of work the appropriate activities to ensure it; on the need to adopt specific mandates by the Contracting Parties to develop joint strategies with other entities relevant for the implementation of the Barcelona Convention; and on the need to clarify the role and function of all the instruments, (i.e. memorandums of understanding, joint strategies, regional frameworks) that are adopted for the implementation of the Convention and its Protocols.
16. One focal point suggested that further scientific work be planned on biodiversity in areas beyond national jurisdictions, particularly in the light of the recent inclusion in the repository of the Convention on Biological Diversity of the ecologically or biologically significant areas, identified by the Malaga workshop in 2014. Finally, supporting comments made by the Coordinator regarding the need for better reporting, one focal point asked that the importance of reporting and compliance assessment be emphasized in decisions including formal commitments and obligations of the Parties.
17. In addressing some of the concerns and suggestions, the Coordinator expressed the secretariat's commitment to working with the Compliance Committee to clarify how binding measures and time frames were implemented within the framework of the Mediterranean Action Plan. He said that the Secretariat would strive to ensure that all communications with component focal points were copied to national focal points in the future, while observing that the secretariat also relied on national coordination of MAP and Components' focal points. He deferred queries relating to the financial situation of the Regional Marine Pollution Emergency Response Centre for the Mediterranean until the discussion on the programme of work and budget, while assuring members that the Centre remained a core component of the Mediterranean Action Plan system.

V. Specific matters for consideration and action by the meeting

A. Draft decision on the Mid-term Strategy (MTS) 2016–2021 (draft decision 22/1)

18. The Coordinator introduced the draft decision on the United Nations Environment Programme (UNEP)/MAP mid-term strategy (MTS) 2016–2021 (UNEP(DEPI)/MED WG.421/4) and the draft UNEP/MAP MTS 2016–2021 set out in the annex thereto, as developed following the MAP focal points meeting of May 2015.
19. Several focal points highlighted the importance of the MTS and of ensuring that it was coherent and consistent. They noted the substantial difference between the present version and the version considered at a previous meeting of the MAP focal points in May 2015, acknowledging the changes in the document but highlighting that some elements from the above-mentioned meeting were not included in the present version and that some additional changes were made.
20. The focal points examined the draft decision section by section, with a view to enabling the secretariat to reflect the desired amendments in a revised draft.
 1. **Introduction**
 21. One focal point proposed making the introduction to the MTS more concise. Another expressed dissatisfaction with the quality of the French translation of the MTS document.
 2. **The general picture and the MAP/BC system**
 22. One focal point proposed that the section be shortened substantially; fewer details would make it more conceptual as befitted a strategy. In response, another focal point cautioned

against losing the essence of the text, which made it clear how the MTS linked to other relevant strategies.

23. One focal point pointed out that, although the UNEP medium-term strategy for the period 2014–2017 was cited as one of the documents providing direction to the MTS, the term of that strategy would conclude several years before that of the MTS. It was agreed that the secretariat would adjust the references to the 2030 Agenda for Sustainable Development, as approved two weeks earlier at the UN Summit.
24. One focal point speaking on behalf of a group of countries recalled that the Governance Decision from COP 18 (IG.21/13 Annex II) had decided to refocus the system of RAC-based Focal Points into a system of Thematic Focal points and requested that the Secretariat complete the work it had been asked to do on this topic by COP 18 in time to make proposals to COP 19.

3. The mid-term strategy principles and model

25. One focal point stressed the importance of ensuring that the wording used in the narrative was consistent with that used in the pictorial representation of the concept of the MTS (diagram 1), including the text of the vision, which was deemed acceptable by all.
26. The focal points discussed whether a strategy should include indicators and targets as per the relevant COP 18 decision. It was generally held that indicators and targets belonged in programmes of work as they were activity-based and would have budgetary implications. Furthermore, expert consultation would be required to ensure that the indicators were appropriate and useful – a process that would require a great deal of time in particular during the first biennial programme of work under this MTS.

4. The overarching theme: governance

27. One focal point expressed a preference for the “strategy objectives for governance” that had appeared in the version of the MTS discussed at the previous meeting of MAP focal points in May 2015. He said that during the re-working of the text, it had lost the clear separation between governance and capacity-building. An observer recalled that education and awareness-raising were important management tools and they should not, therefore, be lost during efforts to summarize or condense text. The representative of Italy submitted a conference room paper highlighting the differences between the two versions to aid deliberations.
28. The perceived limited links between the MTS and the MSSD were highlighted. The focal point concerned also suggested mentioning the review of MSSD implementation in the third biennium of the MTS.
29. One focal point expressed a preference for more general descriptions of outputs in keeping with his concept of a strategy. Another focal point considered the key outputs sufficiently general to allow UNEP/MAP to adapt its programmes of work and budgets as required, but also detailed enough to be a useful guide, providing stability over the course of implementation of the MTS. The focal points agreed with the proposal by the Chair to rename the key outputs as “indicative key outputs”.

5. Core theme 1: land and sea-based pollution

30. One representative, speaking on behalf of a group of countries, said that, in setting out the present core theme, and indeed the two other core themes, it would be preferable to reintroduce the ecological objectives as agreed at the MAP focal points meeting of May 2015, including those on emerging issues, and remove the reference to long-term targeted impacts. The text should furthermore clearly indicate the specific protocols and other instruments linked with the strategy objectives listed under each core theme. In addition, the objectives of the cross-cutting themes related to each core theme should also be included to promote

coherence across the strategy. Those comments, he said, applied equally to all three core themes.

31. One focal point, stressing the need for a concise and flexible strategy, cautioned that to link cross-cutting issues with the core themes might prove too limiting in the longer term. The representative of a MAP Partner added that, taking into account the obligations arising out of the Barcelona Convention, the two strategy objectives of the theme should include, in addition to their prevention, reduction and control, the possible elimination of the materials and issues mentioned.

6. Core theme 2: biodiversity and ecosystems

32. One focal point suggested the addition of a new output in the area of technical assistance and capacity-building, specifically the realization of pilot projects in support of efforts aimed at the establishment and implementation of marine protected areas and specially protected areas of Mediterranean importance (SPAMIs). One focal point, noting that the term “blue economy” had as yet no universally agreed definition, suggested that it be replaced in the third strategy objective by a reference to sustainable development. Another pointed out that the key outputs largely corresponded to those forming part of the proposed MPA road map and would therefore be considered in greater depth during the future discussion of that subject, as was appropriate.

7. Core theme 3: land and sea-based interaction and processes

33. One focal point suggested the inclusion of a new key output relating to pilot projects in support of the establishment and implementation of marine protected areas and SPAMIs.

8. Cross-cutting theme 1: integrated coastal zone management

34. One representative, speaking on behalf of a group of countries, suggested that the objectives listed in the section on integrated coastal zone management (ICZM) should match the relevant objectives listed under core themes and list other objectives unique to ICZM, and that the table in the section on ICZM should better reflect the objectives described therein. Another representative proposed listing as a strategic outcome under the theme, the conduct of pilot projects to support the implementation of ICZM strategies and, as a key output in addition to the preparation of ICZM national strategies, progress made in their implementation.
35. One focal point said that both the ICZM cross-cutting theme and the land and sea interaction and processes core theme should include: references to a regional strategy on ICZM, which was called for by the Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol); environmental impact assessments, which were instrumental to achieving environmental protection and sustainable development under the Barcelona Convention and were strongly linked to ICZM; and marine spatial planning, which was also linked to ICZM and remained to be defined.
36. The representative of the secretariat noted that the ICZM Protocol referred not to an ICZM regional strategy but to an ICZM regional framework, and efforts had been made to include elements of such a framework in the revised MSSD. With regard to environmental impact assessments and marine spatial planning, both were addressed in the programme of work for the next biennium.
37. Following the secretariat response, the focal point who had raised the issue proposed that the secretariat prepare a short document on how marine spatial planning can apply to the Mediterranean region in line with the ICZM Protocol and ecological objectives.

38. The Coordinator noted that the Secretariat could produce a document outlining issues of strategic importance in relation to marine spatial planning in the Mediterranean that might require further work, which could be included in the MTS.

9. Cross-cutting theme 2: sustainable consumption and production

39. One representative, speaking on behalf of a group of countries, suggested that the objectives listed in the section on sustainable consumption and production (SCP) should match relevant objectives listed in the core themes and list other objectives unique to SCP. Another proposed textual changes to the proposed key outputs under the theme to include the conduct of pilot projects to support the implementation of the SCP regional action plan.
40. One focal point suggested deleting a reference to climate change mitigation in one of the key outputs, stating that the MAP work on climate change focused on adaptation only. Two others, including one speaking on behalf of a group of countries, said that the reference to mitigation should be maintained, stating that the MTS should enable the Contracting Parties to conduct work in this area in the future.

10. Cross-cutting theme 3: climate change adaptation

41. One representative, speaking on behalf of a group of countries, suggested that the objectives listed in the section on climate change adaptation should match relevant objectives listed in the core themes and list other objectives unique to climate change adaptation. Another proposed textual changes to the section, including a new reference to actions under ICZM strategies to address climate change in the marine and coastal areas of the Mediterranean as one of theme's key outputs.

11. Implementation: partnerships and funding

42. The representative of the European Union requested to delete references in the MTS and other documents under consideration suggesting that the European Union had a "privileged relationship" with the Mediterranean Action Plan system and that it "would" or "should" provide funding to the system, stating that while the European Union was a contracting party to the Barcelona Convention and was committed to the Plan, any decisions about funding must be agreed upon by its 28 member States.

12. Monitoring and evaluation of the strategy

43. No comments were made on this section of the document under review.

13. Draft decision

44. The focal points reviewed the text of the draft decision, including its preamble and operative paragraphs. In the discussion on the operative paragraphs, several representatives, including one speaking on behalf of a group of countries, proposed deleting a call to the Contracting Parties to provide "full commitment" for the implementation of the MTS 2016–2021, which they said was unnecessary, might have unwanted legal implications and could lead to confusion about what that commitment entailed. Two others said that, given the importance of the MTS, it would be desirable for the Contracting Parties to explicitly state their commitment to implementing it. The focal points agreed to delete the reference.
45. Several representatives, including one speaking on behalf of a group of countries, supported deleting a request to the secretariat to maximize efforts for the mobilization of adequate resources for the implementation of the MTS. Reasons provided included that the request was unnecessary; was appropriate in context of the programme of work, which contained specific actions that had cost implications, but not in the MTS; and could distract the secretariat from other important tasks. Two other representatives supported maintaining the

request, stating that resource mobilization should be a key task of the secretariat and inclusion of the reference in the MTS could enable the secretariat to obtain funding prior to the approval of specific programmes of work. Following the discussion, the focal points agreed to maintain an amended version of the request.

46. Subsequently, the Coordinator introduced an amended version of the draft mid-term strategy and the associated draft decision, as set out in a conference room paper. The revision accommodated the comments made by the focal points during their discussions on the matter.
47. During the ensuing discussion, the focal points accepted the amended version of the mid-term strategy as the basis for further revisions to the text of the mid-term strategy to be submitted to the Contracting Parties at their nineteenth meeting.
48. In addition, the focal points agreed that the wider objectives mentioned in the mid-term strategy be referred to as “strategic objectives”.
49. The focal points agreed to strengthen the linkages between the core themes and the cross-cutting themes. One focal point said that such linkages should be specified as MAP moved towards a less fragmented, more thematic approach.
50. On the matter of the tables contained in the current draft version of the mid-term strategy, one representative, speaking on behalf of a group of countries, said that the level of detail of the key outputs was a potential problem, given the need to avoid a silo approach in defining activities. He said there were two alternative ways forward in dealing with the matter: to delete the tables and include the relevant key outputs in the programme of work and budget; to pare down the proposed outputs and group them more thematically entrusting the Secretariat to make appropriate changes, in line with the discussions at the present meeting, in order to produce a draft for presentation to the Contracting Parties at their nineteenth meeting. The meeting adopted the second option.
51. Subsequently, one representative, speaking on behalf of a group of countries, proposed the inclusion in the draft decision of an operative paragraph on the need to update the resource mobilization strategy by including all fundraising references and elements in this document to ensure coherence among the different UNEP/MAP tools and approaches and to bring it into line with the current draft of the mid-term strategy, as also set in the Resource Mobilization Strategy Annex to decision IG.20/13. The focal points agreed to entrust the Secretariat with developing appropriate text. It was agreed to submit the new Resource Mobilization Strategy to the COP 19.
52. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting, pending further discussion on the tables as indicated by the meeting.
53. The draft decision is set out in annex IV to the present report.

B. Draft decision on the Mediterranean Strategy for Sustainable Development (MSSD) 2016–2025 (draft decision 22/2)

54. The Coordinator introduced the draft decision in document UNEP(DEPI)/MED WG.421/5, along with the draft Mediterranean Strategy for Sustainable Development 2016–2025 set out in the annex to the draft decision. At the request of the Chair the representative of the Steering Committee of the Mediterranean Commission for Sustainable Development then provided additional information regarding the development and content of the draft strategy, saying that it would contribute significantly to the long-term sustainable development vision of the Mediterranean region, especially within the context of the 2030 Agenda for Sustainable Development and the adoption of the sustainable development goals by the United Nations General Assembly in September 2015. The draft strategy aimed to establish consistency between economic, social and environmental objectives, guide development of national strategies and assist regional cooperation on sustainable development.

55. In the ensuing discussion, one representative, speaking on behalf of a group of countries, said that the executive summary in the draft strategy did not accurately reflect the text of the Strategy and invited the Steering Committee to consider amending it accordingly.
56. There was some discussion of the extent to which proposals to amend the draft strategy itself should be entertained. The Chair, echoed by several focal points, suggested that as the draft strategy had been developed in a highly inclusive process in which all member States had had the opportunity to participate it was not expected that the focal points would enter into a detailed discussion of the draft strategy text. It was also noted in that context that the draft strategy was much broader in scope than was the Mediterranean Action Plan. One focal point, however, indicated that his country wished to propose changes to the objectives and annexes of the draft strategy and would maintain a reservation until the relevant sections had been discussed and its concerns addressed.
57. Several focal points stressed the importance of the strategy to the region; one said that the strategy was more than just a platform for partnerships and that the Contracting Parties should consider how to link MAP to its implementation, and another said that there was a need to strike a balance between the expectations for the implementation of the strategy and the core business and commitments of the Barcelona Convention and the MAP system.
58. There was considerable discussion, arising out of the earlier discussion of whether the strategy could create binding obligations. The discussion was driven by a concern on the part of some that the word “adopts” might be construed to suggest that the strategy was in some way legally binding and a concern on the part of others that the suggested alternatives to “adopts” did not adequately reflect the importance of the strategy and its place in the MAP system.
59. On another subject one representative, speaking on behalf of a group of countries, said that the draft decision should make no reference to the availability of funding, arguing that all references to funding should be confined to the decisions of the Contracting Parties on the programme of work and budget, in which the demands for support of all activities under the Convention and MAP could be addressed together and priorities set.
60. Following the above discussion the focal points agreed that interested participants would meet informally in an effort to reach agreement on the draft decision.
61. The focal points endorsed the draft decision, as amended by the informal group, for consideration by the Contracting Parties at their nineteenth meeting.
62. The draft decision is set out in annex IV to the present report.

C. Draft decision on the Mediterranean Offshore Action Plan in the Framework of the Offshore Protocol (draft decision 22/3)

63. The representative of the Secretariat introduced the draft decision in document UNEP(DEPI)/MED WG.421/6, along with the draft Mediterranean Offshore Action Plan set out in the annex to the draft decision.
64. Several focal points requested clarification as to how the draft action plan related to their national situations, given that they had not ratified the Offshore Protocol. One of them also asked whether the proposed action would be legally binding for States that had not ratified the Protocol and why the action plan called on Contracting Parties to ratify the Protocol by 2017. In response, the representative of the Secretariat said that the action plan was intended to guide the work for the implementation of the Offshore Protocol. It was not seen as legally binding and in any case Contracting Parties were not bound by the provisions of protocols that they had not ratified, but they should refrain from taking action against the principles and objectives of the signed Protocol. The representative of a MAP partner echoed the view that such parties would not be legally bound by the proposed action plan. He noted, however, that the action plan called for the development of guidelines that were not supported by the

Offshore Protocol, and in that context reiterated his observation that the Contracting Parties might wish to consider whether to amend the Protocol.

65. Several focal points, including one speaking on behalf of a group of countries, expressed concern about the inclusion in the draft action plan of a call for the secretariat to prepare terms of reference for a financial mechanism for the action plan, particularly given that there was no mention of such a mechanism in the draft decision. Under the financial rules, it was said, the establishment of a financial mechanism would require a proposal under the budget and would have to be effected through a decision on the budget and programme of work. It was also suggested that it was not appropriate for an individual action plan to have its own financial mechanism while others did not. The representative of REMPEC explained that the reference to a financial mechanism had been included by the experts that had drafted the action plan, who had expressed concern about the availability of funds for its implementation, and had been intended only as a preliminary or exploratory step.
66. Following the discussion it was agreed that the secretariat would prepare a revised version of the draft action plan taking into account the comments made in plenary.
67. Subsequently, the representative of REMPEC, at the invitation of the Chair, presented a revised version of the draft action plan.
68. Returning to the issue of formulating common standards and guidelines, two focal points stated that the liability and compensation provisions of the Offshore Protocol were incompatible with their countries' domestic legislation. One of them went on to say that her country would be unable to adopt any guidelines relating to liability, compensation and financial responsibility in the event of an accidental spill that might be developed as per the objective in the draft action plan, and therefore questioned the utility of employing resources for such a task.
69. Regarding the draft estimation of the required means for the implementation of such an action plan, it was deemed important to have a general idea of associated costs. It was agreed to label them as "for indicative purposes only".
70. The focal points endorsed the draft decision, as amended by the Secretariat, for consideration by the Contracting Parties at their nineteenth meeting.
71. The draft decision is set out in annex IV to the present report.

D. Draft decision on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016–2021) (draft decision 22/4)

72. At the invitation of the Chair, the representative of REMPEC introduced the draft decision on the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016–2021) (UNEP(DEPI)/MED WG.421/7), along with the draft Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016–2021) set out in the annex to the draft decision. He noted that Egypt had expressed a reservation on the text of the draft strategy and had proposed amendments to some of the specific objectives, which were shown as bracketed text in the draft strategy in document UNEP(DEPI)/MED WG.421/7. He also introduced a further revision of the draft strategy, set out in a conference room paper, that set out revisions made for the sake of consistency with revisions to the Mediterranean Offshore Action Plan (agenda item 5.3) requested by the focal points at the current meeting.
73. In the ensuing discussion one representative, noting that the draft strategy included prioritized outputs, said that the priorities stated in the draft strategy reflected the judgment of the experts that had prepared it but would not bind the Contracting Parties in their adoption of programmes of work and budgets. Responding to a query, the representative of REMPEC said that given the great number of activities included in the draft strategy and its five-year term, only activities that were considered high priority or relatively easy to implement had been included in the programme of work.

74. One representative, speaking on behalf of a group of countries, said that it should be made clear throughout the draft strategy that the delivery of outputs would be subject to the availability of resources. In that context another focal point, observing that the draft strategy was very ambitious, said that lessons should be learned from previous strategies that had been financially constrained; alternative means should be found and instruments developed to address the matter of marine pollution from ships that were less dependent on the availability of resources. Another focal point, remarking likewise on the scope of the strategy, suggested that some effort might be made in the future to standardize the scope of action plans. In the meantime every effort should be made to mobilize sufficient external resources to implement existing strategies.
75. Several representatives, including one speaking on behalf of a group of countries, expressed concern regarding text in the draft strategy on the subject of cooperation between REMPEC and the European Maritime Safety Agency (EMSA). Proposals were made to amend the text to allow for and encourage REMPEC to cooperate with EMSA, as well as with other relevant organizations, thus avoiding overlap of activities and achieving synergies, without unduly restricting its freedom of operation.
76. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.
77. The draft decision is set out in annex IV to the present report.

E. Draft decision on the Regional Action Plan on Sustainable Consumption and Production (SCP) (draft decision 22/5)

78. The Coordinator introduced the draft decision on the regional action plan on sustainable consumption and production in the Mediterranean (UNEP(DEPI)/MED WG 421/8) and the regional action plan on sustainable consumption and production in the Mediterranean contained in the annex thereto.
79. In response to a request for more information on the implementation of the action plan and the financing thereof, the representative of SCP/RAC drew attention to appendix 1 of the annex to document UNEP(DEPI)/MED WG 421/8, which provided the road map for implementation. Structured according to the four priority areas that had been identified, it contained a table detailing suggested actions, regional activities, indicators, related flagship initiatives and key partners, with which collaboration might be possible, and additional funding sources identified for implementation. He noted that the figures in the budget column of the table were simply indicative.
80. One focal point questioned the need for the budget column, especially given that the costs might rapidly become out of date, but another focal point considered the information to be very useful in giving an idea of the potential cost of any action. She nevertheless highlighted that all the elements in the appendix were “suggested” and intended as guidance. Contracting parties were not obliged to take any action; the programme of work was the place to decide on concrete activities.
81. A number of focal points emphasized the challenge that would be faced by some countries in implementing the action plan as they lacked the requisite capacities and would require substantial support. In addition to funding, technology and knowledge transfer and capacity-building were also deemed crucial for those countries and it was proposed that the provision of sufficient support be referred to in the draft decision.
82. One focal point said that any reporting required in relation to the strategy should be well thought through and could possibly be integrated in the existing reporting format to facilitate the process for parties.
83. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.

84. The draft decision is set out in annex IV to the present report.

F. Draft decision on the Regional Climate Change Adaptation Framework (draft decision 22/6)

85. The Coordinator introduced the draft decision on the regional climate change adaptation framework for the Mediterranean marine and coastal areas (UNEP(DEPI)/MED WG.421/9) and the regional climate change adaptation framework contained in the annex thereto, the background document to the regional climate change adaptation framework (UNEP(DEPI)/MED WG.421/Inf.19) and the analysis on how regional climate change adaptation framework priority fields of action and climate-related issues in general are already reflected in Protocols and other strategic instruments of the MAP (UNEP(DEPI)/MED WG 421/Inf.20).
86. A number of focal points welcomed the framework, stressing that UNEP/MAP needed to be involved in climate change issues, and to be seen to be involved. It was a necessary complement to the mid-term strategy.
87. While agreeing that UNEP/MAP involvement was crucial, one representative speaking on behalf of the European Union and its Member States, parties to the Barcelona Convention recalled the ministerial declaration adopted at the Union for the Mediterranean Ministerial Meeting on Environment and Climate Change, in May 2014, and informed the meeting that the European Union considered the Union for the Mediterranean as its preferred framework for addressing climate change adaptation. Nevertheless, UNEP/MAP had a crucial role to play, particularly through the ICZM Protocol. It was unclear, however, from the documents under consideration how climate change initiatives by UNEP/MAP and the Union for the Mediterranean would work together. More information was also needed on how funds would be raised for the regional climate change adaptation framework, which again demonstrated the need to update the resource mobilization strategy and to include all fundraising issues in this last document. She requested the Secretariat to produce a paper explaining the interaction of the two systems as well as interaction with the ICZM protocol, other relevant protocols and Action Plans and providing further details on costs for the consideration of the Contracting Parties at their nineteenth meeting.
88. Expressing their support for the framework, several focal points stressed that UNEP/MAP was within its mandate to produce its own framework on climate change adaptation, especially one that had been diligently prepared with expert input. The distribution of work in implementing the framework could come later and should certainly be done in close collaboration with the Union for the Mediterranean.
89. The representative of the Union for the Mediterranean highlighted the existing close collaboration between the Union and UNEP/MAP. The Union was fully aware of the development of the framework and the ministerial declaration in fact referred to it. The representative of the Union suggested that the framework could also be shared with Union members that were not Contracting Parties to the Barcelona Convention, for their potential endorsement.
90. The Coordinator, on behalf of the Secretariat, confirmed that the regional climate change adaptation framework for the Mediterranean marine and coastal areas would be amended to reflect more accurately its nature as a framework and not an action plan and that a paper showing the relationship between the draft and the 2014 ministerial declaration of the Union for the Mediterranean would be prepared in consultation with UfM. He urged the focal points to submit their comments without delay in order for the Secretariat to meet the deadline for submission of documents for the nineteenth meeting of the Contracting Parties.
91. The focal points agreed that the draft decision, as amended and enclosed in its entirety in square brackets, should be considered by the Contracting Parties at their nineteenth meeting.
92. The draft decision is set out in annex IV to the present report.

G. Draft decision on the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and related assessment criteria (draft decision 22/7)

93. The Coordinator introduced the draft decision on the draft integrated monitoring and assessment programme of the Mediterranean sea and coast and related assessment criteria (IMAP) (UNEP(DEPI)/MED WG.421/10/Corr.1) and the draft integrated monitoring and assessment programme contained in the annex thereto.
94. During the discussion on IMAP, one focal point asked that the draft programme be amended to include pressure-based indicators for contamination assessment, economic indicators like environmental sectors and GDP share, and provisions for pilot studies on the monitoring of biodiversity, fisheries, invasive species and marine litter. Two focal points objected to reopening the discussion on the technical aspects of the document, however, and it was agreed that the proposed additions would instead be noted for consideration in the preparation of a later version of the IMAP.
95. Turning to the draft decision on the matter, three focal points suggested that the decision be amended to include language providing for support that countries might need to implement the programme. Two of them said that as adopting IMAP would entail moving from a parameter monitoring phase to a more general monitoring phase, capacity, technical assistance and cooperation would have to be provided between regions, and the third insisted that failure to recognize at the outset the differences in countries' abilities to implement the monitoring programme would create problems during implementation.
96. Several representatives, including one speaking on behalf of a group of countries, underscored the importance of IMAP for environmental protection and monitoring. One pointed out that the programme had taken two years to develop and was specifically designed to be feasible and affordable for all countries. He cautioned against including language that might result in some countries not participating in regional monitoring, thus compromising the programme's integrity.
97. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.
98. The draft decision is set out in annex IV to the present report.

H. Draft decision on implementation of updated national action plans (draft decision 22/8)

99. The Coordinator introduced the draft decision on updated national action plans, containing measures and timetables for their implementation (UNEP(DEPI)/MED WG.421/11).
100. The focal points endorsed the draft decision for consideration by the Contracting Parties at their nineteenth meeting.
101. The draft decision is set out in annex IV to the present report.

I. Draft decision on mercury environmentally sound management guidelines (draft decision 22/9)

102. The Coordinator introduced the draft decision on the draft guidelines on best environmental practices for the environmentally sound management of mercury contaminated sites (UNEP(DEPI)/MED WG.421/12) and the guidelines contained in the annex to the draft decision.
103. One focal point asked for a small change to reflect the earlier consensus on confining funding references to the decisions of the Contracting Parties on the programme of work and budget and to the updated resource mobilization strategy, as appropriate.
104. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.

105. The draft decision is set out in annex IV to the present report.

J. Draft decision on implementing the Marine Litter Regional Plan (draft decision 22/10)

106. The Coordinator introduced the draft decision on implementing the Marine Litter Regional Plan in the Mediterranean (fishing-for-litter guidelines, assessment report, baseline values, and reduction targets) (UNEP(DEPI)/MED WG.421/13) and the fishing-for-litter guidelines, maritime litter baseline values and marine litter environmental targets contained in the annexes thereto.

107. In the ensuing discussion, a number of focal points highlighted the issue of microplastics. Two said that their countries lacked sufficient capacity to deal with microplastics, and asked for language in the decision to provide for support in that regard. A third suggested that it might be pertinent to also include language in the decision aimed at additional work on mitigation measures related to microplastics, which he described as a major marine litter issue.

108. The representative of the Secretariat responded to a number of questions posed by focal points. She explained that the 20 per cent reduction target mentioned in the document only applied to beach litter, and had been proposed by experts on the matter. She also said that the reference to reporting in the draft decision was intended to draw the attention of the Contracting Parties to the fact that the regional plan contained a commitment by countries to take measures and report on the measures taken. She suggested that the reference to reporting might instead be included in a draft decision on reporting being considered at the present meeting.

109. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.

110. The draft decision is set out in annex IV to the present report.

K. Draft decision on the Mid-Term Evaluation of the Action Plan for ICZM (draft decision 22/11)

111. The Coordinator introduced the draft decision on the mid-term evaluation of the action plan for the implementation of the ICZM Protocol for the Mediterranean (2012–2019) (UNEP(DEPI)/MED WG.421/14) and the mid-term evaluation set out in the annex thereto.

112. One representative, speaking on behalf of a group of countries, suggested that the Secretariat could work constructively with PAP/RAC with a view to the establishment of an ICZM framework for potential inclusion as part of the mid-term strategy. One focal point pointed out that a provision for an adequate framework for the implementation of ICZM, including climate change aspects, already existed as per art. 17 (MSICZM) of the ICZM Protocol. It was agreed that the latter should be considered to inform the possibility of developing an ICZM framework.

113. The focal points endorsed the draft decision for consideration by the Contracting Parties at their nineteenth meeting.

114. The draft decision is set out in annex IV to the present report.

L. Draft decision on the action plans concerning cetaceans, coralligenous and other calcareous bio-concretions, and species introductions and invasive species under the SPA and the Biodiversity Protocol (draft decision 22/12)

115. The chair introduced the draft decision on updated action plans concerning “Cetaceans”, “Coralligenous and Other Calcareous Bio-concretions”, and “Species Introductions and Invasive Species”; and “Action Plan on Marine and Coastal Birds” and “Reference List of Marine and Coastal Habitat Types in the Mediterranean” (UNEP(DEPI)/MED WG 421/15), the draft updated action plan for the conservation of cetaceans in the Mediterranean sea

contained in annex I to the decision, draft updated action plan for the conservation of the coralligenous and other calcareous bio-concretions in the Mediterranean sea contained in annex II to the decision, and the draft updated action plan concerning species introductions and invasive species in the Mediterranean sea contained in annex III to the decision.

116. One focal point proposed a number of changes to annex III to the draft decision, including the deletion of text listing specific pathways through which marine alien species had been unintentionally introduced in the Mediterranean; the inclusion of a reference to climate change as being one of the causes of alien species introduction in the Mediterranean and a reference to enhancing international cooperation as a means to deal with alien species; the replacement of two references to the “prevention” of the introduction of alien species by “minimization”; and the addition of references specifying that two types of national actions under the action plan should be in accordance with national legislation.
117. During the ensuing discussion, several focal points reacted to the proposed changes to annex III. Several representatives, including one speaking on behalf of a group of countries, opposed deleting the text on pathways, saying that it was based on scientific evidence and that such pathways should be identified in the action plan to guide the actions to be undertaken by Contracting Parties under the plan.
118. Following an explanation by the Secretariat that the text had been discussed and agreed during the twelfth meeting of the Focal Points for Specially Protected Areas and was based on scientific evidence, the representative who had proposed deleting the text questioned its scientific basis and reiterated his proposal to delete the text. In an attempt to reach a compromise, a number of representatives proposed amendments to the text, including the listing of pathways without ranking their importance and the references to “artificial canals” or to “straits and corridors”.
119. Regarding the proposed reference to taking immediate steps to deal with invasive species “through international cooperation”, one representative, speaking on behalf of a group of countries, expressed concern that such a reference would limit the actions of the Contracting Parties to international cooperation activities when in fact they could tackle the issue through national-level action. The focal points agreed to include a reference to national actions as well as regional and international cooperation.
120. One representative questioned the proposal that the introduction of alien species should be minimized rather than prevented, stating that the cost of corrective action after species had been introduced could be significantly greater than that of preventive action.
121. Regarding the addition of references to two types of national actions as being in accordance with national laws, one representative speaking on behalf of a group of countries expressed reservation about adding such references, which, she said, were unnecessary, might downgrade the status of actions to be taken under the action plan, and implied that all countries had adopted legislation requesting that the actions discussed be undertaken, which might not be the case.
122. Following the discussion, the focal points requested interested parties to meet bilaterally to develop a proposal on all unresolved issues for the consideration of the focal points.
123. In the discussion on the draft decision, one representative said that its title should be amended to more accurately reflect its content. Regarding the body of the decision, one representative suggested that the Contracting Parties should “take note of”, rather than “adopt”, the updated action plan contained in annex III to the decision. Other focal points opposed such a change.
124. The focal points endorsed the draft decision for consideration by the Contracting Parties at their nineteenth meeting, leaving text in brackets pending resolution of the outstanding issues in annex III.
125. The draft decision is set out in annex IV to the present report.

M. Draft decision on the Roadmap for a Comprehensive Coherent Network of Well-managed MPAs (draft decision 22/13)

126. The Coordinator introduced the draft decision on a road map for a comprehensive coherent network of well-managed MPAs (UNEP(DEPI)/MED WG.421/16) and the draft road map for a comprehensive coherent network of well-managed MPAs to achieve Aichi target 11 in the Mediterranean set out in the annex thereto.
127. In the ensuing discussion, the representative of Turkey said that her country was not a party to the United Nations Convention on the Law of the Sea and therefore retained its full right not to comply with any obligations arising out of that Convention. One focal point, noting that the road map described in the annex to the draft decision was effectively an action plan, requested that the Secretariat prepare proposed definitions of nomenclatures designating UNEP/MAP tools i.e. “road map”, “action plan”, “strategy” etc. for consideration by the Contracting Parties at their nineteenth meeting with a view to arriving at a common understanding of their content and legal basis and of the requirements in each case, particularly with respect to compliance mechanism, in the interest of future efficiency. He also asked the SPA/RAC to submit to the next COP a matrix comparing the Regional Working Programme for the coastal and marine protected areas in the Mediterranean sea including the high sea and the Roadmap in order to avoid duplications and to clarify the mutual links and functions. All footnotes should also be deleted from the road map, as their use in that context was inappropriate, and the terms “open seas” and “deep seas” must in all cases be substituted with “high seas”, it being the only term with a legal definition. Another focal point underscored the importance of the road map as a tool for the regional implementation of the Convention on Biological Diversity and the achievement of Aichi Biodiversity Target 11 in the Mediterranean. The Coordinator confirmed in response to a question that the road map essentially comprised no new actions but was rather intended to guide Contracting Parties towards the attainment of Target 11 by 2020.
128. Concerning the suggested actions, one focal point proposed various amendments in connection with the references to ecologically or biologically significant marine areas, the establishment of a Mediterranean Fund for MPAs, and areas beyond national jurisdiction. Amendments aimed at improving the operative part of the text were also proposed.
129. One focal point said that standard language should be used in instances where the Contracting Parties were asked, in draft decisions, to give budgetary expression to activities outlined in roadmaps and action plans, in order to ensure that the language used did not reflect the level of budgetary expectation for that activity. Another focal point said that the financial resources of MAP were often not sufficient to implement the actions being approved in draft decisions. It was the task of the resource mobilization strategy to act as a standard reference mechanism for fundraising to implement activities that were not directly related to the core budget. Therefore, it was decided to move actions included in objective 4 of the Roadmap in the resource mobilization strategy to ensure a strategic and coherent approach to meet the financial needs of MPAs.
130. The focal points agreed that the draft decision, as amended and enclosed in its entirety in square brackets, should be considered by the Contracting Parties at their nineteenth meeting.
131. The draft decision is set out in annex IV to the present report.

N. Draft decision on the List of Specially Protected Areas of Mediterranean Importance (draft decision 22/14)

132. The representative of the Secretariat introduced the draft decision on the list of Specially Protected Areas of Mediterranean Importance (SPAMI List) (UNEP(DEPI)/MED WG.421/17).
133. In response to a question from a focal point, the representative of the Specially Protected Areas Regional Activity Centre (SPA/RAC) explained that SPA/RAC would compare the

revised format for the periodic review of Specially Protected Areas of Mediterranean Importance (SPAMI) to the previous format with the aim of proposing improvements to the format for consideration by the Contracting Parties at their nineteenth meeting.

134. The focal points endorsed the draft decision, as amended, for consideration by the contracting parties at their nineteenth meeting.
135. The draft decision is set out in annex IV to the present report.

O. Draft decision on compliance committee and mechanism (draft decision 22/15)

136. The Chair of the Compliance Committee presented the draft decision on monitoring in terms of compliance, renewal of the Compliance Committee members, and working programme for the biennium 2016–2017 (UNEP(DEPI)/MED WG.421/18).
137. Several focal points paid tribute to the Compliance Committee for its vital contribution towards ensuring the implementation of the Barcelona Convention. One focal point nonetheless adjudged his recent experience of a hearing with the Compliance Committee concerning his country's reporting obligations to have been unsatisfactory in terms of both the approach adopted by the Committee and the competence of some of its members. He therefore called for steps to be taken to address the Committee's own gaps in its *modus operandi* in the interest of enhancing its efficiency, including by avoiding duplication with the work of other reporting bodies. Two other focal points expressed their support for that view, saying that the reporting mechanism must be strengthened and streamlined, particularly as with the advent of the new mid-term strategy reporting would serve an increasingly crucial role in ensuring that Contracting Parties were on the right track towards the fulfilment of their obligations.
138. Another focal point stressed that the Committee, in deciding whether to call a contracting party to account for non-compliance with its reporting obligations, should take mitigating factors into consideration, as in the case of the prolonged conflict situation in her country that had prevented the collection of the required data. The Chair of the Compliance Committee said in response that, in those circumstances, the Committee followed its rules of procedure with the aim of soliciting from the contracting party concerned information that would assist its understanding of the facts on the ground, including in order to propose appropriate technical support from MAP components for tackling specific difficulties. While reviewing the proposed programme of work of the Compliance Committee for 2016-2017, the focal points requested to add a task to assess the binding nature for the Contracting Parties of commitments and obligations undertaken in the MAP system, i.e. action plans, regional plans, etc.
139. The focal points endorsed the draft decision, as amended, for consideration by the contracting parties at their nineteenth meeting.
140. The draft decision is set out in annex IV to the present report.

P. Draft decision on reporting (draft decision 22/16)

141. The representative of the Secretariat introduced the draft decision on the revised reporting format for the implementation of the Barcelona Convention and its Protocols; and operational section of the reporting format for the Protocol on the Integrated Coastal Zone Management (ICZM) in the Mediterranean (UNEP(DEPI)/MED WG.421/19), noting that the revised format for party reporting on implementation of the Barcelona Convention and its protocols would be considered by the Compliance Committee the following week and subsequently by the Contracting Parties at their nineteenth meeting. If the Compliance Committee proposed significant changes, the focal points would be consulted before the revised format was considered at the nineteenth meeting of the Contracting Parties.
142. Given that the revised format for party reporting on implementation of the Barcelona Convention and its protocols was soon to be considered by the Compliance Committee and

the Contracting Parties, the focal points decided to defer to a future meeting their consideration of the draft revised operational section of the ICZM reporting format.

143. The focal points requested the secretariat to prepare an information note to clarify the legally-binding nature of reporting obligations for the Contracting Parties as per article 26 of the Barcelona Convention in relation to their specific ratification status of the Convention and its Protocols.

Q. Draft decision on MCSD governance (draft decision 22/17)

144. The Coordinator introduced the draft decision on the reform of the Mediterranean Commission on Sustainable Development (MCSD) and updated MCSD constitutive documents (UNEP(DEPI)/MED WG.421/20), the updated version of the MCSD constitutive documents set out in annex I thereto, and the proposal for a simplified peer review set out in annex II.
145. Responding to questions, the Coordinator said that the current terms of reference of the Mediterranean Commission on Sustainable Development (MCSD) provided that any amendments to the Commission's rules of procedure should be proposed by MCSD and approved by the Contracting Parties to the Barcelona Convention, while decision IG.17/5, on the governance paper, stated that recommendations by MCSD should be presented for consideration by the Contracting Parties once they had been discussed by the MAP focal points. Focal points were therefore invited to discuss at the current meeting the draft decision submitted by MCSD, including its annexes; the secretariat would compile the views expressed on the decision and transmit them to COP 19 along with the text of the draft decision as submitted by MCSD.
146. In the ensuing discussion, the focal points examined each of the three sections of annex I to the proposed draft decision, on the rules of procedure, terms of reference and composition of MCSD. Substantive comments were made on the first two sections.
147. Regarding the rules of procedure, one representative, speaking on behalf of a group of countries, proposed deleting a sentence stating that meetings of MCSD subsidiary bodies should be held in private unless otherwise decided by MCSD, saying that the trend toward increased stakeholder participation in international environmental processes required that meetings be open unless otherwise decided. Another representative proposed adding a request that the Coordinator "consult with member States" or with the MCSD Steering Committee prior to sending invitations to representatives to participate in MCSD meetings as observers. Another representative objected to this proposal, stating that it might not be in accordance with the rules of the United Nations and that it contradicted the rules of procedure of UNEP, under which the Executive Director of UNEP could invite anyone to the meetings of the Contracting Parties to the Barcelona Convention or associated meetings, including MCSD meetings, unless a two-third majority of the parties voted against the invitation.
148. The focal points then provided comments on a rule regarding MCSD Steering Committee meetings. Two representatives, including one speaking on behalf of a group of countries, proposed deleting a sentence requesting the Secretariat to allocate resources for such meetings in the programme of work and budget to be considered by the Contracting Parties, noting that budgetary issues should be dealt with in the programme of work and budget. Another representative opposed deleting the text, suggesting that it was essential to support the Steering Committee through the programme of work and budget to ensure the continuity and proper functioning of MCSD.
149. The representative of a non-governmental organization urged the focal points to retain the text, which he said merely reflected an aspiration of MCSD to obtain adequate support to ensure its survival and improve its functioning and did not bind the Contracting Parties to provide it.

150. Regarding the MCSD terms of reference, one representative, speaking on behalf of a group of countries, opposed by another, proposed replacing text providing that the conclusions of MCSD meetings should influence the programme of work of the MAP system and the implementation of the Barcelona Convention by the Contracting Parties with text stating that the records of such meetings would be sent to the MAP system “for consideration.”
151. The focal points reviewed the text of the draft decision. Two representatives, including one speaking on behalf of a group of countries, expressed support for deleting the text regarding the consideration of the need for increased staff resources from the MAP system to support effectively the work of the MCSD, which they said belonged in the programme of work and budget, while two others opposed such a deletion.
152. Concerning the operative paragraphs of the draft decision, it was agreed that it would be more appropriate for the meeting of the Contracting Parties to “approve” rather than “adopt” the rules of procedure, terms of reference and composition of MCSD.
153. Wording was also agreed to the effect that the Contracting Parties should ask the secretariat to consider the need for at least one face-to-face meeting of the MCSD Steering Committee in the intersessional period between meetings, rather than agree, by virtue of the text as currently worded, to allocate funding for that purpose from a UNEP/MAP programme of work and budget that had not yet been adopted. One representative expressed dismay at the negative implications of the proposed wording in that it appeared to call into question the work of the MCSD Steering Committee and indeed the unique value of MCSD to the Mediterranean region. One focal point responded that in no way should the concern to avoid inadvertent budgetary obligations be construed as diminishing the importance of MCSD, which made vital recommendations to be taken fully into account by the Contracting Parties during their consideration of the programme of work and budget. One focal point asked the deletion of the last sentence of point C.5 “Functioning” of the Terms of References as it is not compatible with the advisory nature of the MCSD.
154. In addition to other suggestions made for improving the text, it was noted that the process set out in annex II should be reformulated in a way that made it simpler to understand and easier to identify the actors involved, which would in turn assist the work of the Steering Committee.
155. It was agreed to refer in the draft decision to “Palestine” instead of “the State of Palestine”. In welcoming the agreement on the text of the draft decision on the Reform of the MCSD and Updated MCSD Constitutive Documents, the Representative of the EU and its Member States asked to put on record that the use of the term "Palestine" in this decision could not be construed as recognition of a State of Palestine and was without prejudice to the individual positions of the Member States on this issue
156. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.
157. The draft decision is set out in annex IV to the present report.

R. Draft decision on cooperation agreements and MAP partners (draft decision 22/18)

158. The representative of the Secretariat introduced the draft decision in document UNEP(DEPI)/MED WG.421/21/Corr.2.
159. Following the discussion, the focal points suggested modifications and endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting.
160. The draft decision is set out in annex IV to the present report

S. Draft decision on Environment Friendly City Award (draft decision 22/19)

161. The representative of the Secretariat introduced the draft decision in document UNEP(DEPI)/MED WG.421/22, along with the main elements for the process for awarding the Environment Friendly City Award set out in the annex to the decision.
162. Several focal points expressed concern about whether the cost of the Environment Friendly City Award would be defrayed through the Mediterranean Trust Fund (MTF). One representative, speaking on behalf of a group of countries, proposed that text be added to the draft decision to provide explicitly that any such cost be met solely from extra budgetary resources. The representative of the Secretariat said that to date no MAP resources had been expended on the award and that all costs so far had been paid by Turkey.
163. Regarding the award itself, one focal point suggested that it might be preferable to present two awards each biennium: one to a northern city and to a southern city, as the environments and circumstances of the two were usually very different. Several focal points suggested that in selecting the award recipients consideration should be given to environmental progress made by the candidate cities over time.
164. Several focal points noted that the call for the establishment of the Environment Friendly City Award had come in the Istanbul Declaration adopted by the Contracting Parties at their eighteenth meeting. Several focal points expressed the view that a declaration alone was not sufficient to provide a mandate for the establishment of the award and that Contracting Parties must in addition adopt a formal decision on the subject. Thus, it was suggested, a paragraph to that effect should be added to the draft decision.
165. The focal points endorsed the draft decision, as amended, for consideration by the Contracting Parties at their nineteenth meeting. A number of focal points thanked Turkey for agreeing that extra budgetary resources should be used for the award.
166. The draft decision is set out in annex IV to the present report.

T. Draft decision on programme of work and budget 2016–2017 (draft decision 22/20)

167. The focal points attended an informal session where the secretariat presented the proposed programme of work and budget 2016–2017 (UNEP(DEPI)/MED WG.421/24). The focal points subsequently agreed to review the draft decision and the proposed programme of work and budget 2016–2017 at the COP 19, taking into account possible revisions to reflect changes in the mid-term strategy. One focal point asked the Secretariat to prepare an information document including details on salaries and administrative costs of the Regional Activity Centres and to submit it to the next COP.

U. Implementation of decision IG.21/16 “Assessment of the Mediterranean Action Plan”

168. The Coordinator introduced the note by the Secretariat on the implementation of decision IG.21/16 “Assessment of the Mediterranean Action Plan” (UNEP(DEPI)/MED WG.421/23), including three possible options for the way forward in terms of the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II).
169. Several focal points highlighted that MAP Phase II was sufficiently robust to take into account recent and future global and regional developments and that it was not necessary to revise it, with one focal point emphasizing that it would be a waste of budget resources. One representative, speaking on behalf of a group of countries, stressed the importance of seeking ways to adapt the MAP system to the global agenda at the Nineteenth Meeting of the Contracting Parties.
170. The focal points agreed to defer the discussion on this matter to COP 19.

V. Provisional agenda of the nineteenth meeting of the Contracting Parties

171. Introducing the item, the Coordinator said that information on the theme and agenda of the nineteenth meeting of the Contracting Parties to the Barcelona Convention, to be held in Athens from 9 to 12 February 2016, was set out in the annexes to two conference room papers together with a draft decision on the matter. The theme, he said, was “Forty years of cooperation for a healthy and productive Mediterranean Sea and coast: a collective journey towards sustainable development”.
172. The representative of Greece as host country said that, in line with tradition, the meeting would include a ministerial segment on 11 February 2016. The theme would combine the long experience of MAP in contributing to the protection of the Mediterranean environment with current initiatives on sustainable development and climate change. He encouraged the Contracting Parties to aim for the highest possible ministerial involvement in the meeting, given the importance of the agenda and theme.
173. The focal points agreed on the proposed provisional agenda and theme of the nineteenth meeting of the Contracting Parties set out in annex V to the present report.

W. Any other business

174. One representative drew attention to the European Union Strategy for the Adriatic and Ionian Region, which aimed to promote economic and social prosperity and growth in the region. The next meeting under the strategy would be held in Slovenia from 10 to 13 November 2015, and partners from within the MAP system were invited to participate.
175. The representative of Turkey informed the meeting that they had submitted a statement to the secretariat to be included in the report of the meeting. The statement is contained in annex VI to this report.

X. Adoption of the report

176. It was agreed that the Secretariat would circulate the text of the draft report of the meeting to the focal points by e-mail, inviting feedback, and produce, on the basis of the comments received, a revised draft version of the text of the report for subsequent adoption.
177. The meeting reviewed the draft decisions that had been agreed under the relevant agenda items and agreed to submit them for consideration by COP 19, as presented in annex IV to this report, and to mandate the Secretariat to further work on a number of draft decisions as indicated by the meeting.

Y. Closure of the meeting

178. Following the customary exchange of courtesies, the meeting was declared closed at 5.30 p.m. on Friday, 16 October 2015.

Annex I

ANNEX I

LIST OF PARTICIPANTS / LISTE DES PARTICIPANTS

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Annex II

Your Excellency, Coordinator of the Mediterranean Action Plan,

Mr. Chairman

*Circulated in
plenary.*

Dear Delegates,

It is my pleasure to welcome you again to Athens for the 2nd National Focal Points Meeting of the Mediterranean Action Plan (MAP) that is going to prepare the forthcoming 19th Conference of the Parties that we are going to host here in Athens, next February.

The Mediterranean Action Plan is gradually leaving behind the severe issues that have surfaced in recent years and is now in a forward looking mode, focusing on the actual environmental and ecological challenges of the Mediterranean. The agenda of your meeting is very challenging, tackling issues of strategic nature that will guide the future work of UNEP/MAP and the Barcelona Convention for the years to come, such as the Mid-Term Strategy. On the same time, you have a number of thematic decisions to discuss in order to forward them to the Conference of the Parties for adoption. These are also very important in order to make the Mid-Term Strategy more concrete and guide the work of UNEP/MAP in specific directions that will help tackling some of the most important challenges that our region faces in order to achieve a good environmental status of the Mediterranean, contributing to sustainable development.

In this respect, I consider very important the coherence between the strategic frameworks and the thematic decisions. Such coherence, together with prioritization of actions, is very important so as to make best use of the available resources. We may have left the biggest problems behind us, but the UNEP/MAP system is still overstretched and therefore we need to be efficient and realistic. At the same time, I have to thank the Secretariat for the hard and dedicated work during this last biennium.

For the past 40 years, the Barcelona Convention and UNEP/MAP has been providing a framework for regional cooperation that promotes the protection of the

natural and built environment of the Mediterranean Region and has served as a model for other regions of the world. Greece on its part, as a host country of the Coordinating Unit of UNEP/MAP, has been providing its continuous support to the work of the MAP system. We believe that, as regards the dimension of the protection of the environment, MAP and the Barcelona Convention can contribute in a meaningful way to sustainable development and the regional implementation of Agenda 2030.

At the same time, this is still a crucial period for many countries of the Mediterranean, having to deal with a number of economic, social and political challenges. The Barcelona Convention will continue to act as an effective framework for regional cooperation, supporting peace and stability in our region.

Dear participants,

Your meeting will guide us to the Conference of the Parties, where we will have the opportunity to celebrate the 40 years of UNEP/MAP and the Barcelona Convention. This anniversary is a great opportunity to increase the visibility of the UNEP/MAP system and its long history of achievements and on the same time to renew our commitment in fulfilling the mandates of the Barcelona Convention.

I know that you have a challenging and difficult week in front of you. I wish you a fruitful and successful outcome of your deliberations.

Annex III

Provisional Agenda

- 1. Opening of the Meeting**
- 2. Organizational Matters**
 - a) Rules of Procedure for Meeting of the MAP Focal Points
 - b) Election of Officers
 - c) Adoption of the Provisional Agenda
 - d) Organization of Work
- 3. Progress Report on Activities Carried Out during the 2014 – 2015 Biennium**
- 4. Financial Implementation 2014-2015**
- 5. Specific Matters for Consideration and Action by the Meeting**
 - 5.1 Draft Decision on Mid-Term Strategy (MTS) 2016-2021
 - 5.2 Draft Decision on the Mediterranean Strategy for Sustainable Development (MSSD) 2016-2025
 - 5.3 Draft Decision on the Mediterranean Offshore Action Plan in the Framework of the Offshore Protocol
 - 5.4 Draft Decision on Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021)
 - 5.5 Draft Decision on the Regional Action Plan on Sustainable Consumption and Production (SCP)
 - 5.6 Draft Decision on Regional Climate Change Adaptation Framework
 - 5.7 Draft Decision on Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria
 - 5.8 Draft Decision on Implementation of Updated National Action Plans
 - 5.9 Draft Decision on Mercury Environmentally Sound Management Guidelines
 - 5.10 Draft Decision on Implementing the Marine Litter Regional Plan
 - 5.11 Draft Decision on the Mid-Term Evaluation of the Action Plan for ICZM
 - 5.12 Draft Decision on the Action Plans concerning Cetaceans, Coralligenous and Other Calcareous Bio-concretions, and Species Introductions and Invasive Species, under the SPA and Biodiversity Protocol
 - 5.13 Draft Decision on the Roadmap for a Comprehensive Coherent Network of Well-Managed MPAs
 - 5.14 Draft Decision on the List of Specially Protected Areas of Mediterranean Importance
 - 5.15 Draft Decision on Compliance Committee and Mechanism
 - 5.16 Draft Decision on Reporting
 - 5.17 Draft Decision on MCSD Governance
 - 5.18 Draft Decision on Cooperation Agreements and MAP Partners
 - 5.19 Draft Decision on Environmental Friendly City Award
 - 5.20 Draft Decision on Programme of Work and Budget 2016-2017
 - 5.21 Implementation of Decision IG.21/16 “Assessment of the Mediterranean Action Plan”
- 6. Provisional Agenda of the 19th Meeting of the Contracting Parties**
- 7. Any Other Business**
- 8. Adoption of the Report**
- 9. Closure of the Meeting**

Annex IV

Draft Decision IG.22/1

UNEP/MAP Mid-Term Strategy 2016-2021

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling Article 4 of the Barcelona Convention and its Protocols;

Recalling also Decisions IG.17/5 on Governance Paper of COP 15 (Almeria, Spain, January 2008) and in particular Section 6 “Work Programme and Long-Term Planning”, and IG.21/13 of COP 18 (Istanbul, Turkey, December 2013) on Governance mandating the preparation of the UNEP/MAP Mid-Term Strategy for the period 2016-2021;

Concerned with the increasing pressures on the Mediterranean marine and coastal environment, as highlighted in the 2012 UNEP/MAP State of Environment Report, and with the continuing unsustainable consumption and production patterns in the region;

Acknowledging the need for translating to the Mediterranean regional and national levels the global aspirations expressed by Rio+20 and the 2030 Agenda for Sustainable Development including its SDGs;

Reaffirming the commitment to implement the Barcelona Convention and its Protocols, MSSD and other Regional Strategies and Action Plans to achieve Good Environmental Status and contribute to Sustainable Development;

Aware of the need for a strategic framework that ensures coherence, continuity, increased efficiency, and effectiveness and relevance of the MAP/Barcelona Convention system considering the need to match the ambition with predictable and realistic resource mobilisation;

Adopts the UNEP/MAP Mid-Term Strategy 2016-2021 (hereinafter referred to as “the MTS”) as contained in the Annex to this Decision, as the framework for the development and implementation of the Programme of Work of UNEP/MAP;

Urges partner organizations to collaborate and support the implementation of the MTS, ensuring synergy, harmonization of efforts, and optimization of the use of resources;

Requests the Secretariat to maximize efforts for the implementation of the MTS in an integrated manner and for the mobilization of adequate resources through an updated Resource Mobilisation Plan in cooperation with Contracting Parties and partner organizations; ~~(mention of possible revisions to the resource mobilisation plan)~~

Requests also the Secretariat to monitor and report on the MTS implementation on the basis of each biennial Programme of Work as adopted by the Meeting of the Contracting Parties, highlighting its contribution of the PoW to the achievement of the MTS objectives and strategic outcomes;

Requests the Secretariat to launch an independent evaluation of the MTS implementation in 2020 for the consideration of COP 22 in 2021, with special emphasis on the interlinkages with the objectives of the MSSD 2016-2025 and the UNEP/MAP EcAp-based Ecological Objectives.

Annex
UNEP/MAP MID-TERM STRATEGY 2016 – 2021

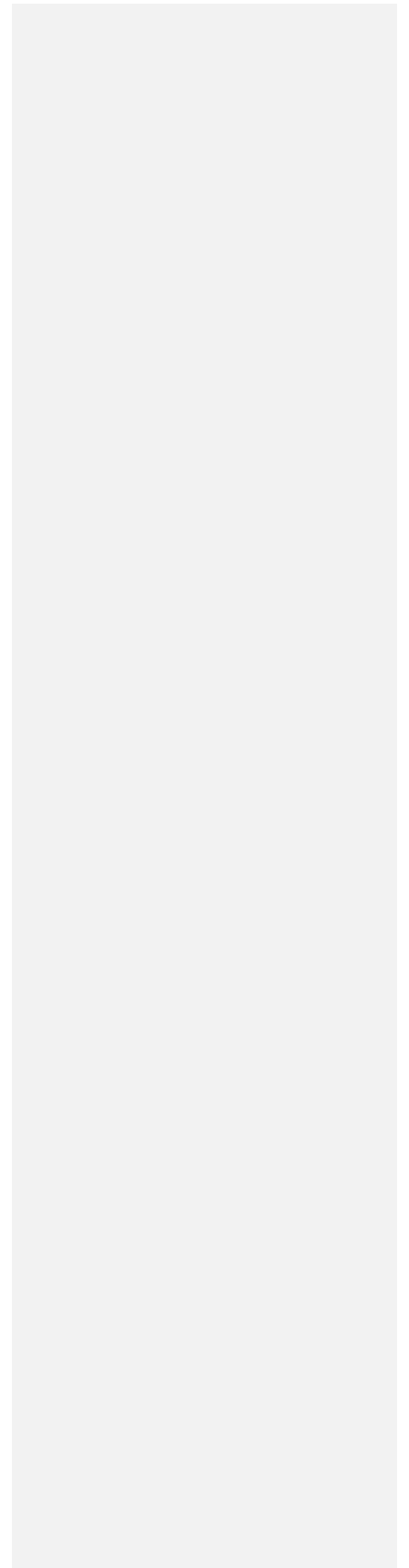


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ACRONYMS AND ABBREVIATIONS

ABNJ	Areas Beyond National Jurisdiction
ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area
BC	Barcelona Convention
BP/RAC	Blue Plan RAC
CAMPs	Coastal Area Management Programmes
CBD	Convention on Biological Diversity
ClimVar & ICZM	Integration of climate variability and change into national strategies for the implementation of the ICZM Protocol in the Mediterranean (GEF project)
COP	Conference of Parties
CP(s)	Contracting Party (-ies)
CP/RAC	Cleaner Production RAC (now SCP /RAC)
DEPI	Division of Environmental Policy Implementation (UNEP)
EC	European Commission
EcAp	Implementation of the Ecosystem Approach in the Mediterranean (EU Project)
ECP	Executive Coordination Panel (MAP)
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FFEM	French Global Environment Fund (Fonds Français pour l'Environnement Mondial)
FP(s)	Focal Points
FRA _s	Fisheries Restricted Areas
GEF	Global Environment Facility
GES	Good Environmental Status
GFCM	General Fisheries Commission for the Mediterranean (FAO)
GPML	Global Partnership on Marine Litter (UNEP)
GPWW	Global Partnership on Waste Water (UNEP)
GPSW	Global Partnership on Solid Waste (UNEP)
GWP-Med	Global Water Partnership - Mediterranean
H2020	Horizon 2020 Programme (EU)
HELCOM	Baltic Marine Environment Protection Commission - Helsinki Commission
HW	Hazardous Wastes
ICZM	Integrated coastal zone management
IAEA	International Atomic Energy Agency
IHP	International Hydrological Programme (UNESCO)
IMO	International Maritime Organisation
Info/MAP	UN Mediterranean knowledge platform
INFO/RAC	Regional Activity Centre for Information and Communication
IOC	International Oceanographic Committee (UNESCO)
IUCN	International Union for Conservation of Nature
LBS	Land Based Sources
LRTAP	Long Range Transfer of Air Pollution
MAP	Action Plan for the Protection and Development of the Mediterranean Basin
MARPOL	International Convention for the Prevention of Pollution from Ships
MED POL	Programme for the Assessment and Control of Marine Pollution in the Mediterranean
MedPAN	Network of Managers of Marine Protected Areas in the Mediterranean

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MedPartnership	Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (GEF Project also referred to as Regional Component of the Strategic Partnership)
MIO-ECSD	Mediterranean Information Office for Environment, Culture and Sustainable Development
MPA	Marine protected area
MCSD	Mediterranean Commission for Sustainable Development
MSSD	Mediterranean Strategy for Sustainable Development
MTF	Mediterranean Trust Fund (MAP)
MTS	Mid Term Strategy
NAP	National Action Plan
NGO	Non-Governmental Organisation
NSSD	National Strategy for Sustainable Development
OSPAR	Oslo and Paris Conventions (Full name not in common use)
PAP/RAC	Priority Actions Programme RAC
PEGASO	People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast (Project)
PoW	Programme of Work
PSSAs	Particularly Sensitive Sea Areas
RAC	Regional Activity Centre
ReGoKo	Regional Governance & Knowledge Generation Project (World Bank)
REMPEC	Regional Marine Pollution Emergency Response Centre
SAP	Strategic Action Programme
SAP-BIO	Strategic Action Programme for the Conservation Biological Diversity in the Mediterranean Region
SAP-MED	Strategic Action Programme to Address Pollution from Land-Based Activities
SCP	Sustainable Consumption and Production
SCP/RAC	Sustainable Consumption and Production RAC (formerly, CP/RAC)
SDG	Sustainable Development Goals (UN)
SEA	Strategic Environmental Assessment
SEIS	Shared Environmental Information System (EU)
SFFA	Small scale funding agreement
SMART	Specific, measurable, attainable, relevant and time-bound
SPAs	Specially protected areas
SPA/RAC	Specially Protected Areas RAC
SPAMIs	Specially Protected Areas of Mediterranean Importance
SWITCH-Med	Switching to more sustainable consumption and production in the Mediterranean (EU Project)
SWIM	Sustainable Water Integrated Management (EU Project)
TEST	Transfer of environmentally sound technologies
UfM	Union for the Mediterranean
UNEA	United Nations Environment Assembly
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
UNFCCC	United Nations Framework Convention for Climate Change
UNIDO	United Nations Industrial Development Organisation
WB	World Bank
WHO	World Health Organisation
WSSD	World Summit on Sustainable Development
WWF-MedPO	World Wide Fund for Nature – Mediterranean Programme Office

1. INTRODUCTION

The MAP/Barcelona Convention system celebrates in 2015-2016 forty years of fruitful collaboration and joint efforts for the Mediterranean environment. With its seven Protocols, its administrative structure encompassing six Regional Activity Centers and – most importantly its twenty two Contracting Parties, this UN Regional Programme builds on a meaningful experience to prepare its future in a holistic and integrated way.

The Mid-Term Strategy (MTS) is meant to guide the path for the protection of the Marine Environment and the Coastal Region of the Mediterranean and contribution to sustainable development of the Mediterranean Region for the period 2016-2021.

In line with the Rio+20 Outcome Document, the priorities of the MTS are intended to be “*action-oriented, concise and easy to communicate, limited in number, aspirational, universally applicable to all countries in the region, while taking into account different national realities, capacities and levels of development and respecting national policies and priorities.*” They are developed to be “*focused on priority areas for the achievement of sustainable development*”.

The priority themes reflect legal commitments and to major needs, they contribute to the MSSD objectives and they are part of the global efforts for sustainable development. Their respective outputs are expected to be achieved through the three successive MAP biennial Programmes of Work of the 6-year period.

The timing of the preparation of the MTS has presented opportunities and challenges. The processes of definition of the global Sustainable Development Goals (SDGs), the upcoming development of a new climate agreement within the UNFCCC framework and the new climate agreement, the review of the Mediterranean Strategy for Sustainable Development (MSSD), the parallel MAP processes of development of other MAP strategic documents on issues of increasing impact on the region, the development were all unrolling simultaneously. This has presented the unique opportunity of making the MAP-lead processes converge into one strategic package being developed at once, while benefiting from the global debate leading to the new sustainable development agenda.

2. THE GENERAL PICTURE AND THE MAP/BARCELONA CONVENTION SYSTEM

2.1. State of the Mediterranean Environment

The Mediterranean comprises a vast set of coastal and marine ecosystems that deliver valuable benefits to all of its coastal inhabitants, including brackish water lagoons, estuaries, transitional areas, coastal plains, wetlands, rocky shores and near shore coastal areas, seagrass meadows, coralligenous communities, frontal systems and upwellings, seamounts, and pelagic systems (State of the Mediterranean Marine and Coastal Environment, UNEP/MAP 2012).

The Mediterranean region is one of the world’s 25 top biodiversity hotspots characterized as an area of exceptional biodiversity value, with a large number of endemic species (i.e. native only to the region) and critical levels of habitat loss. The Mediterranean also hosts a diverse array of habitats of commercial, ecological, and cultural importance.

The total population of the Mediterranean countries grew from 276 million in 1970 to 412 million in 2000 (a 1.35% increase per year) and to 466 million in 2010. The population is predicted to reach 529 million by 2025. The Mediterranean region’s population is concentrated near the coasts. More than a third lives in coastal administrative entities totaling less than 12% of the surface area of the Mediterranean countries. The population of the coastal areas of the Mediterranean grew from 95 million in 1979 to 143 million in 2000, and could reach 174 million by 2025 (UN/MAP/BP/RAC 2005).

The Mediterranean region is undergoing intensive demographic, social, cultural, economic and environmental changes. The main drivers affecting the economic development in the Mediterranean

are agriculture and forests, urbanization, tourism, industry and maritime transport. Population growth combined with the growth of coastal (peri) urban hubs generates multiple environmental pressures stemming from increased demand for water and energy resources, generation of air and water pollution in relation to wastewater discharge or sewage overflows, waste generation, land consumption and degradation of habitats, landscapes and coastlines. These pressures are further amplified by the development of tourism, often concentrated in Mediterranean coastal areas.

The Mediterranean GDP share of the world's GDP has slightly decreased during the last 20 years, from more than 13.5% in 1990 to 11.5% in 2010. Meanwhile, when compared to the world's population, the share of Mediterranean population has remained constant, at about 7% (Joint EEA/UNEP/MAP report, 2014).

Despite compelling evidence of the importance of services delivered by Mediterranean coastal and marine systems, the Mediterranean ecosystem continues to be degraded (UNEP/MAP Barcelona Convention Initial Integrated Assessment, 2011).

According to some research, “the Mediterranean region currently uses approximately 2.5 times more natural resources and ecological services than their ecosystems can provide... When consumption exceeds local availability, countries either resort to depletion of ecological assets or turn to international trade in order to satisfy their demands... Countries highly dependent on natural resource imports expose their economies to the macroeconomic consequences of price volatility.” (Global Footprint Network, “Physical limits to resource access and utilisation and their economic implications in Mediterranean economies”, 2015).

The state of the Mediterranean coastal and marine environment varies from place to place, but all parts of the Mediterranean are subject to multiple pressures acting simultaneously and in many cases chronically. The State of the Mediterranean Marine and Coastal Environment Report (UNEP/MAP, 2012) highlights the following as the major issues requiring coordinated policy and management responses in the coming years in order to stem the tide of degradation of the Mediterranean ecosystems.

- **Coastal development and sprawl;**
- **Chemical contamination of sediments and biota;**
- **Eutrophication** (mostly of local concern);
- **Marine litter**, concentrated mostly in bays and shallow waters;
- **Over-exploitation** beyond sustainable limits;
- **Sea-floor integrity** is affected mainly by bottom fishing, but also by dredging and offshore installations;
- **Invasive non-indigenous species;**
- The impact of **marine noise** on biota, especially on marine mammals;
- **Changed hydrographic conditions** caused by local disruption of circulation patterns, due to humans-made structures;
- **Marine food webs** affected by fisheries pressures;
- **Unsustainable patterns of consumption and production** are upstream drivers of the above mentioned pressures and impacts on marine and coastal ecosystems.
- **Pressures on biodiversity** related to the cumulative effects of pressures on the Mediterranean coastal and marine environment. Although there is still high diversity in the Mediterranean, some species of reptiles, marine mammals, birds, and fish are reaching dangerously low abundance levels.
- **Climate change impact** is becoming increasingly evident in the Mediterranean. The Mediterranean Region is considered as “high vulnerable to climate change” and it “will suffer multiple stresses and systemic failures due to climate changes” (IPCC Fifth Assessment Report (AR5, 2014)).

2.2. The Response of the MAP/Barcelona Convention

The Barcelona Convention (signed in 1976 and amended in 1995) with its related seven Protocols is the only regional multilateral legal framework for the protection of the Mediterranean marine and coastal environment, setting the obligations “to prevent, abate, combat and to the fullest extent possible eliminate pollution of the Mediterranean Sea Area” and “to protect and enhance the marine environment in that area so as to contribute towards its sustainable development”.

Since the adoption of MAP phase II and the amendments to the Barcelona Convention in 1995 with the view to streamline/incorporate all Rio Principles and extend the geographical scope of the application of the Convention to cover the coastal zone, as well as its fields of action, the UNEP/MAP system has experienced additional important regulatory/legal and policy developments. ~~The legal instruments (Convention, Protocols adopted and/or amended, as well as the Action Plans stemming from them) are listed in Appendix I.~~

The adoption and ongoing implementation of a number of long-term strategic documents addressing pollution control and prevention (SAP MED), marine and coastal biodiversity conservation (SAP BIO), the Strategy to combat pollution from ships, the MSSD as well as a number of Action Plans to facilitate the implementation of the Protocols constitute important strategic milestones to further strengthen the implementation of the Convention and Protocols and guide the preparation of MAP biennial programmes of work.

Of major importance was the adoption in 2008 of a roadmap to apply ecosystem-based approach for the management of human activities in order to achieve Good Environmental Status (GES) including seven steps, among which the vision, goals, ecological objectives, as well as related GES targets have been already implemented.

Another dimension that has emerged in recent year on which the MAP system has been pioneer among the UNEP Regional Seas programmes, is the integration of SCP in its regional strategic framework.

The MAP’s **2010-2015 Strategic Programme of Work** outcomes were structured around six priority themes: Governance, Integrated Coastal Zone Management, Biodiversity, Pollution Prevention and Control, Sustainable Consumption and Production, Climate Change. Each outcome was associated with one to three outputs.

The Strategy presented in this document builds on the MAP/Barcelona Convention instruments described above, and provides the framework for the elaboration and delivery of action during the next six years by the MAP system.

2.3. The International and Mediterranean Policy Context

[The MTS (2016-2021) is a regional response to the major global agendas about sustainable development for the mid-term.]The MTS is consistent with the following strategic documents at regional and global levels in particular:

Mediterranean Strategy for Sustainable Development (MSSD)

The MTS development is fed by the Mediterranean Strategy for Sustainable Development (MSSD) and most relevant Mediterranean-level processes and complementary strategies. The MSSD links to the global Sustainable Development Goals (SDGs), thus ensuring that the Mediterranean region remains a frontrunner in the area of environmental and sustainability governance, and the building on synergies between the MSSD and other regional initiatives.

The MSSD focuses on six thematic areas in line with the global process to achieve Sustainable Development Goals, the first one being Sea and Coast, towards reaching Good Environmental Status of the Marine and Coastal Mediterranean environments, thus encompassing the EcAp-based of Ecological Objectives.

2030 Agenda for Sustainable Development and Sustainable Development Goals (SDGs)

The Agenda is a plan of action for people, planet and prosperity. Through the Agenda, countries have committed to bold and transformative steps to shift the worlds on to sustainable and resilient path. The agenda acknowledges the importance of the regional and sub-regional dimensions, regional economic integration and interconnectivity in sustainable development. Regional and sub-regional frameworks are recognized as facilitating the effective translation of sustainable development policies into concrete action at the national level.

The 17 SDGs balance the three dimension of sustainable development: economic, social and environmental. The immediate reference for the MTS is SDG 14 “conserve and sustainable use the oceans, seas and marine resources for sustainable development”. Other relevant SDGs are SDG 6 (sustainable management of water), 11 (sustainable cities), 12 (sustainable consumption and production), 13 (climate change impacts), 15 (sustainable ecosystems and biodiversity) and 17 (global partnership).

3. THE MID-TERM STRATEGY PRINCIPLES AND MODEL

3.1. The Vision

The vision of the MTS is the following:

“A healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse contributing to sustainable development for the benefit of present and future generations”.

This vision of the Mediterranean is based on the vision approved by COP 16 in 2009 (Decision IG.17/6):

“A healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations”.

And inspired by the vision of Mediterranean Strategy for Sustainable Development (MSSD):

“A prosperous and peaceful Mediterranean Region, in which people enjoy a high quality of life and where sustainable development takes place within the carrying capacity of healthy ecosystems. This is achieved through common objectives, cooperation, solidarity, equity and participatory governance.”

The following elements of the MSSD contributed to the vision of the MTS:

- **Investing in environmental sustainability** to achieve social and economic development.
- **Addressing cross-cutting issues** that lie in the interface between environment and development. Identifying a set of cross-cutting themes to provide scope for an integrated approach when addressing sustainability issues

The improvement of the **quality of the marine environment** remains the priority objective of the Barcelona Convention, confirmed through the Protocols and recently (COP18) with the commitment to achieve **Good Environmental Status (GES)**. The GES constitutes a major step towards the achievement of sustainable development, while the integration of the **Ecosystem Approach (EcAp)** in the management of human activities becomes fundamental for the fulfillment of the vision objectives.

3.2. The MTS concept

The Mid-Term Strategy 2016-2021 has put emphasis on integration and interlinkage of substantive issues, consistency and coherence in an inter-related structure, particularly taking into account the transversal character of ICZM and SCP to all strategic themes of the Mid-Term Strategy.

The MTS has been structured in a way to be: Integrated and coherent across the system; Consistent; Inclusive, Adaptive and flexible, Attentive to regional and national needs, Collaborative, based on

participation and partnerships, Knowledge generating and sharing, Result-based and resource-efficient.

The **concept** of the MTS is reflected in Diagram 1. The **ultimate objectives** are the achievement of Good Environmental Status (GES) of the Mediterranean and the contribution to sustainable development. The **strategic themes** are selected to contribute, in turn, to the objective of GES and sustainable development. In this context, and to ensure effectiveness, the priority strategic themes will be promoted under the overarching theme of **governance**.

The priority **core themes** are:

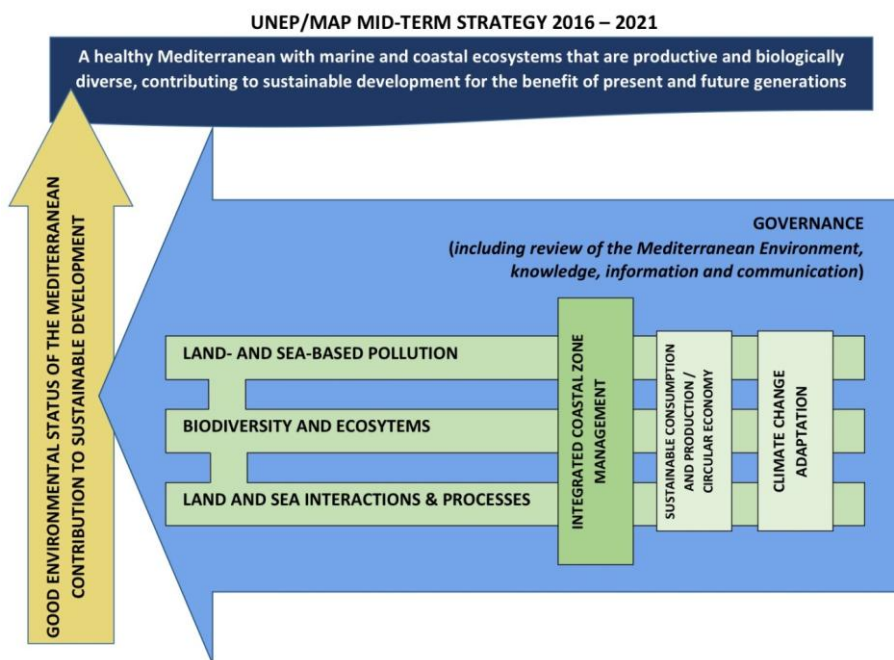
- Land and sea-based pollution,
- Biodiversity and ecosystems,
- Land and sea interactions and processes.

The priority **cross-cutting themes** are:

- Integrated coastal zone management,
- Sustainable consumption and production,
- Climate change adaptation.

These themes reflect legal commitments of the CPs to the Barcelona Convention and their Decisions and contribute to priority strategic issues of the MSSD, UNEP and the UN SDGs.

Diagram 1: The concept of the MTS



The chapter of each theme starts with an explanatory introduction and sets out a number of strategic objectives, strategic outcomes, as well as the expected key outputs. For some of the themes, there are also EcAp-based ecological objectives.

The **strategic outcomes** for each theme are meant to contribute respectively to:

- implementation of existing regional legal framework and decisions;
- development and approval of new plans/programmes/guidelines;
- assistance to CPs for implementation at national level;
- monitoring / evaluation;
- technical assistance/capacity building;
- networking;
- regional cooperation; and,
- dealing with emerging issues.

4. THE OVERARCHING THEME: GOVERNANCE

This theme corresponds to the 6th MSSD objective and partly to SDG 17 and constitutes a prerequisite for the operation and effectiveness of the entire Strategy. It also reflects commitments of the CPs under Decision IG 20/13 adopted by COP 17 in Paris (2012), the Paris Declaration also adopted by COP 17 and Decision IG.21/13 adopted by COP 18 in Istanbul (2013).

In the context of the MAP/Barcelona Convention system, governance follows an efficient decision making process, a results-based management approach and covers broader management issues. It also includes review of the Mediterranean Environment, knowledge, information and communication.

The MTS aims at creating the necessary conditions for the organs and bodies of the MAP/Barcelona Convention system and the Secretariat to efficiently deliver their key mandates as stipulated in Articles 17 and 18 of the Barcelona Convention and the other relevant Articles of the Protocols, as well as to strengthen collaboration with major actors and relevant programmes and initiatives working in and for the Mediterranean region.

The MTS is compliant with the MAP legal system, i.e. the Barcelona Convention, Protocols further complemented through the legally binding Regional Plans, and Action Plans have entered or are about to enter into force. Ensuring an integrated and efficiently coordinated support to the CPs for their implementation and for achieving compliance remains a high priority of the MTS.

The strategic theme “Governance” is based on **five principles**: representativeness, accountability, effectiveness, higher level of participation and transparency.

The **expected accomplishments** are structured around:

- Enhanced capacity of CPs to develop and enforce laws and strengthen institutions to achieve agreed environmental objectives and goals; and comply with related obligations;
- Coherence and synergy of actions on environmental issues between components, respecting their mandates;
- Environmental sustainability increasingly mainstreamed in national and regional development policies and plans.

To achieve these accomplishments, the following **seven Objectives** are set out for governance:

1. To strengthen the regional and national governance mechanisms.
2. To mobilize resources.

3. To strengthen capacity for the implementation of and compliance with the Barcelona Convention, its Protocols and the adopted Strategies and Action Plans.
4. To strengthen synergies, complementarities, and collaboration among international and regional partners and organizations active in the Mediterranean region.
5. To enhance stakeholders' participation and outreach.
6. To deliver knowledge-based assessments of the Mediterranean environment and scenario development for informed decision-making and stakeholder work.
7. To ensure visibility of the MAP/Barcelona Convention, its role and achievements.

These objectives correspond to the MSSD and its orientation to improve governance in support of sustainable development.

They correspond also to the related recommendations of the Outcome Evaluation Study of the PoW 2010-2014.

For the period 2016-2021, **six Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on implementation, compliance, participation/synergies, knowledge of the environment, MAP information and awareness raising. Among the **Outputs**, the expected results and impacts, one can point out the expected ratification of the Barcelona Convention and its Protocols by all CPs, mobilisation of financial and human resources, increase of knowledge on and understanding of the marine environment, focused technical assistance to CPs, interface between science and decision-making, increase of visibility and further awareness raising.

In order to reach the strategic objectives and outputs, the MAP System will continue providing **technical support** for the implementation of measures and commitments. Strengthening **science-policy interface** will be a priority, as well as facilitating the increased participation of stakeholders in environmental decision-making processes. This will be realised through regular update of MAP Partners list, establishing new cooperation with competent institutions and effectively operationalising the existing cooperation agreements. Emphasis is given to capacity building initiatives to further enable human resources in the region on environmental governance.

Improving the visibility of the Mediterranean Commission of Sustainable Development (MCSD) as well as of the MAP system in general is another priority that can contribute to ensuring increased input from the society and multiplying effects of their achievements.

A key output under this strategic theme is the efficiently and effectively functioning compliance mechanisms of the Barcelona Convention. The strategic role of the **Compliance Committee** finds its place in the Mid-Term Strategy to ensure provision of advice and assistance to CPs, further assisting them to comply with their obligations under the Barcelona Convention and its Protocols and to generally facilitate, promote, monitor and secure such compliance.

In the mid-term, UNEP/MAP will be playing in the H2020 governance system an important co-chairing role with regard to two important sub groups on capacity building and on review and monitoring respectively with UfM presidencies and the EEA. This would contribute to a better and more efficient use of resources in the implementation of the 6-year UNEP/MAP strategy in synergy with the H2020 Work Programme 2015-2020.

Table 1 describes the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 1. Strategic Outcomes and Indicative Outputs for Governance

Strategic Outcomes	Indicative Outputs
1.1. CPs and Partners supported in the implementation of the Barcelona Convention, its Protocols, MSSD, Regional Strategies and Action Plans.	1.1.1. Ratification of the Barcelona Convention and its Protocols by all CPs supported.
	1.1.2. Effective legal, policy, and logistic support provided to MAP decision-making process including advisory bodies meetings.
	1.1.3. Coordination at national level facilitated across sectors for the implementation of Barcelona Convention, its Protocols, MSSD, Regional Strategies and Action Plans.
	1.1.4. Funding opportunities for regional and national priorities identified, donors/partners informed and engaged, the Joint Resource Mobilisation Plan updated and implemented, and CPs assisted in mobilising resources.
1.2. CPs and Partners supported in compliance with the Barcelona Convention, its Protocols, Regional Strategies and Action Plans.	1.2.1. Compliance mechanisms effectively functioning, for general and legal advice to CPs and MAP Components.
	1.2.2. Coordinated technical assistance provided to CPs to enhance implementation of the Convention and its Protocols including reporting.
1.3. Strengthened participation, engagement, synergies and complementarities among global and regional institutions.	1.3.1. Regional cooperation activities promoting dialogue and active engagement of global and regional organisations and partners, local authorities, donor agencies, civil society, private sector and other stakeholders in the work of the Barcelona Convention/MAP and within the framework of MCSDD.
	1.3.2. UNEP MAP led regional initiatives on SAP BIO, Marine Litter, SCP, ICZM and MSP (e.g. regional conference, donor meetings). UNEP MAP role in UfM H2020 initiative and its governance bodies strengthened and synergies maximised.
	1.3.3. Participation in relevant existing or new international initiatives and dialogue (e.g. ABNJ, MPAs, Offshore, Sustainable Development) to highlight the Mediterranean regional specificities and increase synergies.
	1.3.4. MSSD implementation set in motion through actions on visibility and capacity building, and the preparation of an MSSD implementation plan, of a project portfolio, of a mid-term review after 5 years and of guidelines to assist countries adapt the Strategy to assist countries adapt the Strategy to their national contexts

1.4. Knowledge and understanding of the state of the Mediterranean Sea and coast enhanced through mandated assessments for informed policy-making.	1.4.1. Periodic assessment of the state of the Mediterranean coasts published. This may include: a) Status Quality Report (2017), b) State of the Environment and Development Report (2019), jointly with H2020 Report, and c) “Med 2050 Report” (2021, to propose scenarios to explore paths for sustainable development in the Mediterranean Basin up to 2050). These assessments address also climate change-related vulnerabilities and risks on the marine and coastal zone in their analysis, as well as knowledge gaps on marine pollution, ecosystem services, coastal degradation, cumulative impacts and impacts of consumption and production.
	1.4.2. MSSD implementation monitored through the MSSD set of indicators and the sustainability dashboard.
	1.4.3. Implementation of IMAP (the EcAp-based integrated monitoring and assessment programme) coordinated, including the preparation, periodic update and publication of GES common indicators fact sheets, and supported by a data information centre to be integrated into Info/MAP platform.
	1.4.4. Interface between science and policy-making strengthened through enhanced cooperation with global and regional scientific institutions, knowledge sharing platforms, dialogues, exchange of good practices and publications.
	1.4.5. Educational programmes, including e-learning platforms and college level degrees, on governance and thematic topics of MAP relevance organised in cooperation with competent institutions.
1.5. MAP knowledge and MAP information system enhanced and accessible for policy-making, increased awareness and understanding	1.5.1. Fully operative and further developed Info/MAP platform, also connected to RACs' information systems, to facilitate access to knowledge for managers and decision-makers, as well as stakeholders and the general public.
	1.5.2. Interoperability between Info/MAP and other relevant regional knowledge platforms achieved, taking also into account SEIS principles.
	1.5.3. Barcelona Convention online Reporting System (BCRS) updated and operational, improved and maintained, and complemented and streamlined with other reporting requirements (e.g. NAPs, Regional Strategies and Actions Plans, and the Marine Litter databank).
1.6. Raised awareness and outreach	1.6.1. Awareness raising initiatives (e.g. Mediterranean Coast Day annual celebrations, Mediterranean Environmental Friendly Cities Award, newsletters, policy briefs, press releases etc.) about the Barcelona Convention and its Protocols, and themes relevant to its mandate developed and carried out.
	1.6.2. The UNEP/MAP communication strategy updated and implemented.

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include:

Black Sea Convention, CIESM, CIHEAM, EEA, FAO/GFCM, FAO/Silva Mediterranean, HELCOM, Horizon 2020 initiative, IMO, IOC UNESCO, IPBES, IPCC, JRC, MAP Partners, MonGoos, MISTRALS (MERMEX, HYMEX, BIODIVMEX), OSPAR, UfM, UN World Ocean Assessment, UNCDB, UNEP Life, UNEP Regional Seas, UNFCCC.

5. CORE THEME 1: LAND AND SEA-BASED POLLUTION

This theme corresponds to the first MSSD objective and partly to SDG 14.

Furthermore, five out of the seven annexed Protocols aim at ensuring the good environmental status of the Mediterranean Sea and prevent pollution due to different types of land and sea-based sources.

The core theme “Land and Sea-Based Pollution” is designed in a manner that will provide effective support to the CPs to effectively implement the five pollution-related Protocols of the Barcelona Convention with a particular focus on legally binding commitments arisen from Articles 5 and 15 of the LBS Protocol. In this respect, the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021) has been incorporated in the UNEP/MAP Mid-Term Strategy and for the first time a comprehensive programme for the implementation of the Offshore Protocol is also presented in an integrated manner.

The core theme “Land and Sea-Based Pollution” aims to:

- Focus on priority basis on the work to support CPs to implement the programmes of measures as envisaged in the Updated National Action Plans/National Action Plans to achieve Good Environmental Status (GES) for the pollution-related Mediterranean ecological objectives based on the ecosystem approach. In this respect, developing and delivering a package of key technical implementation tools/guidelines and provide technical assistance and capacity building for their implementation remains a high priority;
- Support the updating and strengthening of national pollution monitoring programme to monitor good/poor environmental status, emerging pollutants as well as the effectiveness of programmes of measures/NAPs in line with Art. 26 of the Barcelona Convention, Art. 13 of the LBS Protocol and Art. 5 of the Prevention and Emergency Protocol;
- Further develop assessment methodologies to support setting where appropriate national, sub-regional and regional GES targets, environmental targets, assessment criteria, thresholds and baseline values and links and integration with all Mediterranean ecological objectives;
- Enhance access to marine pollution information and data including hot spots and sensitive areas at regional, global and national levels based on SEIS principles;
- Take into account the need to benefit from the important relevant global and regional highlights, thus avoiding overlapping and ensuring where appropriate harmonisation with inter alia:
 - the Minamata, Basel and Stockholm Conventions and the sustainable financial mechanism for chemicals established in the framework of UNEP;
 - Rio+20 and the reports of the Secretary-General of the United Nations to the General Assembly on Oceans and the law of the Sea (2012 and 2011), which identify plastics and nutrient over-enrichment as emerging issues deserving global attention;
 - UNEA decision on Marine Litter, GPML, GP WW and GPSW;
 - IMO conventions (MARPOL, OPRC, Dumping);
 - LRTAP Convention (UNECE) with regards to air pollutant inventories, related tools and modelling to assess impacts on marine environment.

- Establish strong and complementary synergies with the work of other Regional Seas, Agreements and relevant EU bodies for the implementation of the Regional Plans and Strategies in a coordinated manner;
- Strengthen and contribute to the Partnership with H2020, and related programmes/projects and governing institutions.

This theme is designed in an integrated manner with all the other themes of the Mid-Term Strategy. It will be implemented with MED POL and REMPEC leadership in close collaboration with SCP/RAC as per their mandates and in partnership with regional and global partners including NGOs. Efforts are ongoing to ensure the mobilisation of the required external resources to complement the MTF funding as appropriate (GEF, EU, H2020, UNEP/GPA, IMO, private sector).

The MTS 2016-2021 sets out the following **five Ecological Objectives** for this core theme:

1. Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms, and oxygen deficiency in bottom waters.
2. Contaminants cause no significant impact on coastal and marine ecosystems and human health.
3. Marine and coastal litter does not adversely affect coastal and marine environments.
4. Noise from human activities causes no significant impact on marine and coastal ecosystems.
5. New and emerging land-based pollution related problems are identified and tackled, as appropriate

The above ecological objectives are linked to the following strategic objectives of pollution related Protocols of the Barcelona Convention:

1. To eliminate to the extent possible, prevent, reduce and control selected/regulated pollutant inputs, oil discharges and spills.
2. To prevent, reduce and control marine litter generation and its impact on the coastal and marine environment.

They are also linked to the following objectives of the cross cutting themes addressing pollution related aspects:

1. To promote planning mechanisms that will contribute to reducing the generation of pollution in coastal zones (ICZM).
2. To ensure sustainable use of natural resources, in particular water, in order to prevent their pollution and degradation.(ICZM)
3. To promote SCP in key economic sectors and lifestyles which are upstream drivers of chemicals and marine litter
4. To strengthen technical capacities of businesses, entrepreneurs, financing agents, and civil society organisations to implement SCP solutions reducing toxic chemicals and marine litter.

For the period 2016-2021, **seven Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on implementation, new action plans, marine pollution monitoring, capacity building, regional cooperation, and identification of emerging issues. Among the **Outputs**, the expected results and impacts, one can point out the targeted measures, common standards and criteria per priority pollutant, regional programmes, guidelines, adopted NAPs, inventories of pollutant loads, marine pollution assessment tools, training programmes, networking, awareness raising and policy briefs.

Table 2 gives the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 2. Strategic Outcomes and Indicative Outputs for Land and Sea-Based Pollution

Strategic Outcomes	Indicative Outputs
2.1.Strengthening regional implementation of the obligations under the Barcelona Convention and 4 pollution -related Protocols, and of programmes of measures in existing relevant Regional Strategies and Action Plans	2.1.1. Targeted measures of the regional plans/strategies facilitated and implemented
2.2. Development of new action plans, programmes and measures, common standards and criteria, guidelines	<p>2.2.1. Common standards and criteria provided for in the Protocols and the Regional Plans developed or updated for key priority substances or sectors.</p> <p>2.2.2. Regional programmes of measures identified and negotiated for pollutants/ categories (sectors) showing increasing trends, including the revision of existing regional plans and areas of consumption and production with the view to achieve the GES targets on pollution and litter.</p> <p>2.2.3. Guidelines and decision-support tools developed and updated for key substances and relevant sectors taking into account best available techniques and practices and other tools and practices.</p>
2.3. Strengthening and implementation of marine pollution prevention and control legislation and policies at national level, including through enforcement.	<p>2.3.1. Adopted NAPs (Art. 15, LBS Protocol) implemented and targeted outputs timely delivered. Enhanced financial sustainability of NAP implementation. Support to identification and development and where appropriate implementation of projects for the implementation of NAPs provided on the basis of well-defined priority selection criteria.</p> <p>2.3.2. NAPs developed to implement the Regional Strategy for Prevention and Response to Marine Pollution from Ships.</p> <p>2.3.3. National policy and regulatory pollution prevention and control frameworks, including enforcement, strengthened, updated and integrated into national and sectorial processes (e.g. policy development including policies on the use of economic instruments).</p> <p>2.3.4. SCP Regional Action Plan (pollution-related activities) mainstreamed into and implemented through NAPs and relevant national processes, such as SCP National Action Plans and NSSDs.</p>
2.4.Marine Pollution Monitoring and assessment	2.4.1. National pollution and litter monitoring programs updated to include the relevant pollution and litter EcAp indicators and implemented through regular quality assurance and control programmes at national and regional levels and data reporting.

Strategic Outcomes	Indicative Outputs
	<p>2.4.2. Inventories of pollutant loads (NBB, PRTR from land-based sources, and from offshore and shipping) regularly reported and updated at national, sub-regional and regional levels, and supported by quality assurance and control systems</p> <p>2.4.3. Marine pollution assessment tools (in depth thematic assessment, maps and indicator factsheets) developed and updated.</p>
<p>2.5.Enhanced capacity at regional, sub-regional and national levels including technical assistance and capacity building</p>	<p>2.5.1. Training programmes and workshops in areas such as pollution monitoring, pollutant inventories, policy implementation, common technical guidelines, authorisation and inspections bodies and compliance with national legislation.</p> <p>2.5.2. Pilot projects implemented on marine litter, POPs, mercury, and illicit discharges.</p> <p>2.5.3. Marine pollution prevention and control measures and assessments integrated in ICZM Protocol implementation projects, CAMPs and related Strategic Environment Impact Assessments.</p> <p>2.5.4. Training and awareness-raising programmes on SCP solutions for alternatives to POPs and toxic chemicals and reduction of upstream sources of marine litter delivered to businesses, entrepreneurs, financial institutions and civil society.</p>
<p>2.6.Enhanced cooperation at regional, sub-regional and national levels to prevent and control marine pollution</p>	<p>2.6.1. Agreements, synergies and exchange of best practices with key relevant global and regional partners and stakeholders with a particular focus on marine litter.</p> <p>2.6.2. Networks and initiatives of businesses, entrepreneurs and civil society providing SCP solutions contributing to alternatives to POPs and toxic chemicals and to reduce upstream sources of marine litter supported and coordinated.</p>
<p>2.7. Identifying and tackling with new and emerging issues, as appropriate</p>	<p>2.7.1. Reviews/policy briefs developed and submitted to CPs on emerging pollutants, ocean acidification, and linkages with relevant global processes as well as climate change.</p>

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include: Black Sea, OSPAR, HELCOM Convention Secretariats, Dumping London Protocol, EEA, EMSA, EU MSFD CIU, IMO, IOC, IOPC Fund,

ITOPF, OGP, Stockholm and Basel Convention, SWEEP-NET, UfM&H2020, UNEP GPSW, UNEP GPWW, UNEP Regional Seas Programme, UNEP/GPA GPML, UNIDO, WB.

1. CORE THEME 2: BIODIVERSITY AND ECOSYSTEMS

This theme corresponds to the first MSSD objective and to SDG 14. It also contributes to the implementation of the Convention on Biological Diversity and the promotion of the Aichi targets.

The overall mission under this theme is to provide assistance to the CPs in meeting their obligations under Articles 4 and 10 of the Barcelona Convention, and under the “Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean” (SPA/BD Protocol), and implementing the “Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region” (SAP BIO), adopted by the CPs in 2003, as well as the Mediterranean Strategy on Sustainable Development (MSSD) (Decision IG.19/5).

With the view to guide and facilitate the implementation of the SPA and Biodiversity Protocol and of SAP BIO, a number of regional strategies have been developed and adopted, aiming at the protection, preservation and sustainable management of marine and coastal areas of particular natural and cultural value and threatened and endangered species of flora and fauna. Therefore, the MAP 2016-2021 Mid-Term Strategy “Biodiversity and Ecosystems” core theme will mainly focus on supporting their implementation respectively:

- The “Regional Working Programme for the Coastal and Marine Protected Areas in the Mediterranean Sea including the High Sea”, and the emanating “Roadmap towards a comprehensive, ecologically representative, effectively connected and efficiently managed network of Mediterranean Marine Protected Areas (MPAs) by 2020” in close collaboration with competent regional and national organisations, as well as NGOs and all other relevant stakeholders;
- Eight Action Plans for the conservation and/or management of endangered or threatened species and key habitats: Mediterranean Monk Seal, Marine Turtles, Cetaceans, Marine Vegetation, Marine and Coastal Birds, Cartilaginous Fishes (Chondrichthyans), Coralligenous and other Calcareous Bio-concretions, and Dark Habitats;
- A Regional Strategy for the Conservation of Mediterranean Monk Seal;
- An Action Plan concerning Species Introductions and Invasive Species in the Mediterranean Sea; and,
- The Mediterranean Strategy on Ships’ Ballast Water Management Strategy and its Action Plan.

Furthermore, support will be provided to CPs at national level to:

- Develop and implement, as a high priority, in a coordinated manner and where appropriate jointly, their national monitoring programme to assess progress towards GES with regards to MAP EcAp-based ecological objectives related to biodiversity, non-indigenous species and food webs closely interlinked with the relevant work under the Regional Action Plans for the conservation of Mediterranean threatened and endangered species and key habitats adopted in the framework of the Barcelona Convention’s SPA/BD Protocol; and,
- Implement the “Strategic Action Programme for the Conservation of Biological Biodiversity in the Mediterranean Region” (SAP BIO) regional and national Priority Actions for the period 2014-2020, as well as the SAP BIO related National Action Plans (NAPs).

In order to improve synergy and avoid overlapping and duplication of activities, collaboration will be enhanced with relevant intergovernmental and non-governmental organisations and other regional, national and local stakeholders, as well as the MAP Components, as relevant and necessary. Many of the regional partners collaborating in marine conservation issues rely very much on technical tools, strategic documents and other outputs produced within the Barcelona Convention context.

The MTS 2016-2021 sets out the following **six Ecological Objectives** for this core theme:

1. Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic, and climatic conditions.
2. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem.
3. Populations of selected commercially exploited fish and shellfish are within biologically safe limits, exhibiting a population age and size distribution that is indicative of a healthy stock.
4. Alterations to components of marine food webs caused by resource extraction or human induced environmental changes do not have long-term adverse effects on food web dynamics and related viability.
5. Sea-floor integrity is maintained, especially in priority benthic habitats.
6. New and emerging biodiversity and ecosystems related problems are identified and tackled, as appropriate

The above ecological objectives are linked to the following strategic objectives of the SPA and Biodiversity Protocol of the Barcelona Convention:

1. To protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value notably by the establishment of specially protected areas.
2. To protect, preserve and manage threatened or endangered species of flora and fauna.

They are also linked to the following strategic objectives of the cross cutting themes:

1. To promote planning and management mechanisms ensuring that economic, social and cultural development is in harmony with natural environment and landscape (ICZM).
2. To reduce anthropogenic pressure on coastal and marine ecosystems in order to prevent or reduce their degradation and to maintain their contribution to climate change adaptation (ICZM and CC)
3. To provide innovative services and products contributing to the conservation and sustainable management of biodiversity and ecosystems (SCP)
4. To strengthen technical capacities of businesses, entrepreneurs, financing agents, and civil society organisations to implement SCP solutions contributing to the conservation of biodiversity and ecosystems (SCP)

For the period 2016-2021, **seven Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on regional implementation, new action plans and programmes, strengthening national implementation, monitoring/assessment, capacity building, enhanced regional cooperation, and identification of emerging issues. Among the **Outputs**, the expected results and impacts, one can point out the roadmap for a coherent network of well managed MPAs, management measures, Regional Action Plans, review of Ships' Ballast Water Management Plan, guidelines, use of Marine Spatial Planning, integration in CAMPs and ICZM actions, inventories, and networking.

Table 3 gives the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 3. Strategic Outcomes and Indicative Outputs for Biodiversity and Ecosystems

Strategic Outcomes	Indicative outputs
3.1. Strengthening regional implementation of the obligations under the Barcelona Convention, and its relevant Protocols and other instruments.	3.1.1. A comprehensive coherent network of well managed MPAs, including SPAMIs, to achieve Aichi Target 11 in the Mediterranean set up and implemented.
	3.1.2. Most relevant area--based management measures are identified, through global and regional tools (SPAMIs, FRAs, PSSAs, etc.), for the conservation of ABNJ, taking into consideration Mediterranean EBSAs, in cooperation with relevant global and regional organisations.
	3.1.3. Regional Action Plans for the conservation of Mediterranean endangered and threatened species and key habitats, on Species introductions and Invasive Species are implemented and updated as needed, in line with relevant EcAp targets.
	3.1.4. Mediterranean Strategy and Action Plan on Ships' Ballast Water Management reviewed in line with the Action Plan on Species Introductions and Invasive Species and relevant EcAp targets, and implemented.
3.2. Development of new action plans, programmes and measures, common standards and criteria, guidelines for the conservation of Coastal and Marine biodiversity and ecosystems.	3.2.1. Guidelines and other tools for the conservation of endangered and threatened Mediterranean coastal and marine species and key habitats, and for non-indigenous species control and prevention developed, updated in line with EcAp Targets and disseminated.
	3.2.2. Guidelines and other tools for the development and management of marine and coastal protected areas developed/updated and disseminated.
	3.2.3. Marine Spatial Planning (MSP) applied in selected EBSAs at a pilot level linking coastal and open sea areas to major pressures.
3.3. Strengthening national implementation of biodiversity conservation policies, strategies and legislation measures.	3.3.1. NAPs for the conservation of Mediterranean endangered and threatened species and key habitats and on Species Introductions and Invasive Species developed/updated, in line with EcAp, Aichi Targets and the Nagoya Protocol.
	3.3.2. Measures developed and agreed at national levels to strengthen the protection and the management of relevant marine and coastal sites, especially those containing under-represented habitats and species (including deep-sea habitats), in accordance with the Aichi Target 11 in the Mediterranean and the relevant EcAp targets

Strategic Outcomes	Indicative outputs
	3.3.3. Biodiversity and ecosystem protection actions integrated in CAMPs, other ICZM Protocol implementation projects and Strategic Environment Impact Assessments.
3.4. Monitoring, inventory and assessment of biodiversity with focus on endangered and threatened species, non-indigenous species and key habitats.	3.4.1. Monitoring programmes for key species and habitats as well as invasive species, as provided for in the MAP/EcAp Integrated Monitoring and Assessment Programme are developed and implemented including monitoring activities of the effectiveness of marine and coastal protected areas, with a particular focus on SPAMIs supported.
	3.4.2. Biodiversity conservation assessment tools (in- depth thematic assessment, maps and indicator fact sheets) developed and updated to show trends at national, sub regional and regional levels, and measure the effectiveness of the SAP BIO NAPs and Regional Action Plans implementation
	3.4.3. Endangered and threatened species, habitats and species communities potentially more affected by climate change, and climate change effects on non-indigenous species distribution and their evolution trends, included in monitoring programmes.
	3.4.4. Inventory of coastal and marine habitats vulnerable to climate change and assessment of sensitivity and adaptive capacities of marine ecosystems to changes in sea conditions (including acidification) as well as of the role of services they provide to climate resilience developed.
3.5. Technical assistance and capacity building at regional, sub-regional and national levels to strengthen policy implementation and compliance with biodiversity -related national legislation.	3.5.1. Capacity-building programmes related to the development and management of marine and coastal protected areas, to the conservation and monitoring of endangered and threatened Mediterranean coastal and marine species and key habitats, and to monitoring issues dealing with climate change and biodiversity developed and implemented, including pilots to support efforts aimed at MPA/SPAMI establishment and implementation.
	3.5.2. EcAp biodiversity and non-indigenous species data set established and common indicators monitored in selected Marine Protected Areas (MPAs) and (SPAMIs) at pilot level.

Strategic Outcomes	Indicative outputs
	3.5.3. Training and awareness-raising programmes on SCP solutions contributing to the conservation of the ecosystems and biodiversity delivered to businesses, entrepreneurs, financial institutions and civil society.
3.6. Enhanced cooperation at regional, sub-regional and national levels to protect and conserve biodiversity and ecosystems	<p>3.6.1. Joint strategies on Biodiversity and Ecosystems conservation developed, by taking into account NAPs in cooperation with relevant partner organisations at global and regional levels.</p> <p>3.6.2. Joint working programmes on Biodiversity and Ecosystems conservation with relevant partner organisations developed and implemented.</p> <p>3.6.3. Networks and initiatives of businesses, entrepreneurs and civil society providing SCP solutions contributing to biodiversity and ecosystems conservation coordinated through adequate mechanisms.</p>
3.7. Identifying and tackling with new and emerging issues, as appropriate	3.7.1. Position papers on ABNJ conservation, and other relevant Coastal and marine biodiversity conservation issues assessed and prepared for consideration by the CPs.

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include:

CBD , FAO, CMS, IMO , UNESCO, CITES, AEW, ICCAT, Ramsar Convention, WCMC, EU, UfM, ACCOBAMS, GFCM, Bern Convention, OSPAR, HELCOM, EEA, MedWet , Tour du Valat, IUCN, WWF, BirdLife, MedPAN, MEDASSET, MedMar Avis, Global Ocean Forum , ICES, CIESM, Conservatoire du Littoral, The Economics of Ecosystems and Biodiversity (TEEB), Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), Partners” and “Associates” to the Action Plans for the conservation of threatened and endangered species and key habitats, Research institutes and universities

2. CORE THEME 3: LAND AND SEA INTERACTION AND PROCESSES

This theme provides for the support necessary for the effective promotion of objectives under several other strategic themes (e.g. ICZM, biodiversity/ecosystems, and climate change adaptation). Article 2.e. of the ICZM Protocol states that “ *‘Coastal zone’ means the geomorphologic area either side of the seashore in which the interaction between the marine and land parts occurs in the form of complex ecological and resource systems made up of biotic and abiotic components coexisting and interacting with human communities and relevant socioeconomic activities.*”

Coastal areas are complex natural systems with important interactions between their land and sea parts. Furthermore, the coastal marine zones represent the major interface between humans and the marine environment. Coastal ecosystems (terrestrial and marine ones) are those most heavily impacted by human activity.

This core theme aims at supporting a better understanding and taking into account by the decision makers and planners of these natural processes such as wave action, the risks of flood, erosion, sea level rise or even tsunami and the buffer role of dunes with the view to enhance planning and managing of coastal areas. Furthermore, it aims at supporting holistic landscape and seascape

approach that incorporates all processes affecting the flux of materials, their transport, delivery, the ultimate impact on coastal ecosystems as well as the potential impacts of climate change on the vulnerable coastal fringe.

Such interactions will be taken into consideration in the context of Guidelines for Environmental Impact Assessments and Strategic Environmental Assessments and other methodological tools provided for in the MTS and in particular in new generation of CAMPs.

The MTS 2016-2021 sets out the following **three Ecological Objectives** for this core theme:

1. Alteration of hydrographic conditions does not adversely affect coastal and marine ecosystems.
2. The natural dynamics of coastal areas are maintained and coastal ecosystems and landscapes are preserved.
3. New and emerging land and sea interactions and processes related problems are identified and tackled, as appropriate.

The above ecological objectives are linked to the following strategic objectives of ICZM Protocol of the Barcelona Convention:

1. To reduce anthropogenic pressure on coastal and marine areas in order to prevent or reduce their degradation.
2. To ensure preservation of the integrity of coastal ecosystems, landscapes and geomorphology.
3. To adopt measures to reduce the negative impact of natural hazards and in particular of climate change.
4. To ensure that activities on the land and the sea part of the coastal zones are compatible and mutually supportive.

They are also linked to the following objectives of the cross cutting themes:

1. To facilitate sustainable development of coastal and marine areas by ensuring planning mechanisms that address both natural processes and anthropogenic pressure impacting on them. (ICZM).
2. To promote governance mechanisms that ensure coherence between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone. (ICZM)
3. To reduce the pressure of human activities in coastal and marine areas through the implementation of SCP tools (SCP)
To strengthen the resilience of the Mediterranean natural and socioeconomic systems to climate change by promoting integrated adaptation approaches and better understanding of impacts. (CC)

For the period 2016-2021, **seven Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on regional implementation, new action plans and programmes, strengthening national implementation, monitoring/assessment, capacity building, enhanced regional cooperation, and identification of emerging issues. Among the **Outputs**, the expected results and impacts, one can point out the reduction of pressures on marine and coastal areas, methodological framework for ICZM (land and sea parts), mapping of pressures and risks of erosion, fact sheets, climate change adaptation of coastal areas, guidelines, capacity building, inventories, policy briefs and networking.

Table 4 gives the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 4. Strategic Outcomes and Indicative Outputs for Land and Sea Interaction and Processes

Strategic Outcomes	Indicative Outputs
4.1. Strengthening regional implementation of the obligations under the Barcelona Convention and its Protocols, and of programmes of measures in existing Regional Strategies and Action Plans	4.1.1. CPs assisted in implementing specific tools to reduce pressures on coastal and marine areas (coastal setback, land policy measures, zoning, etc.).
4.2. Development of new action plans, programmes and measures, common standards and criteria, guidelines	4.2.1. Tools and guidelines for environmental assessments developed and implemented (e.g. EIA, cumulative assessments, SEA)
4.3. Strengthening national implementation	4.3.1. New generation of CAMPs prepared to promote land-sea integration, also addressing trans-boundary aspects, as appropriate.
4.4. Monitoring and assessment	4.4.1. Mapping of interaction mechanisms on coastal and marine environment at regional and local levels developed.
	4.4.2. National coast and hydrography monitoring programmes developed and updated to include the relevant EcAp indicators, and interactions and processes.
	4.4.3. Assessment of the risks of sea level rise and coastal erosion, and their impacts on coastal environment and communities developed.
4.5. Enhanced capacity at regional, sub-regional and national levels including technical assistance and capacity building	4.5.1. Capacity building for the application of tools for assessing interactions and integrating them in planning/management of coastal and marine environment implemented.
4.6. Enhanced cooperation at regional, sub-regional and national levels	4.6.1. Networks of CAMPs and other ICZM Protocol implementation projects to promote the exchange of data, experience and good practices established.
4.7. Identifying and tackling with new and emerging issues, as appropriate	4.7.1. Additional stresses on water resources due to climate change assessed.
	4.7.2. Reviews/policy briefs developed and submitted to CPs, <i>inter alia</i> impacts from possible tsunami cases explored.

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include:

National authorities and institutions, Local authorities in coastal and marine areas, Scientific and research institutions: coastal observatories, oceanographic institutes, hydrographic institutes, water agencies, International institutions and organisations: UNESCO, FAO, GFCM, EU, EEA, UNEP/GEF, UFM, IUCN, MedPAN, International conventions: CBD, Habitat, UNFCC, Ramsar, UNEP/Regional

Seas Programme, Sub-regional initiatives: EUSAIR, RAMOGE, NGOs: WWF MedPO, MIO-ECSDE, GWP, UNEP/MAP Components

1. CROSS-CUTTING THEME 1: INTEGRATED COASTAL ZONE MANAGEMENT (ICZM)

This theme corresponds to the first and partly third MSSD objectives and it is related to SDG 9, 11, 14 and 15. It is meant to assist CPs in their efforts to implement the ICZM Protocol and the respective Action Plan approved by COP16.

Integrated Coastal Zone Management (ICZM) is a transversal policy, with strategic options, plans and management measures, which can integrate and reflect on the same coastal geographic unit (with its terrestrial and marine parts) all thematic policies and horizontal dimensions, encompassing development measures, environmental protection, SCP, adaptation to climate change etc. ICZM, as expressed in the – worldwide unique – respective Mediterranean Protocol, is a framework-policy-instrument to promote and implement major objectives of the Barcelona Convention as amended in 1995, in an integrated manner. The different nature of this cross-cutting theme and its broader role is reflected in the way it is shown in *Diagramme 1*.

Integrated Coastal Zone Management (ICZM) is for some time now considered as the most appropriate approach leading to sustainable coastal development. The ICZM Protocol entered into force and allows Mediterranean countries to better manage their coastal zones and to reconcile the many different interests by applying this “...dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts.”

The process of integrated coastal management involves policy and plan formulation (including marine spatial planning), implementation, monitoring and evaluation actions. All these activities are included in the Action Plan for the implementation of the ICZM Protocol in 2012-2019.

The CPs, at COP 18 recommended to strengthen MAP activities in the field of Marine Spatial Planning (MSP) in order to contribute to GES, investigate in more details connections between land and sea areas and propose coherent and sustainable land and sea-use planning frameworks relating with key economic sectors and activities that may affect the coastal and marine resources; this will also support the implementation of the recently approved MSP Directive of European Union.

This theme addresses also a major challenge, related to the governance of ICZM: bringing together decision-makers, planners, scientists of different backgrounds and stakeholders, building trust and fostering partnerships and synergies, ensuring proper participatory and decision-making procedures and thus achieving consensus are key actions and prerequisites of effective implementation.

Integrating ICZM as a transversal approach for the Mid-Term Strategy enables MAP to strengthen its relationship and cooperation with other international and regional organisations such as FAO, UNCTAD, UNEP/DTIE, UNESCO, UNIDO, UNWTO, ESCWA, ILO, GFCM, GWP Med, IUCN, WWF Med, and international financial agents like the EBRD, EIB, IFC and WB, also promoting ICZM from diverse perspectives complementing MAP’s mandate. In that line, ICZM is included as key theme of collaboration between UNEP/MAP and UfM in the implementation of their Memorandum of Understanding.

The MTS 2016-2021 sets out the following **three strategic** objectives for this cross-cutting theme:

1. The sustainable development of coastal zones is facilitated by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development.
2. The sustainable use of natural resources is ensured, particularly with regard to water use.

3. The coherence is achieved between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone.
4. To promote planning mechanisms that will contribute to reducing the generation of pollution in coastal zones.
5. To ensure sustainable use of natural resources, in particular water, in order to prevent their pollution and degradation.
6. To promote planning and management mechanisms ensuring that economic, social and cultural development is in harmony with natural environment and landscape
7. To reduce anthropogenic pressure on coastal and marine ecosystems in order to prevent or reduce their degradation and to maintain their contribution to climate change adaptation
8. To facilitate sustainable development of coastal and marine areas by ensuring planning mechanisms that address both natural processes and anthropogenic pressure impacting on them.
9. To promote governance mechanisms that ensure coherence between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone.

For the period 2016-2021, **six Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on regional implementation, new action plans and programmes, strengthening national implementation, monitoring/assessment, capacity building, and enhanced regional cooperation. Among the **Outputs**, the expected results and impacts, one can point out the MAP regional strategies, action plan for the implementation of ICZM, methodological tools and guidelines, national ICZM strategies, gap analysis, fact sheets, training programmes, and coordination.

Table 5 gives the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 5. Strategic Outcomes and Indicative Outputs for Integrated Coastal Zone Management

Strategic Outcomes	Indicative Outputs
5.1.Strengthening regional implementation of the obligations under the Barcelona Convention and its Protocols, and of programmes of measures in existing Regional Strategies and Action Plans	5.1.1. MAP regional strategies SAP BIO, SAP MED, Offshore Action Plan and Strategy to combat pollution from ships implemented in an integrated manner, as provided for in ICZM Protocol to enhance the sustainable use of marine and coastal resources.
5.2. Development of new action plans, programmes and measures, common standards and criteria, guidelines	5.2.1. Action Plan for the implementation of the ICZM Protocol implemented and updated after 2019.
	5.2.2. Methodological framework for integrated spatial planning of the marine and terrestrial areas prepared and adopted.
	5.2.3. Climate Change-related vulnerabilities and risks addressed in the development and implementation of biodiversity -related regional and national strategies, action plans and measures.
5.3.Strengthening national implementation	5.3.1. National ICZM Strategies prepared including streamlining pollution, biodiversity, adaptation to climate change and SCP, as well as sustainable cities.
	5.3.2. Countries assisted in carrying out gap analysis on national legal and institutional frameworks for ICZM in order to facilitate the transposition of the ICZM Protocol provisions into national legislations.
	5.3.3. SCP Regional Action Plan activities mainstreamed into and implemented through ICZM national strategies, as well as CAMPs and other ICZM Protocol implementation projects.
	5.3.4.Climate change adaptation priority fields of action mainstreamed into and implemented through ICZM national strategies, as well as CAMPs and other ICZM Protocol implementation projects.
5.4. Monitoring and assessment	5.4.1. Fact sheets -based on ICZM indicators-developed to evaluate the effectiveness of coastal and marine resources management measures.
5.5. Enhanced capacity at regional, sub-regional and national levels including technical assistance and capacity building	5.5.1. MedOpen Training Programme on ICZM regularly updated and implemented.
5.6. Enhanced cooperation at regional, sub-regional and national levels	5.6.1. ICZM coordination enhanced through: (i) Mediterranean ICZM Platform; (ii) national ICZM coordination bodies.

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include:

National authorities and institutions, Local authorities in coastal areas , Scientific and research institutions: coastal observatories, oceanographic institutes, economic institutes, urban and planning institutes, chambers of commerce , International institutions and organisations: UNESCO, UNEP/DTIE, UNWTO, UNDP, FAO, GFCM, EU, EEA, UNEP/GEF, UfM, IUCN, MedPAN, International conventions: CBD, Habitat, UNFCCC, Ramsar, HELCOM, OSPAR, Black Sea Commission, Sub-regional initiatives: EUSAIR, RAMOGE, NGOs and networks: WWF MedPO, MIO-ECSD, GWP-Med, CPRM, MedCities, UNEP/MAP Components

2. CROSS-CUTTING THEME 2: SUSTAINABLE CONSUMPTION AND PRODUCTION (SCP)

This theme corresponds to the 5th MSSD objective and to SDG 12.

Sustainable Consumption and Production (SCP) is about the combined implementation of diverse actions, involving policy makers, businesses, retailers, academia and civil society in order to redesign in an innovative manner the way in which goods and services are produced and consumed to drive the revitalisation of industrial and socio-economic development towards non-pollutant, no-waste, low-carbon, resource efficient, socially inclusive, green and circular economies.

Main pollution and environmental challenges associated to their unsustainable patterns of consumption and production are identified as priorities for action in several Protocols of the Barcelona Convention (e.g. LBS, ICZM and HW Protocols). More specifically, in the Barcelona Convention/MAP context, SCP is highlighted in article 4 of the amended Convention, in article 5.4 and Annex IV of the LBS Protocol, in article 5.2 of the Hazardous Wastes Protocol and in article 9 of the ICZM Protocol.

Based on the importance of SCP as a necessary strategic approach for the implementation of the Convention and the Protocols, the CPs have requested MAP to prepare a specific SCP Regional Action Plan. This Regional Action Plan will define common objectives and actions to implement SCP in the Mediterranean countries. It will also guide the definition of specific activities to provide technical support and capacity building to the countries on SCP and will establish the needed policy and regulatory mechanisms enabling a broad shift to SCP in the region, in order to reduce pressure on the marine and coastal environment.

The circular economy concept is a response to the aspiration for sustainable development, given the growing pressure of consumption and production on the world's resources and environment. So far the economy has operated on the basis of a "take-make-dispose" model – a linear model where every product is bound to reach its "end of life". A transition to circular economy means changing focus towards reusing, repairing, refurbishing and recycling materials and products. The so far "wastes" can become "resources". Shifting to circular economy requires the involvement of many different groups of people and creates new markets based on sustainable consumption and production.

SCP is a gate through which MAP will draw the interest and engagement for cooperation from the private sector, including local small, medium and big enterprises, multinationals, entrepreneurs, manufacturers, producers, retailers and sellers, for they are responsible of the production processes and bringing to market products and services, and hence are in a unique position to advance SCP in the region.

Integrating SCP as a transversal approach for the Mid-Term Strategy enables MAP to strengthen its relationship and cooperation with other international and regional organisations such as FAO, UNCTAD, UNEP/DTIE, UNESCO, UNIDO, UNWTO, ESCWA, ILO, GFCM, GWP Med, IUCN, WWF Med, and international financial agents like the EBRD, EIB, IFC and WB, also promoting SCP from diverse perspectives complementing MAP's mandate. In that line, SCP is included as key theme of collaboration between UNEP/MAP and UfM in the implementation of their Memorandum of Understanding. Finally, at its Ministerial Meeting on Environment and Climate Change (Athens, May

2014), the UfM affirmed its commitment to accelerate the shift towards sustainable consumption and production patterns, emphasising its strong support to the development of the SCP Action Plan for the Mediterranean in the framework of the Barcelona Convention.

The MTS 2016-2021 sets out the following strategic objectives or this cross-cutting theme:

1. A prosperous Mediterranean region is established, with non-pollutant, circular, socially inclusive economies based on sustainable consumption and production patterns, securing the sustainable management of natural resources and energy, ensuring the well-being of societies and contributing to clean environment and healthy ecosystems that provide goods and services for present and future generations.
2. Support the effective implementation of the SCP Action Plan and its roadmap
3. Strengthen technical capacities of businesses, entrepreneurs, financing agents, and civil society organisations to implement SCP solutions.
4. To promote SCP in key economic sectors and lifestyles which are upstream drivers of chemicals and marine litter
5. To strengthen technical capacities of businesses, entrepreneurs, financing agents, and civil society organisations to implement SCP solutions reducing toxic chemicals and marine litter.
6. To provide innovative services and products contributing to the conservation and sustainable management of biodiversity and ecosystems
7. To strengthen technical capacities of businesses, entrepreneurs, financing agents, and civil society organisations to implement SCP solutions contributing to the conservation of biodiversity and ecosystems
8. To reduce the pressure of human activities in coastal and marine areas through the implementation of SCP tools

For the period 2016-2021, **four Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on new action plans and programmes, strengthening national implementation, monitoring/assessment, capacity building, and enhanced cooperation to prevent marine pollution. Among the **Outputs**, the expected results and impacts, one can point out related methodological tools, action plans, SCP indicators, training programmes, networking, and involvement of stakeholders.

Table 6 gives the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 6. Strategic Outcomes and Indicative Outputs for Sustainable Consumption and Production

Strategic Outcomes <i>Outcome Indicators (and indicative Targets)</i>	Indicative Outputs
6.1. Development of new action plans, programmes and measures, common standards and criteria, guidelines and implementation of current ones.	6.1.1. Methodological tools for SCP mainstreaming in CC adaptation and mitigation regional strategies and frameworks developed.
	6.1.2. Actions of the SCP Action Plan directly contributing to address climate change in the marine and coastal areas of the Mediterranean implemented.
	6.1.3. Methodological tools for SCP mainstreaming in the priority areas of consumption and production of the Regional Action Plan on SCP - tourism, food, housing and goods manufacturing implemented and new ones developed for other sectors.
	6.1.4. Actions of the SCP Regional Action Plan directly contributing to the conservation of biodiversity and ecosystems identified and implemented.
6.2. Monitoring and assessment.	6.2.1. SCP Action Plan indicators identified, selected and factsheets developed by a Technical Working Group in line with the MSSD.
6.3. Enhanced capacity at regional, sub-regional and national levels including technical assistance and capacity building	6.3.1. Training and support programme for green entrepreneurs and civil society as SCP drivers.
6.4. Enhanced cooperation at regional, sub-regional and national levels to prevent and control marine pollution	6.4.1. Networks and initiatives of businesses, entrepreneurs and civil society providing SCP solutions established, including a Mediterranean Green Impact Investing Network.
	6.4.2. Informal task force of SCP AP facilitators with the mission of engaging key stakeholders and support the implementation of the AP fully operational.
	6.4.3. A Mediterranean SCP Hub for knowledge exchange and networking fully operative and performing as connector and lever for new partnerships and initiatives providing SCP solutions.

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include:

Ministries (planning, environment, industry, trade, economy, education, labour, social affairs), National, regional and local administrations Small, medium and big enterprises, multinationals, entrepreneurs, manufacturers, producers, retailers and sellers, Fairtrade organizations, Civil Society, including unions, NGOs, citizens-led initiatives, social economy associations, consumers groups, Schools, Academia, business schools, innovation HUBs, business incubators and Research Institutions , Financial institutions, Impact investors, business angels , Regional and international Organizations: UNIDO, WBCSD, UfM, UNEP/DTIE, UNCTAD, ESCWA, IFOAM, IFAD, FAO, WWF, CIHEAM , African Development Bank , Islamic Development Bank, European Investment Bank, UNESCO ,UNCTAD , Fundacion Dieta Mediterranean , EU IPPC , JRC , IRENA – International Renewable Energy Agency , ACR+ , ISWA (Recycling & Recovery) , SUPSPORT , International Partnership for Expanding Waste Management Services of Local Authorities , UNEP Finance Initiative , Global Footprint Network , Plan Bleu , EU Local Governments for Sustainability (ICLEI) , AFED , EEB & BEUC , IUCN, World Tourism Organization, UNWTO ,PAP/RAC , ASCAME, UN HABITAT, UNECE, UNECE, ILO, EBRD , GiZ, Funding Programmes: H2020, GEF, H2020 (Europe),

3. CROSS-CUTTING THEME 3: CLIMATE CHANGE ADAPTATION

This theme corresponds to the 4th MSSD objective and partly to SDG 13.

The Mediterranean has long been identified as a “climate change hotspot” and climate change impacts in the region are becoming increasingly evident: observations over the last decades show that temperatures have risen faster than the global average and that dry spells are becoming frequent. All model projections agree on the region’s future warming and drying with potential huge risks and costs to the region’s economy, population centres and biodiversity.

The Mediterranean Region is considered as “high vulnerable to climate change” and it “will suffer multiple stresses and systemic failures due to climate changes” (IPCC Fifth Assessment Report (AR5, 2014)). The projected impacts (2081-2100 compared to 1986-2005) mentioned in the Report include an increase of 4-7o C in surface mean air temperature in the worst case scenario (RCP 8.5), 10-20% decreases in mean annual precipitation, increased risk of desertification, soil degradation, an increase in duration and intensity of droughts, changes in species composition, increase of alien species, habitat losses, agricultural and forests production losses. The EU funded “Climate Change and Impact Research: the Mediterranean Environment” (CIRCE) project leads to similar conclusions.

UNEP/MAP has been working on the issue of climate change impacts on the marine and coastal zone as far back as in the 1990’s. Aimed to further work on that, the ‘Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region’ (SAP BIO) was updated on climate change issues, and a related Synthesis Document giving an overview on priority national needs and urgent actions related to vulnerability and impacts of climate change on biodiversity in marine and coastal areas was issued in 2009. At the 16th meeting of the CPs to the Barcelona Convention in 2009, the “Marrakesh Declaration” adopted by Ministers of Environment and Heads of Delegation agreed to *“Implement effective coordination to ensure the integration of climate change issues into development policies with the aim of achieving the Millennium Development Goals and the objectives of the MSSD, and ensure the strengthening of cooperation for the sharing of experience in the field of surveillance (early-warning systems) and the development and implementation of adaptation and risk-management strategies”*.

There are several regional initiatives relevant and instrumental for the development of an adaptation framework for the Mediterranean coast and marine environment, with which cooperation will be necessary.

The Mid-Term Strategy cross-cutting theme “Climate Change” is aligned with the draft Regional Climate Change Adaptation Framework.

The MTS set out the two following strategic objectives:

1. To strengthen the resilience of the Mediterranean natural and socioeconomic systems to climate change by promoting integrated adaptation approaches and better understanding of impacts.
2. To reduce anthropogenic pressure on coastal and marine to maintain their contribution to climate change adaptation

For the period 2016-2021, **five Strategic Outcomes** are identified corresponding to the above mentioned strategy objectives. They focus on regional implementation, new action plans and programmes, strengthening national implementation, monitoring/assessment, and capacity building. Among the **Outputs**, the expected results and impacts, one can point out related regional strategies, methodological tools, action plans, ng programmes, awareness raising, and emerging issues.

Table 7 gives the selected Outcomes and expected Outputs, with the indicators and indicative targets set out, which can facilitate both the programming and the monitoring of progress.

TABLE 7. Strategic Outcomes, Indicative Outputs for Climate Change Adaptation

Strategic Outcomes	Indicative Outputs
7.1. Strengthening the regional implementation of the obligations under the Barcelona Convention and its Protocols, and of programmes of measures in existing Regional Strategies and Action Plans	7.1.1. Climate Change Adaptation mainstreamed into the implementation of existing regional strategies, regional action plans and measures.
	7.1.2. Actions of the SCP Regional Action Plan directly contributing to address climate change in the marine and coastal areas of the Mediterranean implemented.
7.2. Development of new action plans, programmes and measures, common standards and criteria, guidelines	7.2.1. Climate Change Adaptation mainstreamed into the development and implementation of new regional strategies, regional action plans and measures.
	7.2.2. Ecosystem--based responses (e.g. ecosystem services provided by wetlands) integrated in National Climate Change Adaptation Strategies.
	7.2.3. Climate Change-related risks addressed in the development and implementation of pollution-related regional strategies, regional action plans and measures.
7.3. Strengthening national implementation.	7.3.1. Climate change adaptation priority fields of action identified by the Regional Climate Change Adaptation Framework mainstreamed into and implemented through NAPs and national ICZM strategies.

7.4. Monitoring and assessment.	7.4.1. Climate Change vulnerability assessment undertaken and map produced.
7.5. Enhanced capacity at regional, sub-regional and national levels including technical assistance and capacity building.	7.5.1. Awareness and engagement of key stakeholders on climate change adaptation and on its links with the core themes enhanced.

The indicative list of potential actors and partners for the implementation of the above Strategic outcomes and indicative outputs could include:
 BC3, CMCC; EEA, Labex OT-Med, MISTRALS, UfM, UNER/Grid Arendal

4. IMPLEMENTATION: PARTNERSHIPS AND FUNDING

The implementation of the MTS is a collective process. The MTS should be used as a common platform for joint actions not only by CPs and the MAP system, but also for fostering cooperation with other International and Regional Organisations and programmes active in the Mediterranean. Civil society has always been an important group of stakeholders in the MAP system. In the implementation of the MTS, its role remains critical. “Synergies” and “complementarity” are once more the key words when seeking effectiveness, positive impacts and sustainability. To this end, the private sector – if mobilised properly – could become an important ally and contributor to the implementation of the MTS, in particular given its key role in the transition to the green economy.

The MAP system cooperates with the EU institutions (in particular the European Commission and EEA), since EU is a CP, and with GEF. Furthermore, UNEP/MAP has signed individual Memorandum of Understanding with IUCN, the UfM and General Fisheries Commission for the Mediterranean (GFCM) respectively. Among the International and Regional Organisations, with which UNEP/MAP has long lasting cooperation, the following – playing already a role in the Mediterranean – are potential important players expected to contribute to the implementation of MTS 2016-2021: European Maritime Safety Agency (EMSA), FAO, UNCTAD, UNEP/DTIE, UNESCO, UNIDO, UNWTO, ECLAT, ESCWA, ILO, RAMOGE, CIESM, CEDARE, GWP Med, Birdlife, WWF Med, the Mediterranean Energy Observatory and international financial agents like the FFEM, EBRD, EIB, IFC and WB.

The MTS, having a strategic nature, does not enter into budgetary details. Such details, as well as the actors and components in charge of implementation by activity, are to be found in the PoW of the relevant biennia of the period 2016-2021.

The main challenge when trying to achieve the objectives of Strategy is in the availability of financial resources, in particular taking into consideration the global and regional circumstances. The good practice of the last years, of mobilizing additional funding for specific projects in line with the PoW and in consultation with the CP, is encouraged to continue and be further extended to include other donors too.

In general terms, it would be important for the implementation of the objectives and outcomes set out by strategic theme to mobilise as many resources as possible. The Joint Resource Mobilisation Plan approved by COP 17 can be the guide to this end.

Furthermore, emerging funding possibilities under the EU, like the Adriatic-Ionian Strategy, need to be seriously explored and used.

5. MONITORING AND EVALUATION OF THE STRATEGY

Under the leadership of the Contracting Parties and the subsidiary bodies of the MAP/Barcelona Convention, the UNEP/MAP Secretariat (Coordinating Unit including MEDPOL) and the Regional Activity Centres, will be responsible for implementing the Strategy and will ensure coordination of its monitoring and evaluation processes.

Monitoring will take place in a combined way for MTS and PoW, with the initiative and under the coordination of the MAP Coordinating Unit and the ECP. The Bureau, the FPs and the MCSD will be informed and consulted accordingly. The results of the monitoring exercise will be presented every two years to the COP for information and possible adaptations of the planning, while the **evaluation** of the MTS will be carried out and presented to the COP at the end of the six-year period.

Being able to measure performance is a key step. It is needed to manage performance and provide assurance to CPs and donors that their investment is contributing to substantial impact. To do this, MAP uses a performance framework as agreed with the CPs. Central to the performance framework are the strategic outcomes and outputs to be achieved. Performance indicators and respective targets enable MAP to measure progress against these expected accomplishments.

Implementation of the data-sharing principles on the indicators and data related to the monitoring system for the MTS is needed. As foreseen in the MSSD too, that process will be promoted and facilitated by a consistent platform for the exchange of information, experience and synergies, based on the European Union's Shared Environment Information Systems (SEIS) principles on data sharing.

Evaluation of progress of the biennial PoW will act as an early warning calling for adaptations whenever necessary to achieve the MTS objectives and outputs. At the same time, the MSSD – having a longer perspective – will present a more effective time horizon to plan for regional impact. The entire MTS exercise will be evaluated at the end of the 6 years period.

Draft Decision IG.22/2

Mediterranean Strategy on Sustainable Development 2016-2025

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling Article 4 of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols;

Recalling Decision IG.21/11 on the review of the MSSD of COP 18 (Istanbul, Turkey, December 2013);

Having considered the report of the 16th Meeting of the Mediterranean Commission on Sustainable Development and its recommendation, endorsing the MSSD 2016-2025 for onward submission to MAP Focal Points and COP 19;

Welcoming the adoption of the 2030 Agenda for Sustainable Development by the UN Summit (New York, September 2015);

Adopts, as a strategic guiding document for all stakeholders and partners to translate the 2030 Agenda for Sustainable Development at the regional, sub-regional and national levels, the Mediterranean Strategy for Sustainable Development 2016-2025 as contained in the Annex to this Decision;

Encourages Contracting Parties to reflect as appropriate the objectives, strategic directions and actions set out in the MSSD 2016-2025 into national strategies for Sustainable Development, bearing in mind the importance of the integrated and sustainable approach to development provided by the MSSD for achieving the protection of the marine and coastal environment;

Invites countries to use the MSSD 2016-2025 as a Framework for further integrating sustainable development into their national policies and building horizontal synergies between different government sectors and vertical synergies between different levels of government from local to central and vice versa;

Encourages the Contracting Parties to ensure adequate support, full visibility and wide dissemination of the MSSD 2016-2025 at all levels;

Invites international organizations, initiatives and programmes working in the field of Sustainable Development in the Mediterranean to contribute to the implementation of the MSSD 2016-2025 and streamline its priorities in their work and commitments;

Calls on all Mediterranean stakeholders to contribute to the implementation of the MSSD 2016-2025;

Requests the MCSD to carry out a mid-term review of the status of implementation of the MSSD 2016-2025 at regional and national level and to report the results to COP 21;

Requests the Secretariat to support the implementation of the MSSD 2016-2025.

Annex

Mediterranean Strategy for Sustainable Development 2016-2025 Investing in environmental sustainability to achieve social and economic development

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EXECUTIVE SUMMARY

The Mediterranean Strategy for Sustainable Development 2016-2025 provides a strategic policy framework, built upon a broad consultation process, for securing a sustainable future for the Mediterranean region consistent with Sustainable Development Goals. It aims to harmonise the interactions between socio-economic and environmental goals, adapt international commitments to regional conditions, guide national strategies for sustainable development, and stimulate regional cooperation between stakeholders in the implementation of sustainable development. As highlighted in its subtitle (*Investing in environmental sustainability to achieve social and economic development*), the Strategy is underpinned by the conviction that investment in the environment is the best way to secure long-term sustainable job creation and socio-economic development.

While increasing global domestic product is not an end in itself, economic development interacts with macroeconomic and financial stability and is a primary concern of all governments. The Mediterranean region and its riparian countries need such sustained economic development, with effective governance, productive firms and functioning cities, and further economic diversification, trade integration, and greater infrastructure investment.

The Mediterranean Sea is home to a large diversity of ecosystems and species subject to considerable pressures. Its coasts account for 30 per cent of global tourist arrivals. Development of large and mega-cities is increasing pressures from the rising population levels and the accumulation of economic activities in coastal zones. Mediterranean agricultural products and diet have a global reputation, but depend on the sustainability of rural landscapes, resources and decent working conditions. Global shipping routes through the Mediterranean make the density of maritime traffic exceptional for a semi-closed sea. The recent surge of interest in the exploitation of hydrocarbons and minerals under the Mediterranean seabed poses also increased risks for the environment.

Significant discrepancies in development levels between countries, together with conflicts in the region, pose challenges for envisaging a sustainable future of the Mediterranean basin. The fragility of the region is further aggravated by its sensitivity to climate change: the Mediterranean ecosystems are and will be among the most impacted by global climate change drivers.

The Strategy is formulated taking into account the outcomes of the **United Nations Conference on Sustainable Development (Rio+20)** which put particular focus on the green economy in the context of sustainable development and poverty eradication. The United Nations process on the **Sustainable Development Goals** aims to build upon the Millennium Development Goals and proposes a set of goals that should be coherent with and integrated into the United Nations development agenda beyond 2015.

The institutional landscape is characterized by the emergence of regional initiatives focusing on increased collaboration between the south and north shores of the Mediterranean, such as the **Union for the Mediterranean** and **Horizon 2020 initiative** to de-pollute the Mediterranean Sea by 2020. Other regional initiatives focus on specific issues to be addressed at the Mediterranean level, looking at the most significant sources of environmental degradation in the region.

The Strategy is built around the following vision:

A prosperous and peaceful Mediterranean region in which people enjoy a high quality of life and where sustainable development takes place within the carrying capacity of healthy ecosystems. This is achieved through common objectives, strong involvement of all stakeholders, cooperation, solidarity, equity and participatory governance.

A set of **guiding principles** also informs the Strategy: the importance of an integrated approach to environmental and development planning; an openness to a plurality of future development models; a balanced approach to territorial development; the precautionary and polluter pays principles; a

participatory approach to policy and decision-making; the importance of evidence-based policy; the reconciliation of long- and short-term in terms of planning and evaluation; transparency; and, the partnership between the MAP system and other international and regional organizations.

The Strategy follows a **structure** based on **six objectives** that lie in the interface between environment and development, and were chosen to provide scope for an integrated approach to address sustainability issues. The three first objectives reflect a territorial approach, while the other objectives are cross-cutting ones, addressing key policies and areas, as follows:

1. Ensuring sustainable development in marine and coastal areas;
2. Promoting resource management, food production and food security through sustainable forms of rural development;
3. Planning and managing sustainable Mediterranean cities.
4. Addressing climate change as a priority issue for the Mediterranean;
5. Transition towards a green and blue economy;
6. Improving governance in support of sustainable development.

A set of **strategic directions** is formulated for each of the six overall objectives. The strategic directions are complemented by **national and regional actions**, as well as **flagship initiatives and targets**. The actions aim at providing guidance and inspiration for the most effective implementation of the Strategy. Not all countries may have the necessity or the resources to undertake all the proposed actions: it may be preferable to adapt the proposed actions to national needs. In addition, the Strategy takes as a given the implementation of all national and international obligations, even if it does not explicitly mention them.

The scope and content of the six objectives of the Strategy can be summarised as follows:

Objective 1: Ensuring sustainable development in marine and coastal areas

The objective focusing on “Sea and coasts” sits firmly and historically in the basin approach taken by the Mediterranean Action Plan (MAP) and the Barcelona Convention. The strategy for marine and coastal areas rests on strengthen implementation of and compliance with the Protocols of the Barcelona Convention and other regional policy instruments and initiatives supplemented by national approaches, as well as establish and enforce regulatory mechanisms, including Maritime Spatial Planning, to prevent and control unsustainable open ocean resource exploitation. .

Objective 2: Promoting resource management, food production and food security through sustainable forms of rural development

Rural areas in the Mediterranean are diverse in natural conditions, and social and economic structure, but share a potential for the establishment of new bases for economic and social development. The maintenance of the good status and health of rural ecosystems is fundamental for both biodiversity conservation and human well-being. The sustainable use, management and conservation of natural resources, rural development and food production and security are interdependent aspects that ensure the well-being of rural communities and provide significant inputs to downstream industries, from food processing to tourism. The Strategy calls for conservation and use of indigenous or traditional plant varieties and domestic animal breeds, valuing traditional knowledge and practices. In addition, it promotes networks of ecologically protected areas, enhancing stakeholder awareness on the value of ecosystem services and the implications of biodiversity loss. The Strategy also recommends inclusive rural development, poverty eradication, women’s empowerment, youth employment, equitable access to basic local services, as well as access of local producers to distribution channels and markets, including the tourism market.

Objective 3: Planning and managing sustainable Mediterranean cities

While the urbanization continues apace, in particular along its southern shores, most Mediterranean cities, notably the coastal ones, are not being managed sustainably in relation to their carrying capacities and are insufficiently resilient. Yet as engines of economic development, innovation and creativity, cities are critical for sustainable development, as the climate friendly cities agenda shows.

For those reasons, a new, sustainable, inclusive and creative approach to planning and managing Mediterranean cities is the best hope for riparian urban settlements. Key elements of this approach are the following: use inclusive urban planning and management processes, promote socio-economic cohesion, reduce environmental pressures, increase resilience, protect and rehabilitate historical areas, and promote green buildings and sustainable waste management within the context of a more circular economy.

Objective 4: Addressing climate change as a priority issue for the Mediterranean

Climate variability and change is evident in the Mediterranean; the consequences of climate change are expected to worsen already critical situations present in the region. The Strategy calls for progress towards a green, low-carbon and climate-resilient Mediterranean region, promoting complementary strategic directions, as follows: Increase scientific knowledge, raise awareness, and develop technical capacities to deal with climate change and ensure informed decision-making at all levels, recognising and protecting the climate adaptation and mitigation services of natural ecosystems; Accelerate the uptake of climate smart and climate resilient responses; Leverage existing and emerging climate finance mechanisms, including international and domestic instruments, and enhance the engagement of the private and finance sectors; Encourage institutional, policy and legal reforms for the effective mainstreaming of climate change responses into national and local development frameworks, particularly in the energy sector. The Strategy is complemented by the UNEP/MAP Regional Climate Change Adaptation Framework.

Objective 5: Transition towards a green and blue economy

A green economy – called blue economy when applied to the coastal, marine and maritime sectors – is one that promotes sustainable development whilst improving human well-being and social equity, and significantly reducing environmental risks and ecological scarcities. Besides being about renewable energy, waste management, and sustainable consumption and production, the green economy concept draws on new and emerging paradigms such as the circular economy, the collaborative economy and the functional economy. The green economy explicitly includes the objectives of job creation and social inclusion, in order to promote a more healthy and just society. The Strategy encourages the measurement of well-being, as well as environmental friendly and social innovation. It promotes the integration of sustainability into decision-making on public and private investment. The Strategy also recommends a greener and more inclusive market that integrates the true environmental and social cost of products and services. The Strategy is complemented by the UNEP/MAP Sustainable Consumption and Production Action Plan for the Mediterranean.

Objective 6: Improving governance in support of sustainable development

Governance is a crosscutting objective and concerns the inclusion of non-state actors in decision-making processes, using new forms of cooperation arrangements. Regional challenges for environmental governance include fragmentation of responsibility, uncoordinated and non-results-based planning and implementation, as well as weak human and financial resources in the public sector, particularly at the local level. The Strategy for improving environmental governance in the Mediterranean rests on five pillars: Enhance international dialogue and cooperation, including on emergency-preparedness; Promote stakeholder engagement to secure inclusive processes and integrity in decision-making; Promote implementation and compliance with environmental obligations and agreements, including through policy coherence based on inter-ministerial coordination; Promote education and research; and, Enhance regional capabilities for information management.

The third chapter of the Strategy focuses on **implementation, funding and monitoring** aspects, as follows: Institutional structures and processes for the implementation of the Strategy; Financing the implementation of the Strategy; and, Monitoring system and regional dashboard on the implementation of the Strategy.

Although facilitated by the **MAP system**, it is the participation and active role of all stakeholders that will play a decisive role in the delivery of the Strategy. The MAP system provides leadership and guidance with respect to implementing the Strategy: the UNEP/MAP action plans formulated with a

view to implementing the Protocols of the Barcelona Convention, as well as other key existing regional mechanisms and instruments, are essential tools for implementing the Strategy. The MAP system is of primary importance to provide support and technical guidance to the Contracting Parties to the Convention, as well as for coordinating implementation actions and monitoring processes. The **Mediterranean Commission on Sustainable Development** is a key structure within this system for supporting the implementation of the Strategy.

The countries are invited to use the Strategy as a framework for better integration of sustainable development into their national policies and to build horizontal synergies between different government sectors and vertical synergies between different levels of government, from local to central and vice-versa. **Intergovernmental and regional and sub-regional organizations** also have a very important role, working in tandem with each other and with the MAP system, to facilitate synergies with countries using the Strategy as a common platform.

For **civil society**, the Strategy contains a set of strategic directions that at once inform its work along with other partners, and provides fertile grounds for the development of projects. Civil society can also take up important tasks related to awareness and sensitization. **The private sector** is another key partner, notably in the emerging green and blue economy, not only through corporate social responsibility, but also through more sustainable consumption and production processes. The analytical tools that will allow the forecasting, planning and assessment of sustainable development-related impacts and actions need to be developed with **the scientific community**, which itself needs to direct its research capacity in support of policymaking. For **funding bodies**, the Strategy contains a set of widely-agreed regional objectives, as well as strategic directions within these objectives, which will help such bodies to position and assess funding proposals aimed at advancing sustainable development in the region.

Putting in place adequate **institutional structures** is a key priority in providing for effective implementation of the Strategy. The Strategy in this area rests on two pillars: Put in place or strengthen structures for sustainable development implementation at national and regional scale, and ensuring their adequate resourcing; and, Establish regional processes for the implementation and monitoring of the Strategy.

Implementation of the Strategy, based on the ambitious but necessary and realistic vision of establishing a sustainable Mediterranean on strong economic and social foundations, needs significant **financial resources**. The Strategy includes a series of actions to strengthen capacity for financing its implementation such as a project portfolio, capacity building processes and an investment facility for funding sustainable development actions in the Mediterranean.

A comprehensive **monitoring system** and relevant **indicators** are necessary for the implementation of the Strategy. Two forms of monitoring are required, both the follow-up of the implementation of the actions recommended in the Strategy, such as the number of countries implementing an action, and the progress of the wider sustainable development issues, such as the reduction of greenhouse gas emissions, for instance. While both are relevant for monitoring the implementation of the Strategy, the indicators and approaches are different. Therefore, the regular monitoring of the Strategy will be developed through the establishment of a **dashboard of sustainability indicators** populated for the Mediterranean.

1. INTRODUCTION AND BACKGROUND

Sustainable development seeks to address the needs of current and future generations, utilizing natural resources and ecosystems in ways that preserve and sustain them and ensure equitable access to them in the present and the future. It sets the framework for securing viable and lasting development and decent livelihoods for all, which are particularly important considerations in the current challenging Mediterranean socio-economic context.

The United Nations process on the Sustainable Development Goals, one of the key outcomes of the United Nations Conference on Sustainable Development (Rio+20), aims to build upon the Millennium Development Goals and proposes a set of goals that should be coherent with and integrated into the United Nations development agenda beyond 2015.¹

Sustainable development is of key importance for the Mediterranean: it is a closed sea, in which water renewal is limited by the narrow connection to the ocean, and therefore particularly sensitive to pollution. In addition, its mild climate makes it home to a large diversity of ecosystems and species. The Mediterranean is also subject to considerable pressures. With its rich history and exceptional natural and cultural landscapes, its coasts accounted for 31 per cent of global tourist arrivals in 2011, while in previous years the figure had reached more than 35 per cent. At the same time, international tourism receipts reached 190 billion Euros, representing approximately 26 per cent of the global total.² Urban agglomerations on the Mediterranean coasts, along with tourist infrastructure, have resulted in the development of large and mega-cities, with consequent pressures from the rising population levels and the accumulation of economic activities in a particularly fragile environment. Mediterranean agricultural products, as well as Mediterranean diets, have a global reputation, but depend entirely on the sustainability of rural landscapes, resources and decent working conditions. Global shipping routes through the Mediterranean make the density of maritime traffic exceptional for a semi-closed sea. The recent surge of interest in the commercial exploitation of hydrocarbons and minerals under the Mediterranean seabed also poses increased risks for the Mediterranean environment.

Significant discrepancies in development levels and living standards between countries, together with the conflicts in the region, which are already negatively affecting investment and development, pose also challenges for envisaging a sustainable future of the Mediterranean basin. The fragility of the region is further aggravated by its sensitivity to climate change: in its Fifth Assessment Report, the Intergovernmental Panel on Climate Change has identified Mediterranean ecosystems among the most impacted by global climate change drivers.

The aim of the Mediterranean Strategy for Sustainable Development 2016-2025 is to provide a strategic policy framework, built upon a broad consultation process, for securing a sustainable future for the region. The rationale behind the Strategy is the need to harmonise the interactions between socio-economic and environmental goals, to adapt international commitments to regional conditions, to guide national sustainable development strategies and to stimulate regional cooperation between stakeholders in the implementation of sustainable development. The Strategy is underpinned by the conviction that investment in the environment is the best way to secure long-term, sustainable job creation and socio-economic development, and an essential vehicle for the achievement of social and economic objectives. For this reason, the Strategy focuses on addressing cross-cutting issues that lie in the interface between environment and development. It addresses issues across sectoral, institutional and legal boundaries, emphasizing the interlinkages between environmental issues and economic and social challenges, rather than specific economic sectors such as tourism or agriculture. The Strategy is also expected to lead to synergies being forged between the work of important national and regional players and stakeholders, by providing a commonly-agreed framework, thereby leading to increased efficiency in the implementation of sustainable development in the Mediterranean.

1.1. Background

At the 12th Conference of the Contracting Parties to Barcelona Convention in Monaco in November 2001, in line with the outcomes of the World Summit on Sustainable Development, the 21 Mediterranean countries and the European Community decided to prepare a Mediterranean Strategy for Sustainable Development.

The Strategy 2005-2015 was developed as a result of a consultation process that mobilized Mediterranean stakeholders, including Governments and civil society through the participation of non-governmental organizations and key experts. The first Mediterranean Strategy for Sustainable Development was adopted by the Contracting Parties to the Barcelona Convention in 2005 at their 14th meeting in Portoroz, Slovenia.

The need for the Strategy remains strong today, as while the global and regional context has changed significantly, the pressures are even more pronounced. At the same time, new regional instruments have been developed, such as the Ecosystem Approach Roadmap³ and the Protocol for Integrated Coastal Zone Management in the Mediterranean⁴ under the Barcelona Convention, as well as the Sustainable Consumption and Production Action Plan for the Mediterranean⁵, which is under preparation.

Above all, the present Strategy has been formulated taking into account the outcomes of the United Nations Conference on Sustainable Development (Rio+20), which put particular focus on the green economy in the context of sustainable development and poverty eradication, and included an agreement to draft Sustainable Development Goals.

At the same time, at the regional level, the landscape is characterized by the emergence and consolidation of initiatives focusing on increased collaboration between the south and north coasts of the Mediterranean, such as the Union for the Mediterranean⁶, the intergovernmental organization promoting concrete regional projects under the principles of co-ownership and variable geometry, which has launched the Horizon 2020 initiative to de-pollute the Mediterranean by 2020.⁷ Other regional initiatives focus on specific issues to be addressed at the Mediterranean level, addressing the most significant sources of environmental degradation in the region through tools such as maritime spatial planning and resource-efficiency.

Mandate for the review of the Mediterranean Strategy for Sustainable Development

In light of the outcomes of Rio+20, the Contracting Parties to the Barcelona Convention requested, at their 18th Ordinary Meeting held in Istanbul, Turkey, in December 2013, that a review of the Strategy be launched (Decision IG.21/11), with a view to submitting a new strategy for consideration and adoption by the Contracting Parties at their 19th meeting, to be held in February 2016 in Greece. The Decision emphasizes the importance of synergies with the global Sustainable Development Goals process, in order to ensure coherence between global and Mediterranean regional objectives and targets, while allowing for regional innovation and specificities.

In addition, the Decision IG.21/11 emphasizes the need for synergies and coherence between the Strategy and other regional initiatives, both those led by the Mediterranean Action Plan (MAP) and those led by other actors. As well as the need to consider policy initiatives and instruments at the regional level, the review of the Strategy needs to take on board key existing MAP initiatives and/or instruments, such as the Roadmap for the implementation of an ecosystem approach in the Mediterranean, the Action Plan for the Implementation of the Protocol on Integrated Coastal Zone Management in the Mediterranean (2012-2019), the upcoming Regional Climate Change Adaptation Framework, the upcoming Sustainable Consumption and Production Regional Action Plan, and the upcoming Roadmap towards a comprehensive, ecologically representative, effectively connected and efficiently managed network of Mediterranean Marine Protected Areas by 2020. The reviewed

Strategy will also need to develop linkages with other regional strategies (existing or to be finalized) and strategic frameworks.

Assessments of the implementation of the Mediterranean Strategy for Sustainable Development 2005-2015

The Mediterranean Strategy for Sustainable Development 2016-2025 draws upon the findings of two assessments carried out to inform the review process, the first focussing on implementation between 2005 and 2010, and the second addressing the influence of the regional strategy on national strategies for sustainable development.

In 2011, an assessment of the implementation of the Strategy 2005-2015 was carried out five years after its adoption, which offered a number of useful conclusions.⁸ It concluded that the major fulfilments at mid-term were in first place, the signature of the Protocol on Integrated Coastal Zone Management in the Mediterranean, and in second, the influencing of the development of recent national strategies for sustainable development, as well as the widespread perception that the Mediterranean Strategy for Sustainable Development was a useful background document for public authorities in the implementation of national strategies, without affecting the policy action in concrete terms. The key conclusions are summarized below:

- For some of the 2005 Strategy's objectives such as sanitation and access to electricity, the situation was improving, while for others such as climate change, energy intensity, water and sustainable tourism (particularly the environmental objectives), the situation was worsening.
- The Strategy should put more emphasis on emerging priorities, such as climate change adaptation and the green economy. New indicators, such as those related to population flows caused by climate change, among others, would allow the monitoring of adaptation processes in greater detail.
- Tangible targets and indicators for their measurement should be elaborated.
- The implementation of the Strategy had been strongly affected by the existing governance framework. A different organization of the roles and organization framework concerning the UNEP/MAP for the Barcelona Convention, including the role and expectations of national focal points, is required to create the channels for effective implementation of the Strategy. MAP should create and adapt existing work units to provide a monitoring service for the existing programmes and push forward activities of technical assistance, knowledge sharing, capacity-building, information exchange and monitoring.
- The Strategy should include, as far as possible, opportunities for synergies with other programmes, organizations and initiatives and, when feasible, indicate timing and modalities by which those synergies might arise. The business community, local authorities or their representatives, academics and non-governmental organizations should be more involved at the national level and at the level of the Mediterranean Commission on Sustainable Development. Improving synergies between international and regional organizations operating in the Mediterranean region would also be appropriate in order to maximize the results of initiatives and reduce uncertainties.
- An explanation of the procedures, resources and organization for the transformation of the Strategy into actions at the national level is needed, as the passage from a regional strategic framework to national policies is neither automatic nor straightforward, especially taking into account the interlinkages between different sectors and levels of administration and governance in the countries.

In 2009, the MAP Secretariat carried out a review and assessment of national strategies for sustainable development in the Mediterranean, in order to "provide an overall assessment of the actions and initiatives carried out so far by the Mediterranean countries for sustainable development and hence

allow for a better appreciation of the state of play". The assessment also examined the relation and effect of the Strategy on the development and implementation of national strategies for sustainable development. It concluded that the Strategy has played a role more at the regional level than in effectively engaging the authorities at the national level to produce their national strategies for sustainable development. However, it noted that the MAP initiative to assist in the preparation of national strategies was worthwhile and had been embraced by a number of countries. In addition, although national strategies were structured around the three pillars of sustainable development, environmental issues often overshadowed the other two pillars. The assessment also reported that at a national level a single government institution, usually a ministry of the environment, generally coordinated the process. It was often the case that the entity responsible for coordinating the formulation and implementation of sustainable development strategies faced challenges in providing leadership and cross-government support, especially when sustainable development strategy processes were not connected with government planning and budgeting, as often occurred. In addition, there was the risk of cross-government commitment fading through time, especially in periods of economic crisis.

1.2. The Mediterranean Region

With its long history, its rich natural and cultural heritage, the Mediterranean Sea is a meeting point between three continents: Africa, Asia and Europe. Surrounded by 21 countries, it is the world largest semi-closed sea.

Rich natural and cultural resources

Encompassing seven marine eco-regions⁹, 75 coastal hydrological basins, and 224 coastal administrative regions, the Mediterranean Sea occupies a basin of almost 2.6 million km², has a coastline of 46,000 km, with an average water depth of approximately 1,500 m. The riverine systems that are the main source of nutrients and their related human activities have a significant impact on the health of the Mediterranean Sea.

With its variety of coastal and marine ecosystems, the Mediterranean region supports some of the richest fauna and flora in the world and has a wide diversity of habitats. It is recognized as one of the 25 top global biodiversity hotspots and characterised as an area of exceptional biodiversity value, with a large number of endemic species and critical levels of habitat loss. There are an estimated 10,000–12,000 marine species in the Mediterranean, comprising approximately 8,500 macroscopic fauna, over 1,300 plant species and 2,500 species from other taxonomic groups. This represents 4–18 per cent of the world's known marine species, depending on the taxonomic group, in an area covering less than 1 per cent of the world's oceans and less than 0.3 per cent of its volume.¹⁰

The Mediterranean region is home to some of the oldest human settlements in the world giving it unique cultural heritage and cultural landscapes. This has forged, over thousands of years, strong bonds among the people of the region and given added meaning to the sense of belonging to the Mediterranean. Despite their diversity, the regional identity of the Mediterranean countries has been strengthened by centuries of commerce and communication. It is still one of the world's busiest shipping routes, with about one third of the world's total merchant shipping: 220,000 merchant vessels of more than 100 t cross the Mediterranean Sea each year.¹¹

The state of the coastal and marine environment in the Mediterranean is variable, but all parts of the region are subject to multiple pressures, acting simultaneously and in many cases chronically. The 2012 Report on the State of the Mediterranean Marine and Coastal Environment highlights the major issues requiring coordinated policy and management responses in the coming years in order to stem the tide of degradation of Mediterranean ecosystems.¹² The major drivers of environmental degradation listed are coastal development and sprawl, chemical contamination, marine litter, marine noise, invasive non-indigenous species, and, overexploitation of many of the commercially-exploited

fish stocks. The principal impacts of these drivers are: chemical contamination of sediments and biota; alteration of marine food webs; alterations in hydrographic conditions; changes to sea-floor integrity; and eutrophication in coastal areas near large rivers and/or cities. In addition, climate change is also emerging as a key driver of environmental change in the region.

Mediterranean coastal zones: A vital interface between land and sea

It is estimated that approximately one third of the Mediterranean population is concentrated in its coastal regions, whereas more than half of the population resides in the coastal hydrological basins. According to Plan Bleu the population in the Mediterranean coastal regions is estimated at 150 million inhabitants and that of its hydrological basins totals approximately 250 million people, which represents 33 per cent and 55 per cent of the total population of the riparian states, respectively.¹³ This percentage reaches 65 per cent for the southern countries of the region, with around 120 million inhabitants.

The population of riparian states grew from 276 million in 1970 to 466 million in 2010, and is predicted to reach 529 million by 2025. However the distribution of population between the Mediterranean countries of the European Union and the southern and eastern Mediterranean countries has changed dramatically over this period: in 1960, the Southern and Eastern countries represented 41 per cent of the total population, while today this figure is 60 per cent. This population growth is associated with a significant increase of the urban population, which grew from 48 per cent in 1960 to 67 per cent in 2010. Most of this urbanization has taken place along the coasts: cities such as Algiers and Tel-Aviv have seen their populations rise by 5 to 10 times between 1950 and 2010.

Socio-economic trends

In 2010, the Mediterranean states were responsible for 11.5 per cent of the world's gross domestic product, decreasing slightly from their 13.5 per cent share in 1990. Regionally, although the growth rates in Southern and Eastern countries are higher than those of the Mediterranean countries within the European Union, the gap remain high: in 2011, the average income per capita in Southern and Eastern countries (about 6,000 USD) was 4.6 times lower than the average income in the Mediterranean countries of the European Union.¹⁴ The economic growth in the Southern and Eastern countries was accompanied by significant improvements in key social indicators as represented by the Human Development Index.¹⁵

Resource-based activities (i.e. fisheries, aquaculture, forestry, agriculture, and primary industries), secondary industries (e.g. food processing, housing and construction) and services (e.g. shipping and tourism) will continue to dominate economic development in the Mediterranean coastal regions. The potential for economic opportunities in coastal cities remains a strong attractive force, attracting populations from the hinterland and fuelling immigration from often economically depressed rural areas. These new coastal cities' inhabitants will demand employment, food, water, energy, housing, and other goods and services, exerting further pressure on the coastal ecosystems and environments, and therefore presenting a substantial development challenge for the Mediterranean.

Within the region, poverty continues to afflict many: the Arab Forum for Environment and Development reports that it affects 65 million people in the Middle East and Northern Africa.¹⁶ Economic insecurity is aggravated by high unemployment rates in the general population, which increase among youth. Sharp income disparities still exist among countries, and in some cases growth figures conceal deterioration in regenerative natural capital.¹⁷ That raises questions about the ability of Mediterranean economies to create the millions of new jobs projected to be required by 2020 to accommodate new entrants into the labour force, while keeping current unemployment rates stable. The impacts of poverty and unemployment have contributed to social marginalization, which is further compounded by income disparities, and gives rise to social and political instability. Demands for change across the Mediterranean reveal that the mounting economic, social, and environmental strains

and the resultant implications on livelihood security have become unsustainable. In many countries it is because sustainable development planning was absent that civil and armed conflict has arisen. Similarly, at the regional level, current and emerging socio-economic and political challenges and their impacts remain major concerns for sustainable development.

1.3. Formulating the Mediterranean Strategy for Sustainable Development 2016-2025

The review of the Strategy was carried out in three phases. The review process was launched in February 2014, and a consultation document drawn up. On the basis of that document a wide consultation process was carried out in April 2014, focusing on the vision and issues to be addressed in the review. During the meeting of the Steering Committee of the Mediterranean Commission on Sustainable Development held in Malta in June 2014, the Committee proposed a vision and a structure for the new strategy, based on six themes – which later became the six overall objectives for the Strategy. The six themes were based on a grouping of the issues emerging from the Phase 1 consultation, as well as the themes emerging from 2014 proposal of the United Nations' Open Working Group on the Sustainable Development Goals. Echoing the decision taken at the 18th meeting of the Contracting Parties to the Barcelona Convention, the Steering Committee emphasized that the Strategy 2016-2025 should focus on the interface between the environment and socio-economic development. Socio-economic matters are addressed insofar as they relate to the interfacing environmental themes.

The second phase involved the drafting of the Strategy, based on the feedback received from the first phase. A participatory approach was also taken during this phase: six thematic working groups made up of key stakeholders and experts were constituted to provide input into the drafting of the thematic sections. Face-to-face meetings complemented the electronic communications of the working groups. In the final phase the draft Strategy was submitted for endorsement by the 16th meeting of the Mediterranean Commission for Sustainable Development in June 2015 in Morocco, and final approval for the Strategy will be sought during the 19th Meeting of the Contracting Parties to the Barcelona Convention in 2016.

2. MEDITERRANEAN STRATEGY FOR SUSTAINABLE DEVELOPMENT 2016-2025: OBJECTIVES, STRATEGIC DIRECTIONS AND ACTIONS

The aim of this Strategy is to provide a strategic policy framework to secure a sustainable future for the Mediterranean region. The rationale behind the Strategy is the need to harmonise the interactions between socio-economic and environmental goals, to adapt international commitments to regional conditions, to guide national sustainable development strategies, and to stimulate regional cooperation between stakeholders in the implementation of sustainable development. In this respect, sustainable development translates into the need to take into account environmental, social and economic goals in decision-making at all scales and across all sectors. The Strategy is underpinned by the conviction that investment in the environment is the best way to secure long-term, sustainable job creation and socio-economic development, and an essential vehicle for the achievement of social and economic objectives. The Strategy is built around the following vision:

A prosperous and peaceful Mediterranean region in which people enjoy a high quality of life and where sustainable development takes place within the carrying capacity of healthy ecosystems. This is achieved through common objectives, strong involvement of all stakeholders, cooperation, solidarity, equity and participatory governance.

This vision is encapsulated in the subtitle of the Strategy, which is '*Investing in environmental sustainability to achieve social and economic development*'.

A set of guiding principles also informs the Strategy: the importance of an integrated approach to environmental and development planning; an openness to a plurality of future development models; a balanced approach to territorial development; the precautionary and polluter pays principles; a

participatory approach to policy and decision-making; the importance of evidence-based policy; the reconciliation of long- and short-term for planning and evaluation (at least over a few decades); transparency; and, the partnership between the MAP system and other international and regional organizations.

The Strategy focuses on addressing cross-cutting issues that lie in the interface between environment and development. It is based on a set of cross-cutting themes that were chosen to provide scope for an integrated approach to address sustainability issues, as follows: Seas and coasts; Natural resources, rural development and food; Sustainable cities; Climate; Transition towards a green economy; Governance.

The first three themes reflect a territorial approach, where complex sustainability issues can be addressed together: a concern over seas and coasts was a major outcome of Rio+20, as well as a cornerstone of the cooperation under the Barcelona Convention; rural areas provide a context for addressing a set of inter-related rural issues; and, cities were the theme of the Istanbul 18th Conference of the Parties to the Barcelona Convention in 2013. The three cross-cutting themes that follow are climate change, which is a major sustainability issue from a global and regional perspective; the green economy, which provides a key link between the environment and the economy and is a major focus of the Rio+20 Summit; and governance, which emerged during the consultation as a key issue for implementing sustainability in the Mediterranean region. These themes have been used as a basis for formulating the six objectives of the Strategy, as follows:

1. Ensuring sustainable development in marine and coastal areas
2. Promoting resource management, food production and food security through sustainable forms of rural development
3. Planning and managing sustainable Mediterranean cities
4. Addressing climate change as a priority issue for the Mediterranean
5. Transition towards a green and blue economy
6. Improving governance in support of sustainable development

These objectives correspond closely to those covered by the 2014 proposal from the United Nation's Open Working Group on Sustainable Development Goals, submitted for consideration by the United Nations General Assembly at its 69th Session in 2014, as indicated in Table 1 below. Nevertheless, due to the cross-cutting nature of the objectives, almost all the proposed Sustainable Development Goals are indirectly relevant to all the Strategy's objectives.

Table 1. Linking the objectives of the Mediterranean Strategy for Sustainable Development 2016-2025 to the 2014 proposal of the United Nation's Open Working Group on Sustainable Development Goals

Mediterranean Strategy for Sustainable Development 2016-2025 objectives	Proposed sustainable development goals (2014)
1.Ensuring sustainable development in marine and coastal areas	14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
2.Promoting resource management, food production and food security through sustainable forms of rural development	2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss 6. Ensure availability and sustainable management of water and sanitation for all
3.Planning and managing sustainable Mediterranean cities	11. Make cities and human settlements inclusive, safe, resilient and sustainable 7. Ensure access to affordable, reliable, sustainable, and modern energy for all

4. Addressing climate change as a priority issue for the Mediterranean	13. Take urgent action to mitigate climate change and its impacts
5. Transition towards a green and blue economy	8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 12. Ensure sustainable consumption and production patterns
6. Improving governance in support of sustainable development	16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development
Cross-cutting sustainable development goals related to social issues	1. End poverty in all its forms everywhere 3. Ensure healthy lives and promote well-being for all at all ages 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all 5. Achieve gender equality and empower all women and girls 10. Reduce inequality within and among countries

The six objectives represent the backbone of the Mediterranean Strategy for Sustainable Development 2016-2025. Each objective covers a range of sustainability issues, as presented in Box 1.

Box 1. List of issues addressed by the six objectives of the Mediterranean Strategy for Sustainable Development 2016-2025

<p>1. Ensuring sustainable development in marine and coastal areas</p> <ul style="list-style-type: none"> ➤ Continued environmental degradation and increased risks from marine pollution and marine noise ➤ Loss of biodiversity ➤ Ecosystem fragmentation and degradation ➤ Unsustainable exploitation of living resources and alien species in ecological systems ➤ Impacts from exploitation of non-living marine resources ➤ Incidental catches of endangered species ➤ Increased linear coastal urbanization resulting in inadequate protection and management of land, urban sprawl owing to illegal construction and gentrification of coasts, and unrestricted tourism development <p>2. Promoting resource management, food production and food security through sustainable forms of rural development</p> <p><i>Natural resources and ecosystem services</i></p> <ul style="list-style-type: none"> ➤ Loss of biodiversity and local varieties of crops and indigenous breeds from: <ul style="list-style-type: none"> ▪ Overexploitation or illegal use of water and other natural resources ▪ Habitat loss, degradation and fragmentation, and lack of appropriate valuation ▪ Alien and invasive species ▪ Genetically modified organisms ▪ Climate change ➤ Pollution of soil, water and air ➤ Degradation and fragmentation of terrestrial ecosystems, notably forests ➤ Protected areas at risk from insufficient spatial coverage, planning, management and funding ➤ Insufficient awareness of ecosystem services and their economic benefits from society, industries and policymakers, and lack of appropriate valuation ➤ Cross-border issues in the management of natural resources and livestock production <p><i>Rural development and food</i></p> <ul style="list-style-type: none"> ➤ Vulnerability of small producers to economic and climatic changes and natural resource scarcity ➤ Low provision of social services and infrastructure in certain rural areas ➤ Loss of agricultural land, erosion and desertification ➤ Socio-economic inequalities affecting rural populations, particularly women and youth

- Logistical deficit at local, national and regional levels, including lack of access of local and small producers to land, water, credit, and markets
- Agricultural production and market controlled by large players, leaving limited access for small-scale producers and local products
- Loss of traditional know-how and aging farmers
- Insufficient collective organization and lack of participation of local communities in natural resource management
- Insufficient consideration of water, land and food security nexus

3. Planning and managing sustainable Mediterranean cities

- Urban quality of life and health degraded by traffic congestion, noise, poor air quality, inadequate supply of sanitation and increased generation of urban waste
- Resilience reduced by natural and human-induced risks, particularly those triggered by climate change
- Unsatisfactory urban economic and social cohesion, especially in slums and informal urban settlements, which is further increased by regional territorial imbalances, resulting in rural migration to large cities that increases urban poverty
- Increased demand for energy, coupled with inefficient use of energy
- Degradation of historic urban areas
- Continued rise in waste generation due to growing population and increased consumption
- Low capacity of local authorities for integrated forms of urban management

4. Addressing climate change as a priority issue for the Mediterranean

- Scientific knowledge and tools on climate change not sufficiently accessible and used for decision-making
- The damage caused by climate change, including extreme events and long-term steady changes, increases in key vulnerable areas and sectors
- Growing trend of greenhouse gas emissions within and beyond the energy sector
- Slow pace in emergence of climate-friendly societies due to limited access to best available technologies and alternative development practices
- Climate change adaptation and mitigation costs largely unmet at national and local levels
- Over-reliance on public funding and state-led initiatives

5. Transition towards a green and blue economy

- Socio-economic inequalities between and within countries and high unemployment in particular for youth and women
- Economic growth that does not take into account environmental and social impacts
- Unsustainable lifestyles based on high resource-consumption patterns and low recycling rates, limited consumer awareness and insufficient product information
- Environmentally-harmful and inefficient production facilities
- Investment flows financing unsustainable facilities and inefficient infrastructure
- Policy uncertainties increasing the risk of investments in green technologies and processes
- Wrong price/market signals and fiscal incentives not valuing intangible and natural capital and externalities
- Inefficient trade markets and cooperation at regional level
- Low level of regional economic competitiveness
- Relatively high dependence on natural resources for economic development

6. Improving governance in support of sustainable development

- Poor capacities for responding to emergencies, and poor understanding of the relationship between population flows and environmental sustainability
- Low level of participation in decision-making at various levels
- Fragmentation of responsibility in different levels of governance and between sectors, and lack of decentralisation
- Lack of coherence and subsidiarity between the different levels of decision-making
- Insufficient planning, management and implementation of existing legal instruments

- Inadequate awareness, education, and research and innovation regarding sustainable development
- Need to advance public trusteeship concepts in the existing instruments for better and more equitable governance and more effective and efficient public participation
- Insufficiency, unavailability and unreliability of scientific knowledge and data

A set of strategic directions has been formulated for each of the six objectives of the Strategy, in order to ensure that the relevant issues are addressed. Table 2 lists the strategic directions for each objective. Due to the cross-cutting nature of the objectives, there are interlinkages between the strategic directions, and the implementation of one strategic direction may synergistically affect the implementation of another. Further strategic directions and actions have been elaborated in Chapter 3, which focuses on ensuring implementation and monitoring of the Strategy.

Table 2. Strategic directions under the objectives of the Mediterranean Strategy for Sustainable Development 2016-2025

Objective	Strategic direction
1. Ensuring sustainable development in marine and coastal	1.1: Strengthen implementation of and compliance with the Protocols of the Barcelona Convention and other regional policy instruments and initiatives supplemented by national approaches
	1.2: Establish and enforce regulatory mechanisms, including Maritime Spatial Planning, to prevent and control unsustainable open ocean resource exploitation
2. Promoting resource management, food production and food security through sustainable forms of rural development	2.1: Promote the sustainable use, management and conservation of natural resources and ecosystems
	2.2: Promote conservation and use of indigenous or traditional plant varieties and domestic animal breeds, value traditional knowledge and practices in rural management decisions
	2.3: Promote networks of ecologically protected areas at national and Mediterranean level and enhance stakeholder awareness on the value of ecosystem services and the implications of biodiversity loss
	2.4: Promote inclusive and sustainable rural development, with a specific focus on poverty eradication, women’s empowerment and youth employment, including equitable and sustainable access to basic local services for rural communities
	2.5: Ensure access of local producers to distribution channels and markets, including the tourism market
3. Planning and managing sustainable Mediterranean cities	3.1: Apply holistic and integrated spatial planning processes and other related instruments, as well as improved compliance with respective rules and regulations, to increase economic, social and territorial cohesion and reduce pressures on the environment
	3.2: Encourage inclusive urbanization and strengthen capacities for participatory and integrated human settlement planning and management
	3.3: Promote the protection and rehabilitation of historic urban areas
	3.4: Promote sustainable waste management within the context of a more circular economy
	3.5: Promote urban spatial patterns and technological options that reduce the demand for transportation, stimulate sustainable mobility and accessibility in urban areas
	3.6: Promote green buildings to contribute towards reducing the ecological footprint of the built environment
	3.7: Enhance urban resilience in order to reduce vulnerability to risks from natural and human-induced hazards including climate change
4. Addressing climate change as a priority issue for the Mediterranean	4.1: Increase scientific knowledge, raise awareness, and develop technical capacities to deal with climate change and ensure informed decision-making at all levels, recognising and protecting the climate adaptation and mitigation services of natural ecosystems
	4.2: Accelerate the uptake of climate smart and climate resilient responses
	4.3: Leverage existing and emerging climate finance mechanisms, including international and domestic instruments, and enhance the engagement of the private and finance sectors
	4.4: Encourage institutional, policy and legal reforms for the effective mainstreaming of climate change responses into national and local development frameworks, particularly in the energy sector
5. Transition towards a green and blue economy	5.1: Create green and decent jobs for all, particularly youth and women, to eradicate poverty and enhance social inclusion
	5.2: Review the definitions and measurement of development, progress and well-being
	5.3: Promote sustainable consumption and production patterns
	5.4: Encourage environmentally-friendly and social innovation
	5.5: Promote the integration of sustainability principles and criteria into decision-making on public and private investment
	5.6: Ensure a greener and more inclusive market that integrates the true environmental and social cost of products and services to reduce social and environmental externalities

6. Improving governance in support of sustainable development	6.1: Enhance regional, sub-regional and cross-border dialogue and cooperation, including on emergency-preparedness
	6.2: Promote the engagement of civil society, scientists, local communities and other stakeholders in the governance process at all levels, in order to secure inclusive processes and integrity in decision-making
	6.3: Promote implementation and compliance with environmental obligations and agreements including through policy coherence based on inter-ministerial coordination
	6.4: Promote education and research for sustainable development
	6.5: Enhance regional capabilities for information management

The strategic directions are complemented by actions to be taken at national and regional levels, which are accompanied by a broad indication of owners, timeframes and indicators. Flagship initiatives are also identified, which demonstrate the vision of the Strategy in an exemplary way; these initiatives are indicative of a regional or (multi) national action that carries significant potential for results, demonstration and visibility.

A set of targets has also been developed for the Strategy, bearing in mind its focus on the interface between the environment and socio-economic development. The main source for the targets was the 2014 proposal of the United Nations Open Working Group on Sustainable Development Goals, and as such, their approval will need to proceed in line with negotiations at the global level. The targets are summarised by objective in Table 3 below and appear in the Strategy under the relevant objective and strategic direction.

Table 3. Targets in the Mediterranean Strategy for Sustainable Development 2016-2025

Objective	Target (the bracketed numbers refer to the targets in the final draft of the outcome document for the United Nations Summit in September 2015 which will adopt the Post-2015 Development Agenda)
1	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on best available scientific information (14.5)
1	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics (14.4)
2	Take urgent and significant action to reduce the degradation and fragmentation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species, and take further action as needed by 2030 (15.5)
3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries (11.3)
3	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse (12.5)
5	By 2025, the majority of Mediterranean countries are committed to green or sustainable public procurement programmes
6	By 2025, two-thirds of Mediterranean countries have acceded to the Aarhus Convention

The Strategy takes as a given the implementation of all national and international obligations, even if it does not explicitly mention them. These include the relevant European Union policies and strategies including the Europe 2020 Strategy and the Roadmap to a Resource-Efficient Europe – for those Parties where these instruments constitute obligations.

The actions proposed are aimed at providing guidance and inspiration, as they summarize the opportunities for developing national actions and regional collaboration within and outside the MAP system for the most effective implementation of the Strategy. It is understood that not all countries may have the necessity or the resources to undertake all the proposed national level actions. It may be preferable, in line with national planning procedures, to adapt the proposed actions to national needs. National actions should therefore serve as a reference framework to help countries design national

policies to implement the strategic directions. For the purposes of the Strategy, which has a focus on the Mediterranean region, sub-national regional authorities are included under the term ‘local authorities’.

Objective 1: Ensuring sustainable development in marine and coastal areas

The objective focusing on “Sea and coasts” sits firmly and historically in the basin approach taken by the MAP and the Barcelona Convention. The 1975 MAP was the first ever regional seas programme under the UNEP umbrella. The Barcelona Convention was adopted in 1976 by the Mediterranean countries and the European Community. Since then various protocols have been adopted under the Convention to help with the protection of the Mediterranean Sea and its coastal regions. The protocols currently cover dumping from ships and aircraft, oil and harmful pollution emergencies, land-based pollution, specially protected areas and biological diversity, pollution from exploitation of the continental shelf, hazardous wastes and, most recently, integrated coastal zone management.¹⁸

The 2005 Strategy established the sea and coastal zones as one of its seven priority fields of action, deeming this priority as essential in making real progress in the sustainable development of the Mediterranean. In the years since its adoption, there have been a number of sub-regional, regional and global developments relevant to this objective, which include:

- **Higher profile for marine issues within sustainable development.** Rio+20 increased the focus on marine issues through its chapter on oceans and seas. In addition, there is increasing recognition of the role of marine areas in economic development, as the concept of the blue economy illustrates. In addition, at the Mediterranean level, the Istanbul Declaration¹⁹ contains a commitment from the Contracting Parties to the Barcelona Convention, “to make the Mediterranean an exemplary model in implementing activities effectively protecting the marine and coastal environment as well as contributing to sustainable development”.
- **Stronger regional policy instruments under the Barcelona Convention.** The adoption (2008) and entry into force (2011) of the Protocol on Integrated Coastal Zone Management in the Mediterranean recognized the importance of an integrated management approach for the sustainable development of coastal zones. In addition, since 2008 the Contracting Parties to the Barcelona Convention committed to apply the ecosystem-based approach – through the Ecosystem Approach Roadmap – to the management of human activities while enabling a sustainable use of marine goods and services, with the view to achieving or maintaining good environmental status of the Mediterranean Sea and its coastal regions, their protection and preservation, as well as preventing their subsequent deterioration.
- **Sub-regional policy development.** The European Union Marine Strategy Framework Directive (2008) and the associated criteria and indicators have become applicable to European Union Member States. In addition, Maritime Spatial Planning (MSP) is recognised as an important tool for integrated planning.²⁰ The European Union Strategy for the Adriatic and Ionian Region (EUSAIR) is also being implemented at sub-regional level, with a pillar focusing especially on Blue Growth²¹.
- **Launch of a regional process in 2008 aiming at the establishment of protected areas in the areas beyond national jurisdiction,** on the basis of joint proposals by neighbouring countries for inclusion in the List of Specially Protected Areas of Mediterranean Importance.
- **Global recognition of Mediterranean marine areas in need of protection, including areas of national jurisdiction and deep sea habitats.** The 12th meeting of the Conference of the Parties to the Convention on Biological Diversity in 2014 listed 15 Mediterranean areas meeting the scientific criteria for ecologically- or biologically-significant marine areas, due to issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction.

Increased realization of the economic value of the open sea and the need for blue growth has promoted an increase in the exploration for and exploitation of non-living open sea resources (e.g. oil, gas) and emphasized the need for robust integrated maritime spatial planning to support sustainable development.²² Therefore the Strategy promotes the blue economy concept through strong partnerships between maritime sectors and public authorities in regard to the sustainable and equitable use of marine areas and resources. In addition, the global momentum behind assessing vulnerabilities and the impacts of climate change and delivering an effective and efficient response has grown rapidly over the last decade, leading to the increased inclusion and mainstreaming of climate change in many sectors associated with coastal and marine areas.

The strategy for marine and coastal areas rest on two pillars:

- Strengthen implementation of and compliance with the Protocols of the Barcelona Convention and other regional policy instruments and initiatives supplemented by national approaches(strategic direction 1.1)
- Establish and enforce regulatory mechanisms, including Maritime Spatial Planning, to prevent and control unsustainable open ocean resource exploitation(strategic direction 1.2).

National actions under strategic direction 1.1 include strengthening implementation of the Barcelona Convention and its additional protocols, with special focus on the Protocol on Integrated Coastal Zone Management, national coastal conservation initiatives, and the Ecosystem Approach Roadmap, as well as delivery of ratified protocols through strengthened national policies and priority actions. These processes, developed in more detail in the strategic direction 6.3 (Governance objective), will be supported by regional and sub-regional roadmaps for delivery of protocols and enhanced coordination, exchange of good practices, including technology and local knowledge transfer. Joint efforts will be initiated for the coastal and marine protected areas in the Mediterranean Sea, including the areas beyond national jurisdiction, as part of the wider efforts to implement the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean region (SAP BIO). The target for this strategic direction is to conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on best available scientific information, by 2020. Supporting the Trust Fund for Mediterranean Marine Protected Areas is highlighted as a flagship initiative.

Strategic direction 1.1: Strengthen implementation of and compliance with the Protocols of the Barcelona Convention and other regional policy instruments and initiatives supplemented by national approaches			
Actions	Owners	Time frame	Indicators
National			
1.1.1. Strengthen the implementation of the Barcelona Convention and its Protocols and other regional policy instruments, through enhanced prioritization and results-based management through ministries with environmental and budget portfolios and implementing line agencies.	National governments, local authorities, regional institutions, private sector, civil society	Ongoing	Number of ratifications and level of compliance as reported by Contracting Parties Percentage of coastal and marine areas conserved Target: by 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on best available scientific information
1.1.2. Implement the Ecosystem Approach Roadmap to achieve healthy marine ecosystems and conserve marine biodiversity.	UNEP/MAP, national governments	Ongoing	UNEP/MAP ecosystem approach indicators

1.1.3. Transpose the Protocol on Integrated Coastal Zone Management (where ratified) and its Action Plan into national policies and further its implementation.	National governments, local authorities, regional institutions, with the support of UNEP/MAP (PAP/RAC)	2016-2020	Status of implementation of articles of the Protocol
1.1.4. Support national coastal conservation initiatives and strengthen or develop specific national laws for conservation of coastal areas, building on concepts such as public trusteeships.	National governments	Ongoing	Number of initiatives and legal instruments addressing specifically coastal conservation
1.1.5. Create or strengthen delivery nodes for ratified protocols through national prioritization and policy strengthening.	National governments	2016-2020	List of delivery nodes per Contracting Party
1.1.6. Implement the Regional Programme of Work for Coastal and Marine Protected Areas in the Mediterranean, including areas beyond national jurisdiction, and its related roadmaps.	Regional institutions, national governments	Ongoing	Progress on implementation of the Regional Programme of Work for Coastal and Marine Protected Areas in the Mediterranean
1.1.7. Implement the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean region (SAP BIO), and its related national action plans.	SPA/RAC in cooperation with regional institutions, national governments, civil society	Ongoing	Status of implementation of SAP BIO and its related national action plans
Regional			
1.1.8. Improve regional and sub-regional coordination, exchange of good practices, including technology and local knowledge transfer.	Regional institutions, national governments, local authorities, civil society, UNEP/MAP	Ongoing	Number of regional meetings on regional and sub-regional coordination on seas and coasts Number of good practice exchange programmes on seas and coasts annually
1.1.9. Develop regional and sub-regional roadmaps, where lacking, for delivery of all Barcelona Convention Protocols in synergy with other regional policy instruments as relevant.	Regional institutions, national governments	2016-2020	Number of roadmaps in place and the status of their implementation
Flagship initiative			
1.1.10. Support the Trust Fund for Mediterranean marine protected areas.	France, Monaco, Tunisia and the other countries	Ongoing	Number of States supporting and/or benefitting from the Fund

In order to address the issues resulting from the unsustainable exploitation of living and non-living marine resources (strategic direction 1.2), the Strategy calls for promotion of the blue economy for a sustainable and equitable use of marine areas and resources. It also highlights the vital need for implementation of the relevant legislation and policy measures at national level, including the requirements of the Barcelona Convention, in particular the Offshore Protocol and its draft Action Plan, and procedures for environmental impact assessment (EIA) and strategic environmental assessment (SEA), with special emphasis on open ocean exploration and exploitation of non-living resources. A regional integrated marine planning process based on the Maritime Spatial Planning approach, integrating SEA, EIA and ecosystem approach principles will support the implementation of the strategic direction. A target under this strategic direction is to effectively regulate harvesting and

end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics, by 2020.

Strategic direction 1.2: Establish and enforce regulatory mechanisms, including Maritime Spatial Planning, to prevent and control unsustainable open ocean resource exploitation			
Actions	Owners	Time frame	Indicators
National			
1.2.1. Promote and support the blue economy concept through strong partnership between maritime sectors and public authorities in regard to the sustainable and equitable use of marine areas and resources.	National governments, regional institutions, UNEP-MAP	On-going	Percentage of contribution of maritime-related activities to the gross national product Coastal livelihoods and economies (element of Ocean Health Index ²³)
1.2.2. Ensure that the necessary regulatory instruments, including strategic environmental assessment and environmental impact assessment, national development guidelines, and exploration and extraction tender criteria are effectively in place, and amend national regulatory framework as required.	National governments, regional institutions	2016-2019	Status of regulatory capacity for open ocean exploitation
1.2.3. Implement relevant legislative and policy measures to control open ocean exploitation within national and regional requirements, including liability regimes.	National governments, regional institutions, private sector	Ongoing	Share of open ocean exploitation projects on which regulatory controls are exercised
1.2.4. Translate the Offshore Protocol (where ratified) and its Action Plan into national policies and further its implementation.	National governments, local authorities, regional institutions, with the support of UNEP/MAP (REMPEC)	Ongoing	Percentage of the goals defined under the Mediterranean Offshore Action Plan achieved (target: 100 per cent of the goals achieved by 2024)
1.2.5. Safeguard the Mediterranean fisheries by ensuring that all fish stocks are being fished sustainably and effectively.	National governments, regional institutions	2016-2020	Conservation status of commercial fish stocks in the Mediterranean Target: by 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
Regional			
1.2.6. Prepare a regional programme on assessment and control regarding open ocean exploration and exploitation of non-living resources, based on the Maritime Spatial Planning approach, and including standards for open ocean	Regional institutions, private sector, with support of UNEP/MAP	2016-2020	Status of regional programme on assessment and control opportunities for open ocean exploitation and exploitation of non-living resources

exploitation compatible with good environmental status.			Number of countries utilizing Maritime Spatial Planning by 2020 and by 2025
1.2.7. Set up process to further the exchange of good practices on control approaches.	UNEP/MAP and other regional institutions, private sector	2020-2025	Status of good practices exchange process

Objective 2: Promoting resource management, food production and food security through sustainable forms of rural development

Rural areas in the Mediterranean are relatively diverse in their history, culture, natural conditions, population density, settlements, economic structure, and human resources and thus require different policy interventions, but share a potential for the establishment of new bases for economic and social development.²⁴

When addressing the use of natural resources in rural areas, attention must be paid to the protection of terrestrial ecosystems, which provide essential goods and services for human development. Those range from food and water to medicinal plants, fuel, timber, and housing materials. The maintenance of the good status and health of those ecosystems is therefore fundamental for both biodiversity conservation and human well-being.

The three objectives of the Convention on Biological Diversity – conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising out of the utilization of genetic resources – reflect the importance of this theme. The Strategic Plan for Biodiversity 2011-2020 sets 5 strategic goals and 20 targets to be achieved by 2020.²⁵ The intention is not only to guarantee the conservation of all biodiversity components, but also to address key socioeconomic aspects, such as poverty reduction, sustainable agriculture, aquaculture and forestry, the needs of women and local communities, traditional knowledge, and public participation.

In the northern Mediterranean countries, there has been agricultural and pastoral land abandonment and reforestation campaigns have been effective, while in southern and eastern Mediterranean countries the pressures on ecosystems remain strong, particularly in North African countries because of the high population pressure on land and water resources, urban sprawl, over-exploitation of forests and overgrazing²⁶; in addition, desertification processes are exacerbated by climate change, causing increased aridity and extreme events (long periods of drought, devastating floods of land and livestock, large cold spells), with strong socio-economic impacts on farmers. In this context, food cooperation among Mediterranean countries is also a main issue as regards the situation of the southern and eastern Mediterranean countries and the existing complementarities between the North and the South.

The Mediterranean agri-food sector consumes significant rural resources and constitutes one of the main drivers of environmental degradation through processes such as desertification of marginal lands and pollution run-off from farming. At the same time the sector is a key player in the conservation of the Mediterranean agricultural landscape and in providing livelihoods and employment. The sustainable management of natural resources, rural development and food production and security are interdependent aspects that ensure the well-being of rural communities and provide significant inputs to downstream industries, from food processing to tourism.

All around the Mediterranean's rural areas, food production and food security are of paramount importance. Given the importance of small and medium-sized farms in the rural areas of the southern and eastern Mediterranean countries and their mobilization of the family workforce, family farms

contribute to food security of farm households and local communities by the supply of domestic markets. Furthermore, the intra-family and intergenerational solidarity prevailing in farm households contribute significantly to the fight against food insecurity and social vulnerability of rural populations. However, access to land is increasingly open to foreign capital and investors without much consideration of the effects on agricultural and rural societies at the local level. The southern and eastern Mediterranean countries are also vulnerable to changes in international agricultural prices due to their high dependence on cereal imports. This context makes agricultural and food security issues particularly sensitive. Furthermore, since the impacts of climate change are likely to include the degradation of agricultural water resources and loss of fertile soils, ensuring food security and rural vitality by adapting agriculture to climate change is also necessary. Indeed small farmers will be directly affected by these impacts, which represent risks in terms of the stability of rural areas. This calls for adaptation strategies and services for agricultural and rural areas, as well as public and private support for those adaptations, such as promotion of agri-environmental practices, alternative agricultural methods, crop diversification, controlling and limiting use of genetically modified organisms, and conservation of water and soil, limiting the consumption of such natural resources.

The Strategy underlines the need for compliance of national legal measures with international and regional commitments to promote the sustainable use, management and conservation of natural resources and ecosystems (strategic direction 2.1). It calls for effective and participatory management of protected areas and exploitation of renewable natural resources for a regulated development in rural areas, including through Environmental Impact Assessment, Strategic Environmental Assessment and permitting processes. The Strategy aims to address the limits to sustainable rural development caused by the unsustainable use of natural resources and ecosystem goods and services, particularly energy, food and water, through improving efficiency. It recommends institutional and legal reforms fostering water cooperation programmes among sectors and cross-borders. The Strategy also suggests adopting policies, regulatory measures and instruments for sustainable exploitation of non-renewable resources and related post-extraction restoration. The target under this strategic direction is to Take urgent and significant action to reduce the degradation and fragmentation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species, and take further action as needed by 2030.

Strategic direction 2.1: Promote the sustainable use, management and conservation of natural resources and ecosystems			
Actions	Owners	Time frame	Indicators
National			
2.1.1. Ensure that legal measures are in place to conserve biodiversity and ecosystem services in line with international and regional commitments.	National governments, civil society	Ongoing	Status of legal measures that are in place to conserve biodiversity and ecosystem services in line with international and regional commitments Target: take urgent and significant action to reduce the degradation and fragmentation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species, and take further action as needed by 2030

<p>2.1.2. Ensure that management processes are in place for protected areas.</p>	<p>National governments, local authorities, regional institutions, civil society</p>	<p>Ongoing</p>	<p>Share of protected areas with management processes in place</p>
<p>2.1.3. Ensure Environmental Impact Assessment, Strategic Environmental Assessment and permitting processes are in place to regulate development in rural areas, as well as monitoring and adaptive management of interventions.</p>	<p>National governments, local authorities, regional institutions, civil society, private sector</p>	<p>Ongoing</p>	<p>Share of contracting parties with permitting processes in place to regulate development in rural areas</p>
<p>2.1.4. Put in place participative cross-sectoral resource management strategies to ensure that renewable natural resources are extracted in ways that do not threaten the future use of the resources, and without exceeding their maximum sustainable yield.</p>	<p>National governments, local authorities, civil society, private sector</p>	<p>Ongoing</p>	<p>Water efficiency index</p> <p>Percentage of water used in sustainable water management practices for agriculture</p> <p>Number of river basins with integrated water resources management schemes in place</p> <p>Share of Mediterranean forests under sustainable management</p>
<p>2.1.5. Achieve a sustainable balance between production of food, use of water and use of energy, through improving energy and water use efficiency, promoting the use of renewable energy sources, as well as through the introduction of institutional and legal reforms.</p>	<p>National governments, local authorities, civil society, private sector</p>	<p>Ongoing</p>	<p>Water use efficiency (domestic, industrial, agricultural)</p> <p>Energy use efficiency</p> <p>Rate of renewable energy used in provision of water and sanitation services</p> <p>Percentage of wastewater treated by country (target is 90 per cent by 2025)</p> <p>Percentage of wastewater reused by country</p>
<p>2.1.6. Develop socio-economic models for national strategic choices for water allocation between agriculture, industry, tourism, and domestic uses, taking into account environmental and social aspects, as well as economic development needs.</p>	<p>National governments, local authorities, civil society, private sector</p>	<p>Ongoing</p>	<p>Economic efficiency per sector for water use</p>
<p>2.1.7. Ensure that extraction and management of non-renewable resources are carried out in ways that minimize environmental impacts, and that permitting systems include post-extraction restoration.</p>	<p>National governments, local authorities, civil society, private sector</p>	<p>Ongoing</p>	<p>Share of contracting parties implementing permitting systems on extractive sectors</p>

2.1.8. Develop action plans for the restoration of land from extractive activities.	National governments, local authorities, civil society, private sector	Ongoing	Status of action plans
Regional			
2.1.9. Develop or strengthen cross border water cooperation programmes.	Regional institutions, national governments, local authorities, civil society, private sector	Ongoing	Participation of countries in cross border integrated water resources management processes

The Strategy aims to promote conservation and use of indigenous or traditional plant varieties and domestic animal breeds, as well as to value traditional knowledge and practices in rural management decisions (strategic direction 2.2). It calls for establishing national seed banks and knowledge repositories and encourages them to engage in regional collaboration. It promotes the valorisation of traditional knowledge and land races, emphasizing the need for supporting their integration in education and training for rural and agricultural practices.

Strategic direction 2.2: Promote conservation and use of indigenous or traditional plant varieties and domestic animal breeds, value traditional knowledge and practices in rural management decisions			
Actions	Owners	Time frame	Indicators
National			
2.2.1. Establish national seed banks and knowledge repositories of indigenous or traditional plant varieties and domestic animal breeds.	National governments, local authorities, agricultural associations and cooperatives, civil society, academia, private sector	2016-2025	Number of seed banks and knowledge repositories in place
2.2.2. Support the integration of traditional knowledge in education and training for rural and agricultural practices at national level.	National governments, civil society, academia, private sector	Ongoing	Share of agricultural training courses that include traditional knowledge
2.2.3. Promote the valorisation of traditional knowledge in rural development funding programmes.	National governments, donor agencies	Ongoing	Number of rural development programmes that include support for traditional practices
Regional			
2.2.4. Establish regional collaboration between seed banks and knowledge repositories around the Mediterranean.	Regional institutions, civil society	2016-2025	Number of seed banks operating in the region

Strategic direction 2.3 focuses on the promotion of networks of ecologically protected areas at national and Mediterranean level, as well as the enhancement of stakeholder awareness on the value of ecosystem services and the implications of biodiversity loss. The pressures on protected areas created by insufficient spatial coverage, planning and management processes call for, at the national level, programmes that strengthen the protection of biodiversity and the actual management of such areas. Legal or financing mechanisms accompany actions that raise awareness on the economic, social and environmental value of ecosystem services. The promotion of national and regional networking processes aims at reuniting directors and managers for enhancing the synergies of their actions. At the regional level, the Strategy supports further networking, as well as the promotion of the new “Green list” initiative agreed between IUCN and IUCN national committees to assess the efficiency and effectiveness of park management bodies created at the IUCN World Parks Congress.²⁷

Strategic direction 2.3: Promote networks of ecologically protected areas at national and Mediterranean level and enhance stakeholder awareness on the value of ecosystem services and the implications of biodiversity loss			
Actions	Owners	Time frame	Indicators
National			
2.3.1. Promote national networking activities for ecologically protected areas with similar and different protection status.	National governments, local authorities, civil society	2016-2019	Number of national networking initiatives for ecologically protected areas
2.3.2. Establish programmes to enhance awareness among local stakeholders on the economic, social and environmental value of ecosystem services and the implications of biodiversity loss for their daily lives.	National governments, local authorities, rural communities, civil society	2016-2020	Number of programmes established to enhance awareness among local stakeholders on the economic, social and environmental value of ecosystem services and the implications of biodiversity loss
2.3.3. Set up financial mechanisms (national funds, payment for ecosystem services, compensations) to support policies ensuring the provision of environmental and social services.	National governments, local authorities	Ongoing	Status of financial mechanisms to support policies ensuring the provision of environmental and social services
Regional			
2.3.4. Promote a regional network of managers of ecologically protected areas building on the experiences of existing initiatives.	Regional institutions	2016-2020	Status of project to promote a regional network of managers of ecologically protected areas
Flagship initiative			
2.3.5. Promote the “Green list” (IUCN World Parks Congress) in riparian states to assess the efficiency and effectiveness of parks managing bodies created.	IUCN-Med and IUCN national committees	Ongoing	Number of countries participating in the “Green list” initiative

The Strategy addresses the social and environmental consequences created by inequalities affecting rural populations, particularly women and youth, by developing skills and opportunities through participatory rural development programmes that take into account traditional knowledge, skills and crafts in order to add value to rural territories and local cultural assets. Strategic direction 2.4 promotes inclusive and sustainable rural development, with a specific focus on poverty eradication. At a national level, policy measures and fiscal arrangements should encourage rural multi-functionality, coupling tourism and agriculture, benefiting to women’s empowerment and youth employment. Such actions should also lead to equitable and sustainable access to basic local services for rural communities. A regional action focuses on international partnerships and networks to build capacity in the promotion of traditional knowledge, skills and crafts, as well as the establishment of capacity development programmes for local communities.

Strategic direction 2.4: Promote inclusive and sustainable rural development, with a specific focus on poverty eradication, women's empowerment and youth employment, including equitable and sustainable access to basic local services for rural communities			
Actions	Owners	Time frame	Indicators
National			
2.4.1. Develop participatory rural development programmes and adapt measures and fiscal arrangements to encourage rural pluriactivity and sustainable economic development of vulnerable rural communities, particularly for the benefit of women and youth, taking into account also the vulnerability of such communities to natural and human-induced hazards, which recognise the multi-functionality of rural areas.	National governments	Ongoing	Number of rural development programmes that include sustainability considerations, including in relation to women and youth Number of rural jobs created in SMEs for young and women Rural poverty rates per country (with women and youth reported separately)
2.4.2. Develop training programmes and businesses to encourage the reviving of traditional skills, arts and crafts in view of the protection and preservation of the local cultural as well as a means to establish economic activities locally.	National governments	2016-2020	Number of participants in the training programmes and businesses established
2.4.3. Prepare action plans to support the development of rural tourism that will alleviate overcrowding in coastal cities and resorts, stimulate the utilization of locally produced products and generate local employment opportunities.	National governments	Ongoing	Number of action plans prepared to support the development of rural tourism
Regional			
2.4.4. Develop international partnerships and networks to build capacity in the promotion of traditional knowledge, skills and crafts, as well as establishment of capacity development programmes for local communities.	Regional institutions	2016-2020	Number of international partnerships established to build capacity in the promotion of traditional knowledge, skills and crafts, as well as establishment of capacity development programmes for local communities

In order to ensure an equitable access of local producers and small scale farmers to distribution channels and markets, including the tourism market (strategic direction 2.5), national programmes supporting agro-ecological and organic technologies will add value to local assets, products, and processes. This will be achieved through the use of innovative products and processes, cooperation schemes, market instruments, marketing plans, and labelling schemes. The Strategy focuses on the added-value of organic, labelled, and conservation agriculture, while controlling and limiting the use of genetically modified organisms. On the demand side, awareness-raising campaigns will be developed in order to sensitise consumers regarding local economic benefits.

Strategic direction 2.5: Ensure access of local producers to distribution channels and markets, including the tourism market			
Actions	Owners	Time frame	Indicators
National			

2.5.1. Undertake actions to improve access of small-scale producers to markets, including tourism markets, through the use of innovative products and processes, cooperation schemes, market instruments, marketing plans and labelling schemes.	National governments, local authorities, civil society, local cooperatives	2016-2020	Number of countries with actions to improve access of small scale producers to markets
2.5.2. Undertake initiatives to raise awareness on environmental, economic and social benefits of consuming local products, including in the tourism sector.	National governments, local authorities, civil society, local cooperatives	2016-2020	Number of countries with initiatives to raise awareness on environmental, economic, and social benefits of consuming local products
2.5.3. Develop and strengthen agriculture based on agro-ecological and organic technologies, including organic, labelled, and conservation agricultures, controlling and limiting the use of genetically modified organisms, with special support to small-scale farmers.	National governments, local authorities, civil society, rural communities, local cooperatives, private sector	On-going	Number of countries with such national actions undertaken

Objective 3: Planning and managing sustainable Mediterranean cities

Although affected by the economic crisis, the urbanization of the Mediterranean population continues at a fast pace, in particular along its southern shores. Two in every three people are already living in the urban areas of Mediterranean countries, which is higher than the world average. By around 2050, the United Nations Human Settlements Programme predicts that the urban population will grow to around 170 million in the countries on the northern shore (140 million in 2005) and to over 300 million to the south and east (151 million in 2005). This fact generates serious challenges: for example, by 2030 some 42 million additional dwellings will be required, mainly in cities.²⁸ In addition, most Mediterranean cities, in particular those located on the coast, are not currently being managed sustainably, particularly in relation to the carrying capacity of those coasts. At the same time, the potential of cities as drivers of innovative and sustainable social and economic change is insufficiently recognized.

Mediterranean cities are insufficiently resilient in terms of coping with natural and human-made risks and hazards. They are also highly energy-dependent, with low shares of renewable energy used, and their productive capacity in terms of renewable energy, urban agriculture and waste recycling is highly underutilized. Waste generation in the region has grown over the last decade, mostly due to a growing population and increased consumption. Waste management needs significant improvement: while three-quarters of waste is collected, most is disposed of in open dumps, which have negative health and environmental impacts. Less than 10 per cent of the waste collected in the Mediterranean region was recycled in 2014.²⁹ In addition, the participation of residents in decision-making on urban matters in many municipalities remains low, as does the level of access to urban services.

Urban growth prospects in the Mediterranean cities point towards an exacerbation of the current challenges: excessive land uptake; more rapid degradation of architectural heritage; aquifer pollution; inefficient waste management; atmospheric air pollution and noise; and the cumulative effect of all these factors on the environment and on human health. On this basis, if actions and initiatives aimed at correcting the impacts of urban territorial, environmental, economic and social imbalances are not taken, Mediterranean societies and ecosystems may suffer serious consequences, particularly in combination with the expected impacts of climate variability and change. Those are likely to impact most strongly the coastal zones of the Mediterranean, where the majority of the population lives in cities.

Sound policies in favor of social and territorial cohesion in rural areas, which are addressed under Objective 2, are also necessary for ensuring sustainable urban development. Urban sustainability is linked to food security and sustainable forms of rural development: poor rural conditions have strong social and political impacts also on cities, as urban areas are largely populated by rural migrants.

Cities are critical for sustainable development in the Mediterranean, because they are engines of economic development, innovation and creativity: the climate friendly cities agenda is an example of the potential of urban areas to contribute to sustainability. For those reasons, a new, sustainable and creative approach to planning and managing Mediterranean urban agglomerations, offering longer-term sustainable solutions, and building on common aspirations and understandings among the relevant stakeholders, is the best hope for the Mediterranean cities' future.

Urban green and blue areas in the city have a multitude of positive environmental and socio-cultural functions: mitigating environmental pressures, improving aesthetics, reducing the urban heat island effect, mitigating flooding, and providing direct or indirect urban ecosystem services. Urban green and blue areas, or 'green and blue infrastructures' are networks of natural and engineered ecological systems providing a diverse range of services to increase the resilience of urban systems. While the simple addition of a green area could have a minor effect on the global city sustainability, and a park planned in an inaccessible area would not satisfy the needs of citizens, while requiring many resources to be managed, the same park could acquire greater value if its resultant overall potential ecosystem services (including water management) are taken into account. Several urban best management practices can be applied in Mediterranean cities. Moreover, urban regeneration projects and new urban settlements may also be planned and designed on the basis of urban best management practices related to multifunctional green and blue infrastructure. This will contribute to the transition to environments which are more resilient to changing future conditions.³⁰

The Strategy addresses pressures on the environment caused by urban sprawl, particularly in coastal areas, where in some cases triggered by tourism development (strategic direction 3.1). The proposed solutions include strengthening the development of small and medium sized towns as focal points for sustainable regional development, and monitoring and control of coastal urbanization and encroachment. The Strategy underlines the need for strong regulations and tools for spatial planning and tourism. It calls for the promotion of blue and green infrastructure, safe and green public open spaces, which will provide urban ecosystem services that will contribute to improved resilience to climate change and variability. This requires use of spatial planning systems, capacity building and sharing of best practices at the national level, as well as the preparation of regional guidelines for planning multi-functional green and blue infrastructures in the Mediterranean. A flagship initiative recommend to promote and implement the "Environment Friendly City" Award, as requested by the Contracting Parties to the Barcelona Convention (COP18, Istanbul Declaration, December 2013).

Strategic direction 3.1: Apply holistic and integrated spatial planning processes and other related instruments, as well as improved compliance with respective rules and regulations, to increase economic, social and territorial cohesion and reduce pressures on the environment

Actions	Owners	Time frame	Indicators
National			
3.1.1. Utilize spatial planning systems to ensure balanced development in urban areas that incorporate measures for infrastructure provision, and land-take reduction where possible, as well as the provision of multifunctional urban green and blue infrastructures, which provide urban ecosystem services that are also important for climate change adaptation.	National governments, local authorities, planning authorities	2016-2025	Number of countries utilizing spatial planning systems for coastal urban development

3.1.2. Ensure that legally-binding instruments for tourism development are put in place for those areas that suffer from tourism pressures, and related real-estate expansion and coastal deterioration.	National governments, local authorities, planning authorities	2016-2025	Legally-binding strategies for tourism development are put in place
3.1.3. Strengthen small and medium-sized towns as focal points for regional development that will reduce population pressures on urban agglomerations, including by ensuring appropriate transport links from major urban centres to medium and small ones.	National governments, local authorities, planning authorities, civil society	2016-2020	Population trends in large, medium and small urban settlements by country
3.1.4. Promote the protection, upgrading and creation of additional public open space that is safe, green and shady, and part of a network of green infrastructure.	National governments, local authorities, planning authorities, civil society	Ongoing	Number of countries and large cities with initiatives to improve public open space Urban public open space per capita (m ² per capita)
Regional			
3.1.5. Monitor coastal urbanization and encroachment at regional level and provide monitoring support to national and local authorities.	Regional and international institutions, national governments, local authorities, planning authorities	2016-2020	Status of projects for the monitoring of coastal urbanization and encroachment at regional level and of projects supporting national and local authorities Number of capacity development and technical assistance projects in relation to the monitoring of coastal urbanization and encroachment at regional level
3.1.6. Establish a regional process to build capacity and share good practices on improving compliance with spatial planning regulations.	Regional and international institutions, national governments, local authorities, civil society	2016-2020	Status of regional process to build capacity and share good practices on improving compliance with spatial planning regulations
3.1.7. Set up a process to prepare regional guidelines for planning multifunctional green and blue infrastructures, and provide opportunities for exchange of related urban best management practices.	Regional and international institutions, national governments, local authorities, civil society, private sector	2016-2020	Blue and green infrastructures (m ² per number of inhabitants) Permeable surfaces (m ² per number of inhabitants)

3.1.8. Identify Mediterranean urban biodiversity hotspots and share experiences on their protection.	International and regional institutions, national governments, local authorities, planning authorities, civil society	2016-2020	Number of countries with identified urban biodiversity hotspots
Flagship initiative			
3.1.9. Promote the “Environment Friendly City” Award approved by COP18 (Istanbul Declaration, December 2013)	UNEP/MAP	On-going	“Environment Friendly City” Award put in place

The Strategy promotes participation of urban populations in planning and decision-making to support sustainable urban planning and management (strategic direction 3.2). In this respect securing the flow of information and enhancing capacities for participation are key, in line with the 2014 Nafplion Declaration on Promoting Territorial Democracy in Spatial Planning.³¹ At the national level, participatory mechanisms will be established, and governance regimes put in place that allow urban jurisdictions to regulate, register and manage land, within a rights-based framework. In addition, planning measures will support the development of urban models upgrading informal settlements within the urban fabric through forward-looking territorial planning. Regional networks of cities will be developed or strengthened, and a sustainable urban toolbox for the Mediterranean (flagship initiative) will be developed in cooperation with these networks. This will help as to ensure that Mediterranean cities are planned cities to be inclusive, safe, resilient and sustainable. A target associated with this strategic direction is to enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries by 2030.

Strategic direction 3.2: Encourage inclusive urbanization and strengthen capacities for participatory and integrated human settlement planning and management

Actions	Owners	Time frame	Indicators
National			
3.2.1. Strengthen urban governance by establishing communication and participatory mechanisms to enhance urban stakeholders’ involvement and engagement in decision-making.	National governments, local authorities, planning authorities, civil society private sector	2016-2020	Number of countries with such communication and participatory mechanisms enshrined in planning legislation Target: by 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
3.2.2. Upgrade informal settlements into cities and anticipate the expected rates of urban growth through more balanced territorial planning and the provision of decent and affordable housing.	National governments, local authorities, planning authorities, civil society	2016-2020	Number of countries with informal settlements integration processes in place People living in informal settlements Urban poverty rates

3.2.3. Put in place governance regimes that allow urban jurisdictions to regulate, register and manage land, within a rights-based framework.	National governments, local authorities, planning authorities, civil society	2016-onward	Number of countries with national legislation providing for free access to coast
Regional			
3.2.4. Develop or strengthen regional networking and partnership programmes between cities and at the city-region level around the Mediterranean to promote knowledge-sharing and capacity building on sustainable cities.	Regional and international institutions, national governments, local authorities, civil society	2016-onward	Number of partnership programmes of networks running in area of sustainable cities Status of UNESCO World Heritage Sites in the Mediterranean countries
Flagship initiative			
3.2.5. Create a sustainable urban toolbox for the Mediterranean, with a view to planning cities that will work for everyone, in order to make them inclusive, safe, resilient and sustainable.	Regional and international institutions, national governments, local authorities, planning authorities, civil society, private sector	2016-2020	Sustainable urban toolbox for the Mediterranean put in place and implemented

The Strategy focuses on the protection and rehabilitation of historic urban centres as a means to retain population and economic activity, against the trend of increased dereliction and marginalization, based on fiscal and planning incentives (strategic direction 3.3). It also focuses on creating opportunities to strengthen local distinctive character both in planning and in project development in order to enhance local attractiveness. This recognises that retaining the distinctiveness of territories has a potential for economic development and competitive advantage. The Strategy recommends developing or strengthening existing networks of historic cities, involving economic players, including the tourism sector and that representing traditional industries. In addition adequate social dwelling provision coupled with fiscal incentives and the rehabilitation of historic centres could enhance the attractiveness of the historic stock in comparison with peripheral urban expansions. At a regional level, networking between historic centres and connecting them to economic activities are promoted as a means to secure viability.

Strategic direction 3.3: Promote the protection and rehabilitation of historic urban areas			
Actions	Owners	Time frame	Indicators
National			
3.3.1. Utilize forms of integrated and sustainable rehabilitation of historic urban centres, building on good practices to maintain the population in historic centres.	National governments, local authorities, planning authorities, civil society, private sector	2016-2020	Population migration between newer and older urban areas by agglomeration
3.3.2. Provide fiscal and planning incentives to utilize and rehabilitate historic urban centres.	National governments, local authorities, planning authorities	2016-2020	Number of countries utilizing fiscal and planning incentives to utilize and rehabilitate historic urban centres

3.3.3. Create opportunities to strengthen local distinctive character both in planning and in project development in order to enhance local attractiveness, as a tool for economic development and enhancing competitive advantage.	National governments, local authorities, planning authorities	Ongoing	Tools created
3.3.4. Provide adequate social housing coupled with fiscal incentives and the rehabilitation of historic centres to enhance the attractiveness of the historic housing stock in comparison with peripheral urban expansions.	National governments, local authorities, planning authorities	Ongoing	Projects of rehabilitation of historic centres
Regional			
3.3.5. Develop or strengthen existing networks of historic cities in the Mediterranean, involving economic players, including the tourism sector and that representing traditional industries.	International and regional institutions, national governments, local authorities, planning authorities, civil society, private sector	2016-2020	Coverage of Mediterranean historic cities in international networks

Solid and liquid waste production and management remain major concerns in many urban regions in the Mediterranean (strategic direction 3.4). The Strategy promotes national measures for implementing innovative waste management solutions, in line with the waste hierarchy: prevention, reduction, reuse, sorting, recycling, recovery, and, as the least preferred option, disposal. It is also a priority to develop behavioural change schemes that will lead to reduction in waste volumes and to develop legal and financial frameworks to support sustainable waste management. At the regional level, an assessment of the effectiveness high-tech and low-tech solutions (flagship initiative), including but not limited to awareness-raising and economic measures that have been implemented, will be carried out with a view to their more widespread utilization in waste reduction efforts. Finally the Strategy also includes a regional action to develop a database of generated and treated waste and related material flows. A target associated with this strategic direction is to substantially reduce waste generation through prevention, reduction, recycling and reuse by 2030.

Strategic direction 3.4: Promote sustainable waste management within the context of a more circular economy			
Actions	Owners	Time frame	Indicators
National			
3.4.1. Implement innovative, integrated and sustainable waste management solutions, in line with the waste hierarchy: prevention, reduction, reuse, sorting, recycling, recovery, and disposal.	National governments, local authorities, civil society, private sector	Ongoing	Percentage of waste treated by treatment type Waste generated by type per country Target: by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

3.4.2. Develop schemes to encourage and educate local communities to change their behaviour with regard to waste.	National governments, local authorities, civil society, private sector	Ongoing	Municipal waste generated
3.4.3. Develop legal and financial frameworks for sustainable waste management.	National governments, local authorities, civil society, private sector	Ongoing	Status of legal and financial frameworks
Regional			
3.4.4. Develop robust database of generated and traded waste and related material flows.	Regional organizations, national governments	2016-2020	Database created and updated
Flagship initiative			
3.4.5. Undertake regional assessments, as well as knowledge exchanges, of high- and low-tech solutions, that have been successfully implemented to achieve waste reduction.	Regional institutions, national governments, local authorities, academia, civil society, private sector	2018-onward	Status of the assessment initiative Waste generated by type per country

Many Mediterranean cities have increased their dependence on private vehicles, an increase that is further aggravated by urban sprawl, leading to pollution, congestion, high economic and social costs and land sealing for traffic management and parking. The Strategy, under strategic direction 3.5, calls for a reduced dependence on private vehicles by developing efficient integrated public transport systems between coastal cities and their functional regions. It recommends also to anticipate future transport needs, to be provided mainly by collective forms of transport, accompanied by economic and regulatory instruments, and increase virtual connectivity. At the regional level, the development of a sustainable transport and mobility framework for the Mediterranean is included.

Strategic direction 3.5: Promote urban spatial patterns and technological options that reduce the demand for transportation, stimulate sustainable mobility and accessibility in urban areas

Actions	Owners	Time frame	Indicators
National			
3.5.1. Put in place spatial planning provisions that reduce the need for personal private mobility.	National governments, local authorities, urban planning authorities, civil society, private sector	Ongoing	Number of countries with spatial planning provisions in place that reduce the need for personal private mobility

3.5.2. Reduce urban traffic congestion and pollution through economic and regulatory instruments promoting low-pollution collective transport systems at the local urban level, maritime public transport (blue ways), multi-modal links, and more sustainable freight transport.	National governments, local authorities, urban planning authorities, civil society, private sector	2016-2020	Number of coastal cities with integrated public transport systems Percentage of the urban population using public transport Number of private vehicle ownership per urban inhabitant
3.5.3. Increase virtual connectivity at least to basic services in order to reduce the need to travel.	National governments, local authorities, urban planning authorities, civil society, private sector	2016-2020	
Regional			
3.5.4. Develop a sustainable Mediterranean transport and mobility framework, taking into account the objectives of the European Union transport policy and other relevant regional initiatives, including guidelines for compact cities, in order to minimize transport and service delivery costs.	Regional institutions, national governments, local authorities, civil society	2016-2020	Status of the sustainable Mediterranean transport and mobility framework

The Strategy promotes green buildings, including the retro-fitting of the existing building stock, to contribute towards reducing the ecological footprint of the built environment (strategic direction 3.6). At a national level, various instruments are to be put in place to construct green buildings and retrofit existing buildings (e.g. institutional and legal arrangements, strategies, support schemes, training programmes, and standards). At a regional level, the Strategy focuses on the development of regional standards, certification and quality frameworks to encourage green buildings suitable for the Mediterranean climate. These regional standards and frameworks will provide guidance to national level efforts to encourage green buildings suitable for the local environment.

Strategic direction 3.6: Promote green buildings to contribute towards reducing the ecological footprint of the built environment			
Actions	Owners	Time frame	Indicators
National			
3.6.1. Put in place institutional and legal arrangements, strategies, support schemes, training programmes and standards to construct green buildings and retrofit existing buildings.	National governments, local authorities, civil society, private sector, professional associations (architects, civil engineers)	2016-onward	Number of countries with green building standards
Regional			

3.6.2. Develop regional standards, certification and quality frameworks to encourage green buildings suitable for the Mediterranean climate.	Regional institutions, national governments, local authorities, civil society, private sector, professional associations	2016-2020	Status of regional standards, certification and quality frameworks for green buildings
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Urban areas, particularly those situated close to the coast, are vulnerable to natural and human-induced disasters and large-scale changes, including climate change. Strategic direction 3.7 focuses on enhancing urban resilience, in order to reduce their vulnerability to risks from natural and human-induced hazards including climate change. Besides the regional measures relating to emergency-preparedness, the Strategy also highlights a number of actions required to be undertaken by cities with regard to resilience. At a national level, climate proofing is addressed in the implementation of programmes increasing urban resilience.. National guidelines for planning of green and blue infrastructure will be prepared, which will also support urban level climate change adaptation plans. The third national action involves the preparation and implementation of action plans to improve urban resilience to natural and human induced risks, including through natural solutions, smart development and awareness-raising. A fourth national action focuses on undertaking a set of integrated measures to support the productivity of cities in terms of energy production, composting and urban and peri-urban agriculture, including through the recognition of such activities as urban land uses and economic activities, ensuring that necessary health safeguards are in place. At the regional level, the Strategy calls for an inventory of local authorities in the region which are developing natural risk response mechanisms.

Strategic direction 3.7: Enhance urban resilience in order to reduce vulnerability to risks from natural and human-induced hazards including climate change			
Actions	Owners	Time frame	Indicators
National			
3.7.1. Ensure urban spatial plans are subject to climate proofing.	National governments, local authorities, urban planning authorities, civil society, private sector	Ongoing	Number of countries that have enacted legal provisions for climate proofing of spatial plans
3.7.2. Develop national guidelines for auditing and planning of green and blue infrastructure, with reference to natural and human-induced risks, including climate change.	National governments, local authorities, urban planning authorities, private sector, civil society	Ongoing	Number of countries that have national risk reduction guidelines for planning of green and blue infrastructure
3.7.3. Prepare and implement action plans, based on prevention, preparedness and response approaches, to improve urban resilience to natural and human induced risks, including through natural solutions, smart development and awareness-raising.	National governments, local authorities, urban planning authorities, civil society	Ongoing	Number of countries with action plans to improve urban resilience to natural and human induced risks-based on prevention, preparedness and response approaches

<p>3.7.4. Undertake a set of integrated measures to support the productivity of cities in terms of energy production, composting and urban and peri-urban agriculture, including through the recognition of such activities as urban land uses and economic activities, while ensuring that necessary environmental health safeguards are in place.</p>	<p>National governments, local authorities, urban planning authorities, civil society, private sector</p>	<p>Ongoing</p>	<p>Number of countries with emergency preparedness plans addressing major installations</p>
Regional			
<p>3.7.5. Set up an inventory of Mediterranean local authorities developing natural risk response mechanisms, including climate change adaptation actions and relevant good practices.</p>	<p>Regional institutions, national governments, local authorities, civil society</p>	<p>2016-2020</p>	<p>Status of inventory of Mediterranean local authorities developing natural risk response mechanisms</p>

Objective 4: Addressing climate change as a priority issue for the Mediterranean

Addressing climate change is a priority for the Mediterranean. As highlighted in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, the Mediterranean region, considered one of the world's major climate change hotspots, is highly vulnerable to the negative impacts of global warming.

Climate variability and change is already becoming increasingly evident in the Mediterranean. In recent decades, warm days and nights, heat waves, extreme precipitation and soil dryness have increased and cold days and nights have decreased. Regarding sea level rise, there are areas in the Mediterranean Sea with current average increases of more than 6 mm/year, but also with decreases of more than 4 mm/year.³² All model projections agree on the region's future warming and drying with potential huge risks and costs to the region's economy, population centres and biodiversity. More specifically, in the Fifth Assessment Report, medium-low emissions scenario (RCP 4.5), the mean surface air temperature in the region is expected to increase by 2-4°C by 2081-2100 compared to 1986-2005 and the mean annual precipitation to decrease by 10-20 per cent. In the worst case scenario, by 2100 the mean temperatures could increase by up to 7.5°C and mean precipitation could decrease by up to 60 per cent. Regarding sea level, an average rise of 0.4-0.5 m is projected for most of the Mediterranean.

Depending on the extent of climatic disruption, the consequences of climate change are expected to worsen already critical situations present in the region. The Mediterranean will face an increased risk of desertification and soil degradation, sea level rise, an increase in the duration and intensity of droughts, changes in species composition, habitat losses, and agricultural and forests production losses, resulting in an increased risk of coastal erosion, infrastructure damage and threatened water and food security. The Middle East and North Africa region, which already has one of the lowest water availabilities per capita world-wide, is expected to be more severely affected. These risks all have social and human impacts related to increased vulnerability, particularly for the groups already living in poor conditions. In addition, given the inherent physical characteristics of small islands, which are emblematic of the Mediterranean Sea, the Fifth Assessment Report reconfirms their high level of vulnerability to climate stressors.

The contribution of the region to global greenhouse gas emissions varies considerably, with the European Union countries of the Mediterranean contributing to a much greater extent to global greenhouse gas emissions than the southern rim countries. Nevertheless, carbon footprints are increasing steadily in southern Mediterranean countries as well, which highlights the need to mitigate climate change. In particular, the energy sector, accounting for 85 per cent of greenhouse gas emissions in the Middle East and North Africa region³³, and the transport sector play a crucial role in mitigation efforts.

In the Mediterranean Strategy for Sustainable Development 2005-2015 a range of actions were recommended to address common adaptation and mitigation challenges. Other climate change-related initiatives have followed, in particular the Union for the Mediterranean Expert Group on Climate Change, with a mandate to provide a multilateral and multi-stakeholder platform for exchange of information, best practices, and opportunities for cross-border cooperation.

However, progress towards a green, low-carbon and climate-resilient Mediterranean region remains limited and constrained by a number of issues and barriers that still need to be addressed. Scientific knowledge, data and information from research and monitoring systems remain insufficiently developed and shared. When such information resources have been developed, they are often not easily utilisable in decision-making processes. Moreover, even when information is utilisable, it is often not used. Awareness of the co-benefits of climate change policies for economic development is low, which hampers their implementation. Regional cooperation efforts are scattered and would benefit from better coordination. Persistent market distortions and substantial financing and technology gaps across the region limit the shift towards more climate-friendly development models,

especially in the area of renewable energies and energy efficiency. In addition, public participation, the involvement of the private and finance sectors, and the capacity to benefit from international funding mechanisms need to be fostered.

Adapting to climate change is as important as addressing its root causes. The Mediterranean countries need to identify and develop a regional approach to climate change adaptation, with common regional priorities in order to increase the resilience of the Mediterranean to climate change. This is the main purpose of the Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Zones, which is currently being developed by UNEP/MAP. This framework will assist stakeholders and policy makers at all levels across the Mediterranean in order to: (i) promote appropriate institutional and policy frameworks, increase awareness and stakeholder engagement and enhance capacity building and cooperation; (ii) Identify, assess and implement best practices (including low regret measures) for effective and sustainable adaptation to climate change impacts; (iii) promote leveraging of existing and emerging finance mechanisms relevant to climate change adaptation, including international and domestic instruments; (iv) promote better informed decision-making through research and scientific cooperation and improved availability and use of reliable data, information and tools.

The Mediterranean region is at a crossroads with regard to climate change and development. If left unaddressed, climate change will pose a serious risk to economic growth and may jeopardize achievement of the Sustainable Development Goals in most Mediterranean countries. Climate change is no longer considered an environmental or scientific issue but rather a developmental challenge that requires urgent and dynamic policy and technical responses at the regional, national and local levels. Adaptation is not only about responding directly to the impacts of climate change but also about addressing wider sources of existing vulnerabilities. Mitigation is not only about avoiding dangerous climate change but also an opportunity to re-orientate the way natural resources are used, in more sustainable directions.

Climate change policies need to be based on sound scientific knowledge and data, coupled with awareness raising and technical capacities to ensure informed decision-making at all levels, recognising and protecting the climate adaptation and mitigation services of natural ecosystems (strategic direction 4.1). At a national level, the Strategy focuses on the strengthening of monitoring systems and the establishment of innovative communication programmes with the cooperation of academic institutions, centres of excellence and national and intergovernmental institutions, and also through dedicated education programmes and sensitization campaigns. It also emphasizes assessment and enhancing the climate change adaptation capacity of ecosystems such as coasts, wetlands and forests, as well as their mitigation services, as in the case of forests and marine areas – considering that these actions are often already available without the need for upfront investment. At a regional level, the Strategy promotes a Mediterranean research agenda to be implemented through synergies, data sharing and harmonization, and regional level education through various schemes such as massive open online course (MOOC) programmes on Mediterranean climate change issues and responses. This section contains also a regional action for enhancing regional capacities for climate change monitoring and analysis through multi-country data-sharing agreements and integration of existing climate observation and early warning systems. This calls for the promotion of harmonised indicators and tools for climate change vulnerability and mitigation assessments such as climate risk analysis and adaptation planning under uncertainty, disaster risk management, climate change economic costs, as well as monitoring, reporting and verification of emissions/reductions in greenhouse gases. A flagship initiative focuses on the establishment of a regional science-policy interface mechanism, including the social and behavioural sciences, endorsed by all the Contracting Parties to the Barcelona Convention, with a view to preparing consolidated regional scientific assessments and guidance on climate change trends, impacts and adaptation and mitigation options.

Strategic direction 4.1: Increase scientific knowledge, raise awareness, and develop technical capacities to deal with climate change and ensure informed decision-making at all levels, recognising and protecting the climate adaptation and mitigation services of natural ecosystems			
Actions	Owners	Time frame	Indicators
National			
4.1.1. Upgrade, sustain and expand climate, weather and water monitoring systems.	National governments, government specialized agencies, regional and global institutions, academia	2016-2022	Climate, weather and water monitoring systems in place and operational
4.1.2. Assess, communicate, protect and enhance climate change adaptation capacity of ecosystems such as coasts, wetlands and forests, as well as their mitigation services, as in the case of forests and marine areas. .	National governments, government specialized agencies, regional and global institutions, academia	2016-2022	Number of assessments communicated
4.1.3. Establish national climate clearinghouses to ensure that the relevant knowledge, data and information reach the various types of stakeholders.	National governments, academia, regional and global institutions, private sector	2016-2020	Number of countries with national climate clearinghouses set up
4.1.4. Raise public awareness through environmental education campaigns and ensure climate change is mainstreamed in the formal educational curricula, including through dedicated courses.	National governments, local authorities, regional and global institutions, academia, civil society	Ongoing	Number of countries with environmental education campaigns and courses set up Number of countries where climate change is mainstreamed into educational curricula
Regional			
4.1.5. Promote a Mediterranean research agenda on climate change by encouraging collaborative programmes and networking amongst research centres and universities.	Regional and global institutions, academia, research centres, civil society	Ongoing	Number of collaborative programmes amongst research centres and universities at the regional and sub-regional levels
4.1.6. Enhance regional capacities for climate change monitoring and analysis through multi-country data-sharing agreements and integration of existing climate observation and early warning systems.	Regional and global institutions, academia, research centres, civil society	2016-2022	Number of multi-country data-sharing agreements Number of countries with climate observation and early warning systems

<p>4.1.7. Promote harmonised indicators and tools for climate change vulnerability and mitigation assessments, including climate risk analysis and adaptation planning under uncertainty, disaster risk management, climate change economic costs, as well as monitoring, reporting and verification of emissions/reductions in greenhouse gases.</p>	<p>Regional and global institutions, academia, specialized governmental agencies, civil society</p>	<p>2016-2020</p>	<p>Number of harmonised indicators and tools for climate change vulnerability and mitigation assessments</p> <p>Number of collaborative workshops, and capacity building activities on indicators and harmonisation</p>
<p>4.1.8. Establish regional courses and diplomas; promote e-learning and massive open online course (MOOC) programmes on Mediterranean climate change issues and responses.</p>	<p>Regional and global institutions, academic networks, specialized governmental agencies, civil society</p>	<p>2016-2020</p>	<p>Number of e-learning and massive open online course (MOOC) programmes on climate change</p>
<p>Flagship initiative</p>			
<p>4.1.9. Establish a regional science-policy interface mechanism, including the social and behavioural sciences, endorsed by all the Contracting Parties to the Barcelona Convention, with a view to preparing consolidated regional scientific assessments and guidance on climate change trends, impacts and adaptation and mitigation options.</p>	<p>Regional and global institutions, academic networks, specialized governmental agencies, civil society</p>	<p>2016-2020</p>	<p>Science-policy interface mechanism put in place</p> <p>Status of Mediterranean regional scientific assessment and guidance on climate change trends, impacts and adaptation and mitigation options</p>

Strategic direction 4.2 seeks acceleration in the uptake of climate-smart and climate-resilient responses that can assist in addressing climate change issues. At a national level, a key action to be undertaken is the designing, financing and implementation of national technology investment plans for climate change. At the Mediterranean level, the Strategy promotes climate change adaptation and mitigation knowledge-sharing platforms and support mechanisms aiming at fostering collaborative R&D and innovation programmes between universities, governments and businesses, including start-ups and SMEs. This calls for the utilisation of existing structures within the MAP system to support the dissemination of regional climate knowledge, also hosting a web-based regional climate change clearinghouse mechanism that will contain information on climate change monitoring, research, practical tools and projects. A regional action focuses on the creation of a Mediterranean Climate Technology Initiative, taking advantage of such existing initiatives at the global, European and national levels.

Strategic direction 4.2: Accelerate the uptake of climate-smart and climate-resilient responses			
Actions	Owners	Time frame	Indicators
National			
4.2.1. Design, finance and implement national technology investment plans for climate change.	National governments, regional and global institutions, private sector	2016-2020	Number of countries with national technology investment plans in place
Regional			
4.2.2. Develop regional climate change adaptation and mitigation knowledge-sharing platforms and support mechanisms aiming at fostering collaborative R&D and innovation programmes between universities, governments and businesses, including start-ups and SMEs.	Regional and global institutions, academia, civil society, private sector	2016-2020	Number of regional climate change adaptation and mitigation knowledge-sharing platforms and support mechanisms aimed at fostering collaborative R&D and innovation programmes set up
4.2.3. Create climate change specific funding lines on innovation open to southern and eastern Mediterranean countries under large-scale international programmes (e.g. European Union Horizon 2020, Climate KIC).	Regional and global institutions, national governments, private sector, civil society	2016-2020	Number of funding lines on climate change innovation open to southern and eastern Mediterranean countries
4.2.4. Utilize existing structures within the MAP system to support the dissemination of regional climate knowledge, also hosting a web-based regional climate change clearinghouse mechanism that will contain information on climate change monitoring, research, practical tools and projects.	UNEP/MAP, regional and global institutions, civil society	2016-2020	Status of project disseminating regional climate knowledge
4.2.5. Launch a Mediterranean Climate Technology Initiative in conjunction with the European Union Climate KIC, UNFCCC CTI platform, and Climate Innovation Centre in Morocco (World Bank).	Regional and global institutions, civil society	2016-2020	Status of the Mediterranean Climate Technology Initiative

Strategic direction 4.3 focuses on the leverage of existing and emerging climate finance mechanisms, including international and domestic instruments, and on enhancing the engagement of the private and finance sectors. Financing in support of responses to climate change issues will be mobilised through various instruments including pricing, targeted subsidies, national funds, eco-taxes, concessional interest rates, and others as appropriate, at the national level, while encouraging the shift of public and private spending and consumption habits towards green and climate-friendly practices, processes and products. Conducive legal frameworks are also required. At a regional level, the focus is on assisting countries to strengthen institutional and technical capacities to improve access to international climate funding mechanisms, including non-conventional and innovative funding, and ensure effective delivery of funds.

Strategic direction 4.3: Leverage existing and emerging climate finance mechanisms, including international and domestic instruments, and enhance the engagement of the private and finance sectors			
Actions	Owners	Time frame	Indicators
National			
4.3.1. Set up suitable domestic financial	National	2016-	Number of countries using

instruments to finance the costs of adaptation and mitigation efforts at national level while encouraging climate -friendly investment.	governments, local authorities, private sector	2020	financial instruments to finance the costs of adaptation and mitigation
4.3.2. Establish conducive legal frameworks for leveraging private sector investments and developing partnerships between public and private actors in the delivery of climate change actions.	National governments, civil society, private sector	2016-2020	Number of countries establishing conducive legal frameworks for leveraging public private partnerships on climate change
Regional			
4.3.3. Assist countries and relevant international organizations to strengthen institutional and technical capacities to improve access to international climate funding mechanisms, including non-conventional and innovative funding, and ensure effective delivery of funds.	Regional institutions, national governments, civil society	2016-2020	Share of the Mediterranean Region within international climate funding mechanisms (Carbon finance, Green Climate Fund, Global Environment Facility, etc.)

Strategic direction 4.4 addresses mainstreaming climate change at the legislative and policy levels. It provides a particular focus on measures concerning energy and transport, and delivering sustainable no/low regret adaptation measures across all vulnerable sectors and territories such as coastal and urban areas, water management, agriculture, health, and tourism. The inclusion of climate measures into coastal policies and plans is particularly highlighted. With respect to energy, the Strategy seeks to mainstream climate change through scaling up investments in energy efficiency and renewable energy, promoting universal energy access, reforming energy subsidies, and ensuring that energy projects are assessed for their climate impact. Coordination mechanisms will be reinforced and the effective involvement of local authorities in planning and implementation will be enhanced. At the regional level, the Strategy calls for enhancing national structures and strengthening the implementation of commitments under the United Nations Framework Convention on Climate Change (UNFCCC), as well as implementing high-level regional initiatives including the UNEP/MAP Regional Climate Change Adaptation Framework, and other regional initiatives. The national efforts will be supported by a regional climate change knowledge and innovation centre contributing also to the regional coordination and cooperation.

Strategic direction 4.4: Encourage institutional, policy and legal reforms for the effective mainstreaming of climate change responses into national and local development frameworks, particularly in the energy sector			
Actions	Owners	Time frame	Indicators
National			
4.4.1. Mainstream climate change into national legislation and policies with a focus on measures concerning energy and transport and on delivering no/low regret adaptation measures across all vulnerable sectors and territories such as coastal and urban areas, water management, agriculture, health, and tourism; introduce climate change measures into urban and coastal policies and plans.	National governments, local authorities, civil society, private sector	2016-2018	Status of updated policies and programmes in sensitive sectors and territories fully addressing climate change

4.4.2. Mainstream climate change in the energy sector through scaling up investments in energy efficiency and renewable energy, promoting universal energy access and reforming energy subsidies and ensuring that energy projects are assessed for their climate impact.	National governments, local authorities, civil society, private sector	2016-2018	Percentage decrease in regional greenhouse gas emissions Trends in energy consumption per country Number of countries where climate impact assessment for large-scale energy projects is carried out
4.4.3. Establish designated climate change coordination mechanisms or utilize existing mechanisms within countries involving all relevant stakeholders.	National governments, local authorities, regional and international organizations, academia, civil society, private sector	2016-2018	Number of countries with participatory national coordination mechanisms on climate change in place
4.4.4. Enhance the leadership and capacity of local authorities addressing climate change issues, through twinning and capacity-building programmes and greater access to climate finance.	National governments, local authorities, regional and international organizations, academia, civil society, private sector	2016-2020	Number of countries with leadership and local capacity development programmes addressing climate change issues
4.4.5. Implement and monitor commitments and obligations under the new UNFCCC climate agreement and its future implementation mechanisms.	National governments, local authorities, civil society	2016-onwards	Status of implementation of the commitments and obligations under the new UNFCCC climate agreement
4.4.6. Implement high-level regional initiatives, including the UNEP/MAP Regional Climate Change Adaptation Framework, and other regional initiatives as appropriate.	Regional and international organizations, national governments, local authorities, academia, civil society	2016-2020	Status of implementation of relevant regional climate change strategies and policies
Regional			
4.4.7. Provide policy tools and guidance through the climate change knowledge and innovation centre for enhancing national governance, legal and investment frameworks in terms of climate change strategies and action plans and regional coordination and cooperation.	Regional and international organizations, national governments	2016-2025	Status of project providing policy tools and guidance through the climate change knowledge and innovation centre
4.4.8. Mobilize resources and support for the development of trans-Mediterranean power grids for efficient utilization of renewable energy sources in the region, including solar energy.	Regional organizations, national governments, local authorities, private sector	2018-onwards	Status of initiative towards the development of trans-Mediterranean renewable energy power grids

Objective 5: Transition towards a green and blue economy

Despite being a relatively new concept launched by UNEP, the green economy³⁴ in the context of sustainable development and poverty eradication has attracted much attention from the international community at a time when the financial crisis is seriously affecting socio-economic development. A green economy – called blue economy when applied to the coastal, marine and maritime sectors of the Mediterranean³⁵ – is one that promotes sustainable development whilst improving human well-being and social equity, and significantly reducing environmental risks and ecological scarcities. In other words, a green economy promotes resilient, low-carbon, resource-efficient and socially-inclusive economic development.

A Mediterranean green and blue economy will generate sustainable development and employment through public and private investments, while reducing carbon emissions and pollution, enhancing energy and resource efficiency, and preventing the loss of biodiversity and ecosystem services. The related green investments would be catalysed by targeted public and private expenditure, innovative policy and regulatory changes, awareness, training and research initiatives, innovation and the uptake of new technologies and processes, progressive tax and job reforms, the promotion of sustainable consumption and production patterns in general, as well as by increasing the role of social enterprises. This green development path would maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and a source of public benefits, especially for people whose livelihoods and security depend heavily on natural resources. Indeed, the Arab Forum for Environment and Development, in advocating a development model rooted in a green economy as a sound foundation for addressing the shortcomings of Arab economies, also emphasizes the efficient use and deployment of natural assets to diversify the economy, which in turn provides immunity against the volatilities and recessionary pressures of the global economy.

This objective related to the transition towards a green and blue economy is crucial for the achievement of the Strategy's vision. Besides being about renewable energy, waste management, and sustainable consumption and production, the green economy concept draws on new and emerging paradigms such as the circular economy, the collaborative economy and the functional economy. These new paradigms are likely to illuminate the paths for the necessary decoupling between prosperity and use of resources, and to provide credible responses to the sustainability challenges being faced today. In addition, through its first objective on coastal and marine areas, the Strategy promotes the blue economy concept through strong partnership between maritime sectors and public authorities in regard to the sustainable and equitable use of marine and coastal areas and resources.

The green economy explicitly includes the objectives of job creation and social inclusion, in order to promote a more healthy and just society. The social economy, including cooperatives and the voluntary sector, has an important role to play in the green economy. In addition, the active participation of all relevant stakeholders in the necessary transition would be guaranteed in an efficient, consistent and transparent manner, engaging with local communities and respecting cultural contexts. The link with the Strategy's sixth objective on Governance, another cross-cutting objective, is therefore fundamental in facilitating the transition to the green economy. Making the transition to green development will not be a one-time event. Rather, it must be viewed as a long and demanding process guided both by top-down policy prescription as well as bottom-up public participation. This approach will give the ecological transition the political and social legitimacy needed to ensure the wide-scale mobilization of efforts required.

Addressing socio-economic inequalities between and within countries, owing partly to the high unemployment rate, is a key concern for the green economy. The creation of green and fair jobs for all is therefore critical, in particular for youth and women (strategic direction 5.1). New jobs would be gender-inclusive and provide social solidarity mechanism to workers. The Strategy includes an action to strengthen the role of green jobs in eradicating poverty and enhancing social inclusion through skills assessment and gap analysis for green jobs, which will help develop tailored capacity-development programmes. At an international level, the compilation and dissemination of best practice guidelines,

including harmonised regional definitions, to promote the growth in green jobs and green and social entrepreneurship is envisaged.

Strategic direction 5.1: Create green and decent jobs for all, particularly youth and women, to eradicate poverty and enhance social inclusion			
Actions	Owners	Time frame	Indicators
National			
5.1.1. Undertake a skills assessment and gap analysis, monitor and forecast demand for green jobs to strengthen the role of green jobs in eradicating poverty and enhancing social inclusion.	National governments, local authorities, civil society, private sector	2016-2018	Number of countries undertaking skills assessment and gap analysis on green jobs Number of countries with administrative processes in place for monitoring and forecasting green job demand
5.1.2. Develop training and capacity building programmes for green skills and green jobs, particularly for youth and women.	National governments, local authorities, regional institutions, civil society, private sector, academia	2016-2020	Number of countries with training and capacity building programmes for green jobs
5.1.3. Raise awareness, particularly among decision-makers, about the potential of the green economy transition to promote resilient, low-carbon, resource-efficient and socially-inclusive economic development.	National governments, local authorities, regional institutions, civil society, private sector, academia	2016-2020	Status of projects
Regional			
5.1.4. Compile and disseminate best practice guidelines, including harmonised regional definitions, to promote the growth in green jobs and green and social entrepreneurship.	Regional institutions, national governments, specialised agencies	2016-2020	Status of guidelines and number of related dissemination activities carried out

It has been widely recognized that the standard economic indicators, such as gross domestic product, do not give a full picture of the socioeconomic development of a country and could lead to misinterpretations. New indicators and indices that incorporate environmental and social criteria of progress, such as the Index of Sustainable Economic Welfare and the Human Development Index, will be utilised to support decision-making processes (strategic direction 5.2). A regional open database covering societal progress and well-being, including integrated environmental and economic accounting, and data on the environmental goods and services, as well as state of the environment assessments, will complement national efforts.

Strategic direction 5.2: Review the definitions and measurement of development, progress and well-being			
Actions	Owners	Time frame	Indicators
National			
5.2.1. Embed indicators that are more inclusive of environmental and social aspects of progress, including resource efficiency indicators that take into account national specificities, within statistics databases and environmental assessments.	National governments, academia, civil society, private sector	2016-2020	Number of countries where indicators that are more inclusive of environmental and social aspects of progress are included in the national statistics databases
Regional			
5.2.2. Identify, collect and share in an open database alternative statistics and indicators on societal progress and well-being, including integrated environmental and economic accounting and data on the environmental goods and services.	Regional institutions, national governments, local authorities, civil society, academia	2016-2020	Status of open database with alternative statistics and indicators on societal progress and well-being

Fundamental changes in the way societies consume and produce are indispensable for achieving sustainable development. Therefore the Strategy is complemented by the Sustainable Consumption and Production Regional Action Plan for the Mediterranean, which is currently under preparation. The draft Action Plan highlights four priority areas of consumption and production, namely food, agriculture and fisheries; goods manufacturing; tourism; and, housing and construction.

In the priority area of food, agriculture and fisheries, operational objectives are provided on: the promotion of best environmental practices, technologies and innovation in growing and harvesting; policy and legal frameworks to promote sustainable agriculture, fisheries and food production and consumption; the education of food producers, retailers and consumers; and, support to the development of appropriate market tools and information to promote sustainability.

In the priority area of goods manufacturing, operational objectives are provided on: the integration of best available technologies and practices throughout the value chain of goods production; integrated policy-making and legal framework to promote sustainable consumption, production and recovery, to move towards a circular economy; and, raising awareness of consumers and stakeholders and supporting the development of market structures, increasing the visibility and market share of sustainable and alternative goods and services.

With respect to tourism, the draft Action Plan provides operational objectives addressing: practices and solutions for efficient use of natural resources and reducing the environmental impacts of tourism, respecting the carrying capacities of the destination; regulatory, legislative and financial measures to mainstream sustainable consumption and production in tourism to reduce tourism seasonality and promote local community engagement and empowerment; and, awareness, capacities and skills to support sustainable destinations and green tourism services, and marketing schemes for a competitive and sustainable Mediterranean tourism sector.

Finally, for the priority area on housing and construction, the draft Action Plan provides operational objectives on the following topics: innovation, knowledge and integration of best available technologies and environmental practices for achieving resource efficiency throughout the life cycle of a building; regulatory and legal frameworks to enhance the contribution of housing and construction to sustainable development, social integration and cohesion; and, awareness-raising and capacity-building with stakeholders in urban planning, housing and construction to mainstream sustainable urban development.

Implementation of the action plan, thus the strategic direction 5.3, will be secured through awareness raising programmes on sustainable lifestyles targeting the wider public. Regional capacity building to support countries in implementing the Action Plan is also envisaged.

Strategic direction 5.3: Promote sustainable consumption and production patterns			
Actions	Owners	Time frame	Indicators
National			
5.3.1. Implement the Sustainable Consumption and Production Regional Action Plan for the Mediterranean.	National governments, local authorities, civil society, private sector, academia	2016-2025	Status of implementation of the Sustainable Consumption and Production Regional Action Plan
5.3.2. Undertake awareness-raising programmes on sustainable lifestyles for promoting sustainable behaviour.	National governments, local authorities, civil society	2016-onwards	Number of countries with awareness-raising programmes on sustainable lifestyles
Regional			
5.3.3. Carry out capacity building programme to support countries in implementing the Sustainable Consumption and Production Regional Action Plan for the Mediterranean.	UNEP/MAP, SCP/RAC	Ongoing	Status of capacity-building programme on the implementation of the Sustainable Consumption and Production Regional Action Plan for the Mediterranean

A large part of the pollution in the Mediterranean is due to inefficient industrial processes and poor management of waste. Apart from harming the environment and health, it also jeopardizes the competitiveness and long-term sustainability of industries. Strategic direction 5.4 promotes resource efficiency and eco-innovation as critical tools to allow businesses and economies to be more productive, while reducing cost, waste and use of raw materials. Creating and connecting green and social incubators and training programmes, including through partnerships between universities, businesses and research centres at national and regional scales is also necessary. At a regional level, a Mediterranean network of green and social incubators and training programmes is envisaged. A flagship initiative to create a Mediterranean business award for environmental innovation is also included.

Strategic direction 5.4: Encourage environmentally-friendly and social innovation			
Actions	Owners	Time frame	Indicators
National			
5.4.1. Increase capacity for eco-innovation in the industry and service sectors, through regulatory measures and economic incentives, including to promote market uptake.	National governments, civil society, academia, private sector	Ongoing	Number of countries with regulatory measures and financial incentives supporting eco-innovation in the industry and service sectors Number of countries with programmes to support the market share of green products
5.4.2. Support networks of eco-incubators and clusters for green and social businesses and entrepreneurs.	National governments, local authorities, civil society, private sector	2016-2020	Number of countries with networks of eco-incubators and clusters for green and social businesses and entrepreneurs

5.4.3. Promote and support collaborative partnerships between universities, businesses and research centres.	National governments, local authorities, civil society, academia, private sector	Ongoing	Number of countries with collaborative partnerships between universities, businesses and research centres in place
Regional			
5.4.4. Create a Mediterranean network of green and social incubators and training programmes.	Regional institutions, national governments, local authorities, civil society, private sector	2018-2020	Status of Mediterranean network of green and social incubators and training programmes
Flagship initiative			
5.4.5. Create and promote a Mediterranean business award for environmental innovation.	Regional institutions, national governments	2016-2020	Business award put in place

Misallocation of capital contributes to the development of inefficient, underused and environmentally-harmful infrastructure. The Strategy promotes the integration of sustainability principles and criteria into decision-making on public and private investment through the provision of tools and guidelines (strategic direction 5.5). This is linked to strategic direction 1.2 under the marine and coastal areas objective. The integration of sustainability principles into public procurement at national and local levels and promoting key instruments such as eco-design criteria and the environmental certification of products and services are also envisaged. At the regional level, capacity-building is required, in addition to improved dialogue with international donors for securing the mainstreaming of economic and social criteria in investments.

Strategic direction 5.5: Promote the integration of sustainability principles and criteria into decision-making on public and private investment

Actions	Owners	Time frame	Indicators
National			
5.5.1. Raise the awareness of financial actors on the economic risks arising due to lack of environmental and social impact assessments, encouraging them to mainstream such assessments through the provision of tools and guidelines.	National governments, private sector, civil society	2016-2020	Number of countries with awareness initiatives on the economic risks arising due to lack of environmental and social impact assessments
5.5.2. Promote eco-design criteria and environmental certification of products and services.	National governments, academia, private sector	Ongoing	Number of countries promoting eco-design criteria and environmental certification of products and services
Regional			
5.5.3. Build capacity of national agencies on sustainable investment and corporate social responsibility, including corporate environmental responsibility.	International institutions, national governments and agencies, private sector	2016-2020	Status of capacity building programmes for national agencies on sustainable investment and corporate social responsibility

5.5.4. Initiate or strengthen dialogue with international funding institutions with a view to obtaining a commitment regarding the use of environmental and social criteria for investments.	International institutions, national governments, private sector	Ongoing	Status of dialogue with international funding institutions on the use of environmental and social criteria for investments
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Environmental and social externalities are often not sufficiently addressed by markets and policies, creating misleading price signals and incentives for business-as-usual practices linked to a high-carbon economy. Within the framework of existing global initiatives, the Strategy promotes a greener and more inclusive market in the region (strategic direction 5.6) by integrating the polluter-pays principle, extended producer responsibility and payment for ecosystem services based on economic valuation. The Strategy includes an action to carry out reviews on the environmental impacts of public subsidies with a view to the phasing out of environmentally-harmful subsidies. At a regional level, capacity building in market instruments is envisaged, as well as an action to promote trade cooperation between countries, with a focus on moving towards more upmarket goods and services and sharing added value. Finally, a flagship initiative focuses on the integration of sustainability principles into public procurement at national and local levels. A target associated with this strategic direction is for the majority of the Mediterranean countries to commit to green or sustainable public procurement programmes by 2025.

Strategic direction 5.6: Ensure a greener and more inclusive market that integrates the true environmental and social cost of products and services to reduce social and environmental externalities			
Actions	Owners	Time frame	Indicators
National			
5.6.1. Promote environmental tax reform to reduce tax on labour and integrate the polluter-pays principle and extended producer responsibility into finance policy.	National governments	2016-2020	Number of countries undertaking environmental tax reform
5.6.2. Carry out reviews on the environmental impacts of public subsidies with a view to the phasing out of environmentally-harmful subsidies.	National governments, local authorities	2016-2025	Share of sustainable public procurement
Regional			
5.6.3. Provide assistance to countries interested in integrating the polluter-pays principle, extended producer responsibility and payments for ecosystem services into national finance policies.	International institutions, national governments, private sector	Ongoing	Status of advisory programme on integrating the polluter pays principle and extended producer responsibility into national finance policies
5.6.4. Promote trade cooperation between countries, to contribute towards sustainable and more inclusive economic development and job creation, with a focus on moving towards more upmarket goods and services and sharing added value.	International institutions, national governments, private sector	Ongoing	Number of “green” companies identified in the Mediterranean coproduction Observatory.
Flagship initiative			
5.6.5. Integrate sustainability principles into public procurement at national and local levels.	National governments, local authorities	2016-2025	Share of green or sustainable public procurement Target: by 2025 the

			majority of Mediterranean countries are committed to green or sustainable public procurement programmes
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Objective 6: Improving governance in support of sustainable development

Governance is a cross-cutting objective, relevant to each of the other objectives of the Strategy. This objective focuses on improving environmental governance at the national level, while aspects of governance related to the implementation of the Strategy are addressed in Chapter 3. Governance is characterized by the inclusion of non-state actors in the decision-making process, such as civil society, private sector, and international organizations. This also involves new forms of cooperation arrangements, either at a national or at a transnational level, such as public-private partnerships. Consequently, there is multi-level governance, vertically, with increased decentralization of authority at all levels of government, and also multi-polar governance, horizontally, with different parallel yet interlinked rule-making systems. This extends to putting in place multi-stakeholder processes for monitoring policy implementation.

Governance issues in the Mediterranean range from endangered peace in the region, to inequalities among and within countries and weak public engagement, involvement and participation. Challenges for environmental governance include horizontal and vertical (due to lack of subsidiarity) fragmentation of responsibility for the environmental dossier, insufficient, uncoordinated and non-results-based planning, management and implementation, as well as weak human and financial resources in the public sector, particularly at the local level. Finally, inadequate awareness and education, research and innovation, and sharing of knowledge and information, are also environmental governance challenges faced in Mediterranean countries.

Effective and efficient governance requires that participation in decision-making and cooperation to ensure social justice considerations are taken into account. Participation and cooperation need to be strengthened, and more sustainable development opportunities to address inequalities should be found. Governance has to be flexible and adaptive; it should devise new forms of institutions based on discussion and participation, as well as innovative legal conceptions and constructive practices directly related to sustainability governance, taking also into account the new digital world and the opportunities it offers.

Finally, wide variations in the development models of Mediterranean countries do not allow a “one policy for all” approach and therefore emphasis needs to be placed on their specific needs and contexts. Fragmentation of responsibility needs to be addressed through increased policy integration and coordination. Horizontal institutional reforms including, inter alia, legal, administrative and taxation reforms (such as green national accounting, green tax reform) and efforts to fight corruption, are some of the approaches to be considered. The science-policy interface should also be expanded to provide better information for decision-makers and the public.

Strategic direction 6.1 addresses enhanced regional, sub-regional and cross-border dialogue, cooperation, and networking processes, including emergency-preparedness mechanisms. At the national level, the Strategy focuses on preparedness / prevention plans and alert mechanisms in case of (natural and human-made) disasters, as well as adaptive actions. At the regional level, an action to strengthen regional dialogue through cooperation and networking, including on emergency-preparedness is included, along with an action to strengthen regional and sub-regional dialogue and cooperation to better understand the relationship between environmentally-sustainable development and the challenges and opportunities related to population flows.

Strategic direction 6.1: Enhance regional, sub-regional and cross-border dialogue and cooperation, including on emergency-preparedness			
Actions	Owners	Time frame	Indicators
National			
6.1.1. Strengthen preparedness / prevention and cooperation plans and alert mechanisms in case of (natural and human-made) disaster, as well as adaptive actions.	National governments, local authorities, civil society	Ongoing	Number of countries implementing alert mechanisms and cooperation measures for preparedness / prevention in case of disaster
Regional			
6.1.2. Strengthen regional and sub-regional dialogue, cooperation and networking processes, including on emergency-preparedness.	National governments, international institutions, civil society	Ongoing	Progress of key international cooperation initiatives Status of cooperation plans optimizing environmental surveillance of the Mediterranean Sea
6.1.3. Strengthen regional and sub-regional dialogue and cooperation in order to better understand the relationship between environmentally-sustainable development and the challenges and opportunities related to population flows.	International institutions, national governments, local authorities, academia, civil society	2018-2025	Status of dialogue and cooperation programmes aimed at better understanding the relationship between environmentally-sustainable development and challenges and opportunities related to population flows

The Strategy promotes the engagement of civil society, scientists, local communities and other stakeholders in the governance process at all levels, in order to secure inclusive processes and integrity in decision-making (strategic direction 6.2). Public participation is particularly important at the local level, which is the level of government closest to the people, and the level of decision-making where many environment-related decisions are taken. Increased public participation has to be achieved through support for national and local governments and institutions by means of improved legal frameworks and human and financial resources, and has to include skills related to partnership-building, negotiation and conflict resolution. The Strategy also envisages support for and strengthening of the organizational capacity of local, national and regional stakeholders, including voluntary organizations, cooperatives, associations, networks, and producer groups, in terms of legal frameworks and human and financial resources. That will contribute to better decision-making, implementation of policies, plans and projects, and monitoring. At the regional level, accession to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters³⁶ (Aarhus Convention) is encouraged as a flagship initiative. A target associated with this strategic direction is that by 2025, two-thirds of Mediterranean countries will have acceded to the Aarhus Convention.

Strategic direction 6.2: Promote the engagement of civil society, scientists, local communities and other stakeholders in the governance process at all levels, in order to secure inclusive processes and integrity in decision-making			
Actions	Owners	Time frame	Indicators
National			
6.2.1. Set up, where relevant, and strengthen the capacity of national governments and local authorities for public participation in terms of legal frameworks and human and financial resources.	International institutions, national governments, local authorities, academia, civil society	Ongoing	Number of countries with legal provisions in place for public participation in decision-making that affects the environment
6.2.2. Support and strengthen the organizational capacity of local, national and regional stakeholders in terms of legal frameworks and human and financial resources.	International institutions, national governments, local authorities	2016-2020	Number of countries with legal frameworks in place for regulating voluntary organizations
Flagship initiative			
6.2.3. Encourage the adoption and implementation of the Aarhus Convention on Public Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.	International institutions, national governments, local authorities, civil society	2016-2020	Number of countries adopting the Aarhus Convention Target: by 2025 two-thirds of Mediterranean countries have acceded to the Aarhus Convention

The Strategy promotes implementation and compliance with environmental obligations and agreements to guide actions at national and regional levels (strategic direction 6.3). It highlights the importance of ensuring policy coherence, based on mechanisms for inter-ministerial coordination and cross-sectoral planning. The Strategy promotes the implementation of the precautionary principle through instruments such as environmental impact assessments and strategic environmental assessments. It encourages the support, through legal provisions where relevant, of partnerships in planning and implementation, including but not limited to private sector involvement, public-private partnerships, and innovative financing at regional (subnational) and/or local level. A flagship initiative is included to develop capacity-building programmes on issues related to implementation and compliance with environmental obligations and agreements, including environmental impact assessments and strategic environmental assessments.

Strategic direction 6.3: Promote implementation and compliance with environmental obligations and agreements including through policy coherence based on inter-ministerial coordination			
Actions	Owners	Time frame	Indicators
National			
6.3.1. Ensure ratification, compliance and implementation of global and regional agreements related to environmental sustainability, to guide actions at national and regional levels.	International institutions, national governments, local authorities, academia, civil society	Ongoing	Global and regional agreements related to environmental sustainability adopted by the Mediterranean countries
6.3.2. Ensure the adoption of the precautionary principle and its application by undertaking environmental impact assessments, strategic environmental assessments and other relevant procedures.	National governments, local authorities, academia, civil society, private sector	2016-2025	Number of countries with application of environmental integrated assessment and strategic environmental assessment in development policies

6.3.3. Enhance policy coherence through inter-ministerial coordination and cross-sectoral planning.	National governments, local authorities, civil society	2016-2025	Number of countries with inter-ministerial coordination mechanisms
6.3.4. Encourage and support, through legal provisions where relevant, partnerships in planning and implementation, including but not limited to private sector involvement, public-private partnerships, and innovative financing at regional (subnational) and/or local level.	International institutions, national governments, local authorities, academia, civil society, private sector	2016-2025	Number of countries with partnership initiatives in planning and implementation at regional (subnational) and/or local level
Flagship initiative			
6.3.5. Develop capacity building programmes on issues related to implementation and compliance with environmental obligations and agreements, including environmental impact assessments and strategic environmental assessments.	International institutions, national governments, local authorities, academia, civil society, private sector	2016-2020	Number of countries where capacity development programmes developed on issues related to implementation and compliance with environmental obligations and agreements are put in place

The Strategy promotes education and research for sustainable development (strategic direction 6.4), in particular through the implementation of the Mediterranean Strategy on Education for Sustainable Development³⁷. The aim of the latter Strategy is to encourage Mediterranean countries to develop and incorporate education for sustainable development into their formal education systems, in all relevant subjects, and in non-formal and informal education. The objectives of this Strategy focus on the following aspects of education for sustainable development: policy, legislation and other regulatory and operational support frameworks; promotion through formal, non-formal and informal learning; equipping educators with the competence to include sustainable development in their teaching; accessible and adequate tools and materials; research and development; and, cooperation at all levels, including exchange of experience and technologies within the region.

The Mediterranean Strategy for Sustainable Development also includes an action to strengthen research capabilities in the area of sustainable development, as well as the science-policy interface. Management of protected areas is highlighted as a particular subject where skills need to be upgraded. At the regional level, the Strategy underlines the value of large-scale programmes (e.g. European Union Horizon 2020) to promote sustainable development research and innovation, and the importance of encouraging and supporting partnerships amongst countries. It promotes also the exchange of good practices and knowledge in all aspects of education and learning for sustainable development.

Strategic direction 6.4: Promote education and research for sustainable development			
Actions	Owners	Time frame	Indicators
National			
6.4.1. Implement the Mediterranean Strategy on Education for Sustainable Development, which promotes the integration of the principles, values and practices of sustainable development into all aspects of education and learning.	Regional institutions, national governments, local authorities, civil society, academia and educators	Ongoing	Status of implementation of the Mediterranean Strategy on Education for Sustainable Development Number of countries that have launched national strategies on education for sustainable development

6.4.2. Strengthen knowledge and research capacity at the national level, through long-term provision of training opportunities, particularly in the specialised professions, transfer of knowledge and research infrastructure development.	International institutions, national governments, local authorities, educational and scientific communities, private sector, and civil society	2016-2025	Number of countries with such initiatives Percentage of gross domestic product spend on research
6.4.3. Strengthen the science-policy interface, to support decision making by scientific analysis and data, through research fora, seminars, and other opportunities for exchange.	International institutions, national governments, local authorities, academia, civil society	Ongoing	Number of countries with science-policy dialogue processes
6.4.4. Provide professional and vocational training for the management of protected areas.	International institutions, national governments, local authorities, academia, civil society	Ongoing	Number of countries providing professional and vocational training for the management of protected areas
Regional			
6.4.5. Promote research and innovation by ensuring that large-scale programmes (e.g. European Union Horizon 2020) take into account Mediterranean priorities for sustainable development.	International institutions, academia, civil society	2016-2025	Number of such programmes embedding Mediterranean priorities for sustainable development European Union Research and Innovation Funding allocated to research entities in Mediterranean countries Share of projects addressing Mediterranean issues
6.4.6. Encourage and support partnerships amongst countries and the exchange of good practices and knowledge in all aspects of education and learning for sustainable development.	National governments, local authorities, academia		Number of partnerships for the exchange of good practice on education for sustainable development

Strategic direction 6.5 addresses regional capabilities for information management. In order to allow for appropriate knowledge-based decision- and policy-making, national information centres will be established, which will collect existing and new information. Joint knowledge-creation and knowledge-sharing initiatives with stakeholders, including the scientific community, the private sector and civil society are envisaged, which follow the European Union's Shared Environmental Information System principles on data-sharing. At the regional level, capacity-building on data and information production and sharing and the coordination of national monitoring programmes are included. A flagship initiative is also envisaged to establish a publicly-accessible Mediterranean integrated information system, through which synergy is established between national governments, international institutions and the private sector, to collect and transparently display information on the state of the environment and the status of delivery on the protocols to the Barcelona Convention. This

will draw on data and support systems already in place, for example that supporting the implementation of Horizon 2020.

Strategic direction 6.5: Enhance regional capabilities for information management			
Actions	Owners	Time frame	Indicators
National			
6.5.1. Establish or strengthen support for data monitoring processes, including through survey information, as well as national centres providing integrated and publicly-accessible information.	National governments, regional institutions, civil society, private sector	Ongoing	
6.5.2. Foster joint knowledge-creation and knowledge-sharing initiatives between stakeholders that respect the European Union's Shared Environmental Information System principles on data sharing.	International institutions, national governments, and local authorities, academia, civil society	2016-2020	Number of countries with such initiatives
Regional			
6.5.3. Develop capacity on data and information production and sharing and enhance technology where necessary to create comparable and compatible data.	Regional institutions, national governments, academia	2016-2025	Cooperation and networking activities carried out
6.5.4. Coordinate national monitoring programmes at the regional level, including through annual workshops.	Regional institutions, national governments	Ongoing	Cooperation, networking and joint monitoring activities carried out
Flagship initiative			
6.5.5. Establish a publicly-accessible Mediterranean integrated information system through a triumvirate of national governments, international institutions and the private sector to collate and transparently display information on the state of the environment.	UNEP/MAP, regional institutions, national governments, civil society, academia, private sector	2016-2025	Status of integrated information system project

3. ENSURE THE IMPLEMENTATION AND MONITORING OF THE MEDITERRANEAN STRATEGY FOR SUSTAINABLE DEVELOPMENT 2016-2025

The implementation of the Mediterranean Strategy for Sustainable Development 2016-2025 is a collective process. Although facilitated by the MAP system, it is the participation and active role of all stakeholders that will play a decisive role in its delivery.

The MAP system, which includes the UNEP/MAP Secretariat and the Regional Activity Centres, as well as the Mediterranean Commission on Sustainable Development, will provide leadership and guidance with respect to implementing the Strategy. Indeed the main UNEP/MAP action plans formulated with a view to implementing the Protocols to the Barcelona Convention as well as other key existing regional mechanisms and instruments are essential tools for the implementation of the Strategy (Box 2). In addition to these essential tools for implementation, the MAP system will provide support and technical guidance to the Contracting Parties to the Convention, as well as the coordination of implementation actions and monitoring processes. In addition, the MAP system provides a platform for the exchange of relevant information, experience and synergies developed at regional or sub-regional level.

The Mediterranean Commission on Sustainable Development is a key structure within the MAP system for supporting the development and implementation of the Strategy. As a central point of reference and bringing together representatives of the Parties and stakeholders involved with sustainable development, it will work closely, supported by the UNEP/MAP Secretariat, with the relevant organizations for the effective implementation of the Strategy. The Strategy represents an organising framework for the Commission's work.

The Mediterranean countries are invited to use the Strategy as a starting point for better integration of sustainable development into their national policies. The Strategy provides them with tools to integrate sustainable development into their national policies and build horizontal synergies between different government sectors and vertical synergies between different levels of government, from local to central and vice-versa. That will allow for better coordination and integration of policies around the objective of sustainability.

Intergovernmental and regional and sub-regional institutions also have a very important role to play in the implementation of the Strategy. As mentioned in chapter 1, there are already a number of regional and sub-regional institutions with strategies and actions aimed at supporting sustainable development in the Mediterranean region, as well as addressing significant environmental challenges. Working in tandem with each other and with the MAP system, as well as facilitating synergies with Contracting Parties using the Strategy as a common platform, they can be critical for successful implementation. They will not only create an important critical mass of significant national and regional players working in a coordinated way towards sustainable development, but will also have a positive effect on using the limited human and financial resources needed for the implementation of joint activities more efficiently. For these partners, the Strategy represents a coherent and integrated set of priority strategic directions and actions that need to be implemented to achieve sustainable development in the region, in which their actions and objectives are placed within an overall framework.

The private sector is a key partner for the implementation of the Strategy. As a key player in the emerging green economy, the private sector can be one of the strongest allies in the process of implementing the Strategy. This is not only through corporate social responsibility, but also through more sustainable consumption and production processes that are part of its core business, through the integration of innovative technologies, and through improved upstream and downstream processes of the industrial, artisanal and marketing chains. That will also contribute towards the sustainability of its own operations. For the private sector, the Strategy provides an indication of issues, directions and actions that have to be implemented to further sustainable development goals at regional, national and local level, and the type of discussions that have to be held within the context of sustainable development in the near future. This indication is of prime importance for business planning.

Science is key to success: all action and policy development at the national or regional level must rely on a strong evidence bases. The analytical tools that will allow the forecasting, planning and assessment of sustainable development-related impacts and actions need to be developed with the scientific community, which itself needs to direct its research capacity in support of decision making. For academia, the Strategy contains a series of sustainable development concerns that require assistance from science to understand.

Civil society has always been an important group of stakeholders in the Mediterranean Commission on Sustainable Development. In the implementation of the Strategy, its role becomes more pronounced: besides being a catalyst for supporting and monitoring the implementation process at the regional and national level, civil society can take up important tasks related to awareness and sensitization, as well as acting as the third pillar of democracy, along with decision-makers and judicial entities, to ensure transparency and secure the participation of the people. For civil society, the Strategy contains a set of strategic directions that at once inform its work along with other partners, and provides fertile grounds for the development of projects.

Funding bodies are also key partners for the implementation of the Strategy. For these partners, the Strategy contains a set of widely-agreed regional objectives as well as strategic directions within these objectives, which will help such bodies to position and assess funding proposals aimed at advancing sustainable development in the region.

Box 2: Existing regional programmes and frameworks constituting essential tools for implementing the Mediterranean Strategy for Sustainable Development 2016-2025

- Integrated coastal zone management is recognised as the way forward for the sustainable development of coastal zones and is characterised by a distinctive integrated approach to providing solutions to the complex environmental, social, economic and institutional problems of the coastal zones. As indicated by Article 2 of the **Protocol on Integrated Coastal Zone Management for the Mediterranean** under the Barcelona Convention, “Integrated coastal zone management means a dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts”. The adoption of this protocol is a fully achieved policy-objective of the initial Mediterranean Strategy for Sustainable Development (2005). Its implementation is supported by the Action Plan 2012-2019.
- The Contracting Parties to the Barcelona Convention committed to apply the ecosystem-based approach – through the **Ecosystem Approach Roadmap** – to the management of human activities while enabling a sustainable use of marine goods and services, with the view to achieving or maintaining good environmental status of the Mediterranean Sea and its coastal regions, their protection and preservation, as well as preventing their subsequent deterioration. They recognize the ecosystem approach as an integrated operational approach for the successful implementation of the Barcelona Convention and its protocols while enhancing sustainable development in the region, as well as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.
- The **Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean** (entered into force in 1999) is implemented through the **Strategic Action Programme for the conservation of Biological diversity in the Mediterranean region** (SAP BIO adopted in 2003). In addition, the extension of the network of Specially Protected Areas of Mediterranean Importance and the adoption and implementation of a Regional Working Programme for the Coastal and Marine Protected Areas in the Mediterranean Sea represent important achievements for the region.
- **The Sustainable Consumption and Production Action Plan for the Mediterranean**, which is under preparation, aims at achieving the shift to sustainable patterns of consumption and production in priority economic sectors while addressing related environmental degradation challenges. It supports the implementation of sustainable consumption and production actions at the regional level and identifies actions to guide the implementation of the sustainable consumption and production at the national level, addressing key human activities which have a particular impact on the marine and coastal environment and related transversal and cross-cutting issues.
- The preparation and adoption by the Contracting Parties of the Barcelona Convention of a **Strategic Action Programme of regional and national activities to address land-based pollution** is one of the major breakthroughs in the Mediterranean countries’ efforts to combat land-based pollution. This action-oriented initiative is implemented under the MED POL Programme - identifying priority target categories of polluting substances and activities to be eliminated or controlled by the Mediterranean countries through a planned timetable for the implementation of specific pollution reduction measures and interventions.
- Entered into force in 2014, the **Marine Litter Regional Plan** is the first regional plan on marine litter under a regional sea convention. It presents measures and operational targets to achieve good environmental status and respective targets on marine litter; develop and implement appropriate policy, legal instruments and institutional arrangements, including solid waste and sewer system management plans which shall incorporate marine litter prevention and reduction measures; raise awareness by the development of education programmes by the Contracting Parties; ensure institutional coordination and close coordination and collaboration between regional, national and local authorities in the field of marine litter; mobilize the producers, manufacturer brand owners and first importers to be more

responsible for the entire life-cycle of the product and also sustainable procurement policies contributing to the promotion of the consumption of recycled plastic-made products; and, identify hotspots and implement national programmes to remove disposal in a sound manner regularly.

- The draft **Offshore Action Plan** includes priority actions and measures for the Contracting Parties to the Barcelona Convention to ratify the Offshore Protocol; designate Contracting Parties' representatives to participate to the regional governing bodies; establish a technical cooperation and capacity building programme; establish a financial mechanism for the implementation of the Action Plan; promote access to information and public participation in decision-making; enhance the regional transfer of technology; develop and adopt regional offshore standards; develop and adopt regional offshore guidelines; establish regional offshore monitoring procedures and programmes; and, report on the implementation of the Action Plan.
- **The Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas**, which is under preparation, aims to increase the resilience of the Mediterranean marine and coastal areas to climate change through the development of a regional approach to climate change adaptation. Once adopted, this framework will form the basis for the development of a detailed Regional Climate Change Adaptation Action Plan.
- **The action programmes of the Union for the Mediterranean:** On launching the Union, the heads of State and Government of Mediterranean countries agreed six priority areas of action, including depollution of the Mediterranean and alternative energies. At its Ministerial Meeting on Environment and Climate change (Athens, 2014), the Union for the Mediterranean affirmed its commitment to accelerate the shift towards sustainable consumption and production patterns and the transition to a green and low-emission economy, among others. The Horizon 2020 initiative aims to depollute the Mediterranean by 2020, by tackling the sources of pollution that account for around 80 per cent of the overall pollution of the Mediterranean: municipal waste, urban waste water, and industrial pollution.
- Endorsed at the Ministerial Conference on Environment and Climate Change of the Union for the Mediterranean, the **Mediterranean Strategy on Education for Sustainable Development** encourages the Mediterranean countries to develop and incorporate education on sustainable development into their formal education systems, in all relevant subjects, and in non-formal and informal education. This will equip people with knowledge of and skills in sustainable development, making them more competent and confident and increasing their opportunities for acting for a healthy and productive life in harmony with nature and with concern for social values, gender equity and cultural diversity.

This final chapter addresses the implementation of the Strategy, focussing on three critical areas:

- institutional structures and processes for the implementation of the Strategy;
- financing the implementation of the Strategy; and,
- monitoring system and regional dashboard on the implementation of the Strategy.

3.1. Institutional structures and processes for the implementation of the Strategy

Putting in place adequate institutional structures is a key priority in providing for effective implementation of the Strategy. The existing management system for the Strategy implementation faces a number of challenges.

One of the major challenges for implementing sustainability strategies in any context is that of complexity. In the Mediterranean there is complexity both in terms of management scales (international, national and local), and in terms of the various competencies of the related international organizations. In addition, in the national context, complexity also arises from the need to coordinate the remits and competencies of the various ministries and regulators at various scales. While there are many established cooperation forums at the international level, cooperation between the various stakeholders, at multiple scales, is not always integrated in the processes and activities relevant for the implementation of the Strategy. Such a complex management system runs the risk of excessive

simplification of activities and lack of harmonization of practical actions to apply sustainability principles. Efficient coordination and capacity building of relevant stakeholders is therefore an urgent requirement for the Strategy implementation. As noted under the Governance objective, timely consultations on proposed contents, which, implemented early enough, would help avoiding misunderstandings, divergent objectives and overlapping of competencies. Consultations that begin at the early stages of policy development are more likely to motivate stakeholders to provide good quality professional contributions. A commitment towards transparency also helps to build trust, which increases the chances of policy, programme and project implementation. This is an area where capacity-building is required.

A second key challenge relates to defining clear policy objectives and the expected results of plans, programmes and projects, and to a lack of tradition to act in accordance with determined objectives. Objectives often lack clear indicators for performance assessment or responsibility for the achievement of results. Capacity-building is also required here.

A third key challenge for implementation relates to the difficulty of successfully integrating economic, social, cultural and environmental objectives when faced with the over-riding expectation that governments achieve immediate economic goals. Related to this is the fact that the environment and social implications of development are often not clearly understood, in particular at national and local scales.

Fourthly, organization building and restructuring for the implementation of sustainable development is often hampered by inadequate institutional system capacity to efficiently carry out duties within the scope of its competencies. Lack of capacities, of human resources and financing sources, at various scales, was identified as a shortcoming by numerous stakeholders in the process of consultations during the review of the Mediterranean Strategy for Sustainable Development.

In the context of the above challenges facing the management system for sustainable development in the Mediterranean region, the following strategic directions and actions are required. In order to improve sustainable development governance it is essential that the right structures are put in place or strengthened, and properly resourced (strategic direction 7.1). At a national level, it is essential to ensure the wide participation of relevant organizations in sustainable development management through the setting up of sustainable development commissions, councils, fora, and networks as appropriate in each national context. These coordination and consultation bodies should serve to achieve wide and high-level political support at national level, particularly with key ministries whose competencies affect or are effected by, sustainable development, including the prime minister, where relevant, and must be supported by adequate human and financial resources.

At a regional level, it is essential that the Mediterranean Commission on Sustainable Development should have its proper funding and its human resources and that MAP's own governance and funding programmes are designed to take into account the need for resources for sustainable development. In this context, the establishment of the Mediterranean Commission on Sustainable Development Secretariat, within UNEP/MAP Coordinating Unit, with at least two employed officers to focus on the Secretariat role and the formulation and implementation of projects related to the implementation of the Strategy, are essential. A second regional action reflects to the need to enlarge the Mediterranean Commission on Sustainable Development to ensure the participation of a larger number of relevant international organizations and stakeholder groups from the Mediterranean region involved in sustainable development processes.

The third regional action under this strategic direction focuses on improving visibility of the Mediterranean Commission on Sustainable Development, particularly within the United Nations system, such as within the Conferences of the Parties to the Barcelona Convention and at the United Nations High-Level Political Forum on sustainable development.³⁸ This would entail the establishment of a ministerial level of action through organization of regular four-yearly sessions dedicated to sustainable development of the Mediterranean at the ministerial level within the framework of the

Conferences of the Parties to the Barcelona Convention. The final action under this strategic direction focuses on ensuring that the Mediterranean Commission on Sustainable Development fulfils its role in promoting the exchange of good practices and networking in areas relevant to its remit.

Strategic direction 7.1: Put in place or strengthen structures for sustainable development implementation at national and regional scale, and ensure their adequate resourcing			
Actions	Owners	Time frame	Indicators
National			
7.1.1. Ensure a wide participation of relevant organizations in sustainable development management at the national level through the setting up of sustainable development commissions, councils, fora, and networks as appropriate.	National governments	2016-2025	Number of national commissions, councils, fora or networks created
Regional			
7.1.2 Improve the impact of the Mediterranean Commission on Sustainable Development in the regional context through strengthening of the administrative and financial support for its operation, in particular by strengthening the UNEP/MAP Coordinating Unit as the Commission Secretariat for it to be able to coordinating the implementation and monitoring of the Mediterranean Strategy for Sustainable Development 2016-2025 and the regular reporting on progress.	UNEP/MAP	2016	Trends in Mediterranean Commission on Sustainable Development resourcing
7.1.3 Enlarge the Mediterranean Commission on Sustainable Development to ensure the participation of a larger number of relevant international organizations and stakeholder groups from the Mediterranean region involved in sustainable development processes.	Steering Committee of the Mediterranean Commission on Sustainable Development, UNEP/MAP	2016	List of Mediterranean Commission on Sustainable Development members by stakeholder group
7.1.4. Improve visibility of the Mediterranean Commission on Sustainable Development, particularly within the United Nations system, such as within the Conferences of the Parties to the Barcelona Convention and at the United Nations High-Level Political Forum on sustainable development, to complement the four-yearly ministerial sessions on sustainable development at the Conference of the Parties to the Barcelona Convention.	Steering Committee of the Mediterranean Commission on Sustainable Development, UNEP/MAP	2016-2020	Number of sessions on sustainable development in the Mediterranean held at Conferences of the Parties to the Barcelona Convention Number of times Mediterranean Commission on Sustainable Development presented at the United Nations High-Level Political Forum on sustainable development

7.1.5. Ensure that the Mediterranean Commission on Sustainable Development fulfils its role in promoting the exchange of good practices and networking in areas relevant to its remit on sustainable development, as well as through appointing ‘champions’ where relevant.	Steering Committee of the Mediterranean Commission on Sustainable Development, UNEP/MAP	Ongoing	Good practice exchanges undertaken Networking activities undertaken
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The second strategic direction in this section focuses on establishing mechanisms for management of sustainable development processes, in particular the Mediterranean Strategy for Sustainable Development 2016-2025, at the regional level (strategic direction 7.2). The actions recommended take on board the understanding that policies and strategies exist within a policy cycle, beginning with policy formulation and continuing with policy implementation and monitoring and then policy review.

The first action under this strategic direction focuses on the need to integrate the role of the Mediterranean Commission on Sustainable Development Secretariat and the implementation and monitoring of the Strategy into the regular MAP programmes of work. A second action concerns the drafting of an implementation plan for the Strategy, which identifies the optimal mechanisms for the participation of national institutional frameworks responsible for sustainable development in the implementation of the Strategy national actions. This implementation plan should include the possibility of achieving voluntary agreements with key stakeholders in the region, thus contributing to the coherence of the common work in the Mediterranean basin towards sustainable development. It should also take into consideration the need to regularly communicate the work on implementation of the Strategy in order to retain momentum.

The third action relates to the need for national guidelines and capacity-building measures to help countries to adapt the Strategy to their national contexts in terms of procedures, resources and organization, particularly in the area of working with stakeholders, inter-ministerial coordination, utilising research and consultancy to inform the writing-up and implementation of national strategies, managing conflicts between national and regional policy frameworks, fundraising, and competencies and skills needed for these tasks.³⁹ This process should determine the national-level modalities regarding how the Strategy objectives and actions may be integrated into national sustainable development strategies, and related sectoral policies.

The fourth action under this strategic direction focuses on the need for a participatory mid-term evaluation based on the first 5 years of data regarding the implementation of the Strategy, based on indicators associated with the actions, as well as the proposed dashboard of Sustainability Indicators. This dashboard will draw on the indicators already selected in connection with the Protocol on Integrated Coastal Zone Management in the Mediterranean and the Ecosystem Approach Roadmap. The Strategy will be reviewed after ten years, taking into consideration global developments, and a new Strategy will then need to be defined by 2025.

Strategic direction 7.2: Establish regional processes for the implementation and monitoring of the Mediterranean Strategy for Sustainable Development 2016-2025			
Actions	Owners	Time frame	Indicators
Regional			
7.2.1 Ensure that the regular programmes of work of UNEP/MAP allocate the necessary resources for leading the implementation and monitoring of the Mediterranean Strategy for Sustainable Development 2016-2025.	Steering Committee of the Mediterranean Commission on Sustainable Development, UNEP/MAP, Contracting Parties to the Barcelona	Ongoing	Human and financial resources allocated to sustainable development within UNEP/MAP system

	Convention		
7.2.2 Prepare an implementation plan for the Mediterranean Strategy for Sustainable Development 2016-2025, which identifies the optimal mechanisms for the participation of national institutional frameworks responsible for sustainable development in the implementation of the Strategy actions at the national level.	UNEP/MAP	2018	Status of development of implementation plan
7.2.3 Strengthen the support of the Mediterranean Commission on Sustainable Development to national systems implementing sustainable development policies with the aim to establish connections between national policies and the objectives of the Mediterranean Strategy for Sustainable Development 2016-2025, by preparing guidelines to help countries adapt the Strategy to their national contexts as well as through capacity-building measures.	UNEP/MAP	2018	Capacity building measures carried out Status of guidelines
7.2.4 Undertake a participatory mid-term evaluation of the Mediterranean Strategy for Sustainable Development 2016-2025 based on the first 5 years of data regarding its implementation, using indicators associated with the actions, as well as the proposed dashboard of Sustainability Indicators.	UNEP/MAP	2022	Status of mid-term review
7.2.5 Review the Mediterranean Strategy for Sustainable Development 2016-2025, issuing a new Strategy for the period 2026-2035.	UNEP/MAP	2023-2025	Status of review New Strategy defined by 2025

3.2. Financing the implementation of the Strategy

Implementation of the Strategy, based on the ambitious but necessary and realistic vision of establishing a sustainable Mediterranean on strong economic and social foundations, needs significant financial resources. The resources for financing the Strategy implementation cannot and should not be expected to come from only one or a few sources. It is, again, a collective effort, through which the sum will be much greater than the addition of the parts, thanks to the synergies developed and economies of scale achieved.

In that sense, the national budgets of the Contracting Parties to the Barcelona Convention, allocating funds for the implementation of strategic targets aligned with the Strategy and the mobilization of resources for participation in regional and sub-regional actions aligned with the Strategy can significantly assist in promoting implementation, while at the same time serving national objectives and policies. The proposed activities within the Strategy are designed in such a way as to allow the Parties to adhere to existing activities, or to develop actions that fit within one or more strategic directions and relevant actions, thus directing national funding for sustainable development in the direction proposed in the Strategy.

Similarly, the coordination between MAP and other regional and sub-regional intergovernmental organizations and development agencies can be streamlined around selected topics and actions of the

Strategy, so that collective support can produce the necessary resources for significant actions in the region. The development of flagship initiatives is aimed at concentrating the efforts of all involved partners and stakeholders on actions that will gain significant impetus, through publicity and promotion, and increased effectiveness through the synergies developed and the focusing of resources on common targets.

The private sector needs to be in a central place in the process. By mobilizing resources for its own research, development and integration of technologies into the production process, and shifting some of the resources invested annually in marketing and promotion activities, it can play a very significant role in critically strengthening the process of implementation. For that purpose, the MAP system, as well as the Contracting Parties to the Barcelona Convention and other stakeholders, such as civil society, need to develop close working relations with the private sector and construct a platform of trust and synergy through which ‘win-win’ collaborations will be established for the implementation of actions in the context of the Strategy.

Strategic direction 7.3 addresses the need to strengthen capacity for financing the Strategy. The first action in this regard relates to the development of a project portfolio drawn from the Strategy to support fundraising activities. The second action relates to the provision of capacity-building workshops on fundraising. In addition, the Strategy recommends the creation of an investment facility for sustainable development implementation in the Mediterranean, involving international financial institutions, development banks, the European Union and bilateral donor agencies. Finally, the Strategy encourages private sector to engage with civil society and foster greater corporate social responsibility.

Strategic direction 7.3: Strengthen capacity for financing the Mediterranean Strategy for Sustainable Development 2016-2025			
Actions	Owners	Time frame	Indicators
Regional			
7.3.1. Build a project portfolio aimed at supporting the implementation of Mediterranean Strategy for Sustainable Development 2016-2025 actions, and associate possible funding sources with the portfolio.	UNEP/MAP	2018	Status of portfolios development Number of projects financed
7.3.2. Provide capacity-building workshops to national governments and stakeholders, as well as sub-regional bodies in fundraising to improve their access to funding.	UNEP/MAP, other regional and international organizations	Ongoing	Workshops undertaken
7.3.3. Create an investment facility for sustainable development implementation in the Mediterranean, involving international financial institutions, development banks, the European Union and bilateral donor agencies.	UNEP/MAP, regional and international organizations, national governments, European Union.	2016-2020	Investment facility put in place
7.3.4. Encourage private sector to engage with civil society and foster greater corporate social responsibility.	National and local governments, planning authorities, private sector, civil society	2016-2020	Numbers of private sector - civil society collaborative initiatives on corporate social responsibility

3.3. Towards a monitoring system and a regional dashboard on the implementation of the Strategy

A comprehensive monitoring system and relevant indicators are necessary for the implementation of the Strategy. The following two requirements must be adequately covered:

1. Monitoring the implementation of the actions recommended in the Strategy: the level of implementation and gaps in the objectives in terms of actions (for example, the number of countries complying with an action);
 2. Monitoring the progress of sustainable development issues: the sustainability dashboard in relation to the objectives in terms of sustainability (for example, reduction in greenhouse gas emissions).
- Both are relevant to monitoring the Strategy, but the indicators and approaches are different.

The first set of indicators is mainly “response indicators” related to the implementation of the actions, as per the tables in the Strategy. The second set of indicators, generally structured according to the DPSIR (Driving forces - pressures - state - impact - responses) framework⁴⁰ related to a systemic analysis of the issues, was used for the 2009 report entitled “State of the Environment and Development in the Mediterranean”.⁴¹ Implementation of the data-sharing principles on the indicators and data related to the monitoring system for the Strategy is needed. That process should be promoted and facilitated by a consistent platform for the exchange of information, experience and synergies, based on the European Union’s Shared Environment Information Systems principles on data sharing.⁴² The selection of the dashboard of sustainability indicators should be the result of a participative collaborative process in which the Mediterranean Commission on Sustainable Development can play an advisory role though a sub-committee of the Commission.

Data and information sharing is facilitated by the Aarhus Convention. The UNEP Live knowledge platform aims to fill the gaps between data providers and consumers.⁴³ The crowd-sourcing of data could complement the institutional data sources generally used in international reporting. The population of the indicators in the Strategy should also mobilize a data revolution for sustainable development⁴⁴ taking into consideration more open data.

Strategic direction 7.4 contains four actions to ensure the regular monitoring of the Strategy, the first being for national governments and regional organizations to support the monitoring process through regular and timely provision of regular data. Although much data is found through international databases, there is also the need for national governments and other stakeholders to provide some information directly. A second action highlights the potential of meetings of the Mediterranean Commission on Sustainable Development to assist with monitoring the implementation of the Strategy through discussions in breakout groups. A third action concerns the need to ensure that the Strategy monitoring systems are built taking into account the existing and planned data-sharing and information systems of the MAP. The final action focuses on the development and population of a dashboard of sustainability indicators for the Mediterranean, with the Mediterranean Commission on Sustainable Development playing an advisory role in the selection process though a sub-committee, as discussed above. The monitoring of the Strategy (dashboard) need to identify new and appropriate indicators for the Mediterranean Sea that integrate the three dimensions of sustainable development, more particularly in relation with livelihoods, trade and other socio-economic issues. Those indicators should take stock of the various global (such as the Ocean Health Index) and regional (such as the UNEP/MAP ecosystem approach indicators) ocean monitoring and assessment efforts underway, including definitions, baselines, data storage and reporting, and data quality and accessibility; that is linking to the proposed Ocean SDG 14 and UNEP messages.⁴⁵

Strategic direction 7.4: Ensure the regular monitoring of the Mediterranean Strategy for Sustainable Development 2016-2025			
Actions	Owners	Time frame	Indicators
National			
7.4.1. Provide regular biannual support to UNEP/MAP in providing data for monitoring the Strategy.	National governments, regional organizations, UNEP/MAP	Ongoing	Status of collection of indicators
Regional			
7.4.2. Ensure the utilisation of the potential of the Mediterranean Commission on Sustainable Development meetings for monitoring the implementation of the Strategy using breakout groups.	Steering Committee of the Mediterranean Commission on Sustainable Development, UNEP/MAP	Ongoing	Number of monitoring sessions held during the Mediterranean Commission on Sustainable Development meetings
7.4.3. Ensure that the Strategy monitoring systems are built taking into account the existing and planned data-sharing and information systems of the MAP.	UNEP/MAP, national governments, regional organizations	Ongoing	Status of monitoring
7.4.4 Develop and populate a dashboard of sustainability indicators for the Mediterranean, with the Mediterranean Commission on Sustainable Development playing an advisory role in the selection process through a sub-committee of the Commission.	UNEP/MAP, Plan Bleu, Steering Committee of the Mediterranean Commission on Sustainable Development	2018	Status of dashboard

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Draft Decision IG.22/3

Mediterranean Offshore Action Plan in the framework of the Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean as amended in Barcelona 1995, herein after referred to as the Barcelona Convention,

Recalling the Protocol concerning the Protection of the Mediterranean Sea Against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil, hereinafter referred to as the Offshore Protocol, adopted in Madrid, Spain in 1994 and entered into force on 24 March 2011;

Recalling also Decisions IG.20/12 of COP 17 (Paris, France, February 2012) and IG.21/8 of COP 18 (Istanbul, Turkey, December 2013) mandating the preparation and completion of the Mediterranean Offshore Action Plan in the framework of the Offshore Protocol;

Conscious that possible significant accidents caused by increasingly intense offshore activities could have long term adverse consequences for the fragile ecosystems and biodiversity of the Mediterranean Sea due to its enclosed nature and special hydrodynamics as well as negative consequences on the economies of the Mediterranean coastal States especially in relation to tourism and fisheries;

Adopts the Mediterranean Offshore Action Plan in the framework of the Offshore Protocol contained in the Annex to this Decision;

Urges the Contracting Parties to take the necessary measures to implement the Action Plan in a timely manner;

Urges all the Contracting Parties that have not yet done so, to ratify the Offshore Protocol, as soon as possible, and adopt legislation for its implementation, and to cooperate to ensure compliance with its provisions;

Requests the Secretariat to provide technical support to the Contracting Parties and mobilize adequate human and financial resources in cooperation with international bodies, including *inter alia* the United Nations Environment Programme (UNEP), the International Maritime Organization (IMO) and the International Seabed Authority (ISA), as well as European institutions and other relevant actors, including the oil and gas industry, to assist Mediterranean coastal States in carrying out the obligations arising from the Offshore Protocol.

ANNEX

**MEDITERRANEAN OFFSHORE ACTION PLAN IN THE FRAMEWORK OF THE
PROTOCOL FOR THE PROTECTION OF THE MEDITERRANEAN SEA AGAINST POLLUTION
RESULTING FROM EXPLORATION AND EXPLOITATION OF THE CONTINENTAL SHELF AND
THE SEABED AND ITS SUBSOIL (OFFSHORE PROTOCOL)**

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PART I – INTRODUCTION

I.1 Secretariat and its Components

Considering the range of expertise required for the implementation of the Action Plan, the Secretariat of the Barcelona Convention, represented by the United Nations Environment Programme – Mediterranean Action Plan Secretariat (UNEP/MAP) (the **Secretariat**) will coordinate the technical support from the relevant Regional Activity Centres (the **Components**) according to their mandates.

The role of the Secretariat and its Components will be primarily one of assistance to the Contracting Parties in enhancing their national capacities and in facilitating the means for regional or sub-regional cooperation.

It is envisaged that there may be several areas of activity within the Specific objectives of the Action Plan which will require a synergy between various Components of the Mediterranean Action Plan (MAP).

I.2. Geographical coverage

The area to which the Mediterranean Offshore Action Plan in the framework of the Protocol for the Protection of the Mediterranean Sea Against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (**the Action Plan**) applies is the area defined in Article 2 of the Offshore Protocol.

I.3. Preservation of rights

The provisions of this Action Plan shall be without prejudice to stricter provisions regulating the management of offshore activities contained in other existing or future national, regional or international instruments or programmes, when considering existing best practices for the development of standards for the Mediterranean region.

I.5. Principles

In implementing the Action Plan, the Contracting Parties shall be guided by the following principles:

- (a) *Integration Principle* by virtue of which offshore activities management under the Offshore Protocol shall be an integral part of the Mediterranean Strategy for Sustainable Development, the Ecosystem Approach (the **EcAp**), other relevant strategies including regional strategies of the Mediterranean Action Plan and shall not conflict with applicable domestic regulations;
- (b) *Prevention principle* by virtue of which any offshore activities management measure should aim at addressing the prevention of any form of pollution resulting from offshore activities;
- (c) *Precautionary principle* by virtue of which where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation;
- (d) *Polluter-pays principle* by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter, with due regard to the public interest;
- (e) *Ecosystem-based approach* by virtue of which the cumulative effects of offshore activities on air, marine and coastal ecosystem services, habitats and species with other contaminants and substances that are present in the environment should be fully taken into account;
- (f) *The principle of public participation and stakeholder involvement*; and
- (g) *Sustainable Production and Consumption principle* by virtue of which current unsustainable patterns of consumption and production must be transformed to sustainable ones that decouple human development from environmental degradation.

PART II – OBJECTIVES

II.1. General Objectives

The Action Plan aims at defining measures which, if applied at regional level and by each Contracting Party within their jurisdiction will ensure the safety of offshore activities and reduce their potential impact on the marine environment and its ecosystem.

These measures shall aim at regional level:

- Setting-up a **governance framework** to support the implementation of the Action Plan and the adoption, enforcement and monitoring of regional standards, procedures and rules;
- Defining commonly agreed **regional offshore standards and guidelines** to be integrated and used at national level; and
- Develop in conformity with EcAp and its relevant indicators a regional commonly agreed **reporting and monitoring** for the Action Plan.

Part II.2 describes the **Specific objectives** which, if achieved, will meet the general objective as set out above. For each specific objective expected outputs are proposed, which will also serve as criteria for indicating the success (or otherwise) of Contracting Parties in meeting the objectives.

The Action Plan is built around **Outputs relating to the Contracting Parties** and to **the Secretariat and its Components**.

The implementation timeframe for this Action Plan is the 1st March 2016 to 31 December 2024.

Appendix 1 provides information on the linkage between the objectives of the Action Plan and the various Articles of and Annexes to the Offshore Protocol as well as a draft budget estimate for the implementation of the Offshore Action Plan.

II.2. Specific Objectives

II.2.1 GOVERNANCE FRAMEWORK

Specific objective 1: *To ratify the Offshore Protocol*

In order that there is a comprehensive legal basis for the exploration and exploitation of the continental shelf and the seabed and its subsoil in the Mediterranean Sea, it is important that Contracting Parties to the Barcelona Convention take the necessary action to ensure that the Protocol for the Protection of the Mediterranean Sea Against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (the **Offshore Protocol**) is ratified and implemented nationally.

Outputs relating to the Contracting Parties

- a) Ratification by all Contracting Parties of the Offshore Protocol, transposition of the Offshore Protocol into national law, and cooperation through the Secretariat to ensure compliance with its provisions¹, and
- b) Review of the effectiveness of the Offshore Protocol.

Outputs relating to the Secretariat and its Components, depending on the availability of resources

¹Mediterranean coastal States shall consider the ratification of the Offshore Protocol and the transposition of its provisions into national law in accordance with domestic relevant practices and legislation.

- a) Provision of advice and technical assistance to Contracting Parties to the Barcelona Convention, which so request; and
- b) Assistance in reviewing the effectiveness of the Offshore Protocol.

Specific objective 2: To designate Contracting Parties' Representatives to participate to the regional governing bodies

At the 18th Ordinary Meeting of the Contracting Parties to the Barcelona Convention, Contracting Parties approved the establishment of the Barcelona Convention Offshore Oil and Gas Group (BARCO OFOG) and adopted its terms of reference (Decision IG.21/8).

Contracting Parties to the Barcelona Convention, with the support of the relevant UNEP/MAP Components will *inter alia* provide, through the OFOG Group and Sub-Groups, technical support and guidance as detailed in section II.2.2, and make recommendations to the Meetings of the Parties to the Offshore Protocol to accomplish its functions as stipulated in Article 30.2 of the Offshore Protocol, and further detailed in Decision IG.21/8.

The OFOG Group is primarily composed of representatives of the Contracting Parties to the Barcelona Convention. In view of the range of expertise required for the various topics covered by the Protocol, several OFOG Sub-Groups could be set-up, as need be. To initiate the implementation of the Action Plan and ensure without delay that the measures and standards necessary to effectively implement the Action Plan are undertaken and developed, the following OFOG Sub-Groups will be established:

- **OFOG Sub-Group on environmental impact** dealing with *inter alia*:
 - Offshore monitoring procedures and programme;
 - Environment impact assessment;
 - Use and discharge of harmful or noxious substances and material;
 - Disposal of oil and oily mixtures and the use and disposal drilling fluids and cutting;
 - Precautions for Specially Protected Areas (SPA); and
 - Removal.

- **OFOG Sub-Group on health and safety** dealing with *inter alia*:
 - Risk assessment;
 - Health Safety measures;
 - Training and certification of operators professionals and crew; and
 - Removal plan.

These Sub-Groups will focus on technical and practical aspects of the Mediterranean Offshore Action Plan, in particular the development of the standards and guidelines referred in Specific objectives 7 and 8.

For the effective implementation of the Action Plan, the Contracting Parties shall ensure appropriate involvement of various stakeholders involving national competent authorities, civil society, private sector, operators, NGOs and other stakeholders as appropriate to implement the measures provided for in the Action Plan and other measures as appropriate.

Outputs relating to the Contracting Parties

- a) Nomination of the National Offshore Focal Point designated by all MAP Focal Point to coordinate at national level activities carried out in the framework of the Action Plan and actively participate in the OFOG Group;
- b) Designation, upon request by the Secretariat, through their National Offshore Focal Point, of the appropriate national entities and/or officials as contact points for each OFOG Sub-Group;

- c) Leadership, on a voluntary basis, of the established Sub-Groups to coordinate with the support of the Secretariat the work assigned to the Sub-Groups; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Participation of the industry and their representatives as observers to the OFOG Sub-Groups;
- b) Enhancement of public awareness through the contribution of IGOs and NGOs with a relevant mandate to the topics discussed in the various OFOG Sub-Groups, through their participation as observers, ensuring an open and transparent process through public consultations;
- c) Establishment of institutional cooperation with various relevant regional and global institutions, initiatives and agreements and, at an operational level, identification and use of possible synergies with ongoing activities of bodies such as the European Maritime Safety Agency;
- d) Publication and update of the composition of the OFOG Group and Sub-Groups on a dedicated website;
- e) Updated list of the National Offshore Focal Points and OFOG Sub-Group Focal Points;
- f) Definition, in consultation with MAP Focal Points, of the roles and responsibilities of UNEP/MAP Components to facilitate the implementation of the Action Plan; and
- g) Identification of the required means including human resources to ensure the implementation of the Action Plan and the support of the relevant UNEP/MAP Components. A draft estimation of the required means is found in **Appendix 1**.

Specific objective 3: To establish a technical cooperation and capacity building programme

According to Article 24 of the Offshore Protocol the Parties shall, directly or with the assistance of competent regional or other international organisations, cooperate with a view to formulating and, as far as possible, implementing programmes of assistance to developing countries. In this regard and with the view to facilitate the implementation of the Action Plan,

Outputs relating to the Contracting Parties

- a) Technical cooperation and capacity building programme endorsed as set in **Appendix 2**; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Integration of the technical cooperation and capacity building programme in the six year programme of activities of UNEP/MAP and its relevant Components and in their biennium programme of work;
- b) Preparation of the corresponding budget for consideration by the Ordinary Meeting of the Contracting Parties to the Barcelona Convention; and
- c) Identification of donors to secure funds required for the implementation of the technical cooperation and capacity building programme.

Specific objective 4: To mobilise resources for the implementation of the Action Plan

The 18th Ordinary Meeting of the Contracting Parties to the Barcelona Convention in 2013 decided that the BARCO OFOG should be financed through extra budgetary resources and requested the Secretariat to identify international bodies that might provide specific sources of financing to assist Mediterranean coastal States in carrying out the obligations arising from the Offshore Protocol. The Meeting further invited the relevant oil and gas offshore industry to assist the Barcelona Convention Offshore Oil and Gas Group (BARCO OFOG), through technical support and financial contributions for the implementation of the program of work that may result from the Mediterranean Offshore Action Plan. In this regards,

Outputs relating to the Contracting Parties

- a) Financial and human resources mobilised to support the implementation of the Action Plan, in particular its provisions related to the OFOG Group, technical cooperation, capacity building and monitoring activities; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Identification of additional donors to secure funds for the implementation of the Action Plan; and

Specific objective 5: To promote access to information and public participation in decision-making

According to the Principle 10 of the Rio Declaration adopted at the United Nations Conference on Environment and Development in 1992, “Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.”

With a view to meeting the specific objective of promoting access to information and public participation in decision-making,

Outputs relating to the Contracting Parties

- a) Template for public information in line with national and regional rules on access to information;
- b) Report to the Secretariat every two years relevant information on the offshore installations within their jurisdiction including, when appropriate, information on their disposal for inclusion in the inventory to be maintained by the Secretariat;
- c) Report to the Secretariat every two years discharges, spills and emissions from offshore oil and gas installations data in accordance with the monitoring programme to be defined by the relevant OFOG Sub-Group; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Support the preparation of the template for public information in line with existing Decisions of the Contracting Parties addressing public access to information and with UNEP's Access to Information Policy;
- b) Development of an online regional system and to be maintained for the purpose of public information sharing;
- c) Publication every two years on a dedicated website of the inventory of installations as well as the discharges, spills and emissions from offshore oil and gas installations data submitted by the Contracting Parties; and
- d) Consolidated report every two years on the discharges, spills and emissions from offshore oil and gas installations data submitted by the Contracting Parties.

Specific objective 6: To enhance the regional transfer of technology

The Offshore Protocol emphasises the need for cooperation and exchange of information concerning research and development (R&D) of new technologies. In order to make the results of R&D activities undertaken in the Mediterranean region better known, the Secretariat shall endeavour to encourage the participation of regional research institutions, scientific project leaders and industry in relevant events. The Secretariat shall also facilitate, through the network of its Focal Points, the exchange of these results amongst the Contracting Parties. In addition, the Secretariat might indicate to its Focal Points the potential fields that call for further R&D in order to encourage more active participation and contribution of the relevant Mediterranean institutions in global efforts in this field. In this regard, a list of potential research topics is presented in **Appendix 3** to this document.

With a view to meeting the specific objective of promoting the participation of the relevant Mediterranean institutions in R&D activities and to facilitate transfer of technology within the region,

Outputs relating to the Contracting Parties

- a) Active participation of the respective scientific and technical institutions, as well as the industry, in R&D activities and programmes related to prevention, response and monitoring of pollution from offshore activities;
- b) Presentation of the results of R&D activities and programmes by their respective national institutions and industry in international fora;
- c) Information on ongoing R&D activities and research needs provided to the Secretariat; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Support in the identification of fields of research in which there is a need for enhancement of the state-of-the-art of offshore pollution prevention, response and monitoring technologies and techniques;
- b) Dissemination and exchange of results of national R&D activities and programmes within and outside the Mediterranean region; and
- c) Participation of national and regional research institutions and industry in the relevant international fora facilitated with a view to making better known the results of R&D activities undertaken in the Mediterranean region.

II. 2.3 REGIONAL OFFSHORE STANDARDS AND GUIDELINES

In accordance with the Specific objective 3 and Article 23 of the Offshore Protocol, as the core substance of the Offshore Protocol aims at establishing common standards and guidelines to harmonise regional practices in the Mediterranean region, Contracting Parties will consider relevant existing standards and guidelines in this field (*vide* REMPEC/WG.34/19/Rev.1), in line with overarching ecosystem-based ecological objectives, EcAp Roadmap and in particular with the Integrated Monitoring and Assessment Programme (IMAP) of UNEP/MAP.

Specific objective 7: To develop and adopt regional offshore standards

Outputs relating to the Contracting Parties

- a) Environmental impact assessment regional standards developed based on existing EIA regional standards taking into consideration requirements referred in Annex IV and other best practices;
- b) Common standards, on the use and discharge of harmful or noxious substances and material, in line with relevant international standards and conventions defining *inter alia* limits and prohibitions at regional level formulated and adopted;
- c) Identification of the required modifications of Annex I, II and III and definition of which chemicals should be covered and not covered by such standards and under which conditions;
- d) Common standards on the disposal of oil and oily mixtures and on the use and disposal of drilling fluids and cutting formulated and adopted, and revision of the limits set in Article 10 and the prescriptions referred in Annex V of the Protocol;
- e) The method to be used to analyse the oil content is commonly agreed and adopted;
- f) Procedures for contingency planning, notification of accidental spills and transboundary pollution established in accordance with the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea;
- g) Special restrictions or conditions for specially protected areas defined and adopted;
- h) Common criteria, rules and procedures for the removal of installations and the related financial aspects adopted;
- i) Common criteria, rules and procedures for safety measures including health and safety requirements adopted;
- j) Common minimum standards of qualification for professionals and crews adopted; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Support the specific OFOG Sub-Groups for the development of the above common standards.

Specific objective 8: To develop and adopt regional offshore guidelines

With a view to facilitate the development and implementation of the appropriate policy, legal instruments and institutional arrangements, in accordance with the adopted regional offshore standards,

Outputs relating to the Contracting Parties

- a) Regional Guidelines on Environmental Impact Assessment;
- b) Regional Guidelines on the use and discharge of harmful or noxious substances and material;
- c) Regional Guidelines on the disposal of oil and oily mixtures and the use and disposal drilling fluids and cutting and analytical measurement;
- d) Regional Guidelines on removal of installations and the related financial aspects;
- e) Regional Guidelines on installation safety measures including health and safety requirements;
- f) Regional Guidelines on minimum standards of qualification for professionals and crews;
- g) Regional Guidelines on authorisation requirements based on the above mentioned Standards;
- h) [Regional Guidelines on liability, compensation and financial responsibility in case of accidental spills, following the assessment by the UNEP/MAP Working Group of Legal and Technical Experts of the adequacy of the Guidelines on Liability and Compensation for Damage Resulting from Pollution of the Marine Environment in the Mediterranean Sea Area (Decision IG 17/4) to Offshore activities, taking into consideration relevant global developments, and with a view to contributing to the implementation of Article 27 of the Offshore Protocol by the Parties;] and

- i) Contribution through their OPRC Focal Points to the revision of the Section II of the Manual on Oil Pollution – Contingency Planning by the International Maritime Organization (IMO) Sub-Committee on Pollution Prevention and Response (PPR) which will include new information related to contingency planning for offshore units, sea ports and oil handling facilities; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Support the specific OFOG Sub-Groups for the development of the above common guidelines.

II.2.3 REGIONAL OFFSHORE MONITORING PROGRAMME

Specific objective 9: To establish regional offshore monitoring procedures and programmes

Ecosystem Approach (EcAp) is the overarching principle of the Barcelona Convention, aiming to achieve good environmental status (GES) of the Mediterranean and ensuring adequate monitoring and assessment of the status on a cyclical basis. The Offshore monitoring programme will be developed in line with the EcAp Roadmap and in particular with the Integrated Monitoring and Assessment Programme.

According to Decision IG 20/4 “Implementing the MAP ecosystem approach roadmap: Mediterranean Ecological and Operational Objectives, Indicators and Timetable for implementing the ecosystem approach roadmap adopted by the Contracting Parties to the Barcelona Convention” (COP17, 2012), and according to Decision 21/3 on the Ecosystem Approach including adopting definitions of Good Environmental Status and Targets, for the purposes of this Action Plan, in compliance with the monitoring obligations under Article 12 of the Barcelona Convention and Article 19 of the Offshore Protocol,

Outputs relating to the Contracting Parties

- a) A regional monitoring programme for offshore activities building, *inter alia*, on the Integrated Monitoring and Assessment Programme; and
- b) Results of the national offshore monitoring programme and the related agreed data are reported to the Secretariat every two years.

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) The development/adoption of Mediterranean Monitoring Procedures and Programmes for the above, in consultation with relevant stakeholders, building on the relevant work undertaken in the Monitoring Correspondence Groups in the EcAp process in line with Decision 21/3;
- b) Development of the Mediterranean Offshore Reporting and Monitoring System (e.g. Regional Data Bank on Offshore activities through the Barcelona Convention Reporting System or other systems defined by the Contracting Parties); and
- c) Production, dissemination and publication every two years of a report on Discharges, Spills and Emissions from Offshore Oil and Gas Installations, based on data submitted by countries which should be used as a base for the State of Environment Report regarding the impacts of the offshore oil and gas industry.

PART III – REPORTING

Specific objective 10: To report on the implementation of the Action Plan

To ensure the effective and timely implementation of the Mediterranean Offshore Action Plan

Outputs relating to the Contracting Parties:

- a) Report on the implementation of this Action Plan, in particular on the effectiveness of the measures defined in this Action Plan and difficulties encountered every two years;
- b) Biennial review of the status of implementation of the Action Plan on the basis of the regional report prepared by the Secretariat; and

Outputs relating to the Secretariat and its Components, depending on the availability of resources

- a) Guidelines on the structure and content of the national report on the implementation of this Action Plan considering existing reporting procedures (e.g. Reporting under the Compliance Committee) to avoid duplication of reporting procedures, as well as a set of indicators,;
- b) Meetings of the Parties to the Offshore Protocol; and
- c) Consolidated report on the implementation of the Action Plan every two years for its submission to the Meetings of the Parties to the Offshore Protocol and the Meetings of the Contracting Parties to the Barcelona Convention.

APPENDICES

Appendix 1 – Implementation goals and tentative timetable for the implementation of the Mediterranean Offshore Action Plan and Estimation of required means for the implementation of the Mediterranean Offshore Action Plan for indicative purposes only

Appendix 2 – Technical cooperation and capacity building programme

Appendix 3 – Potential research topics

MEDITERRANEAN OFFSHORE ACTION PLAN**Appendix 1: LINKS BETWEEN OUTPUTS AND ARTICLES OF THE OFFSHORE PROTOCOLS AND ESTIMATION OF REQUIRED MEANS FOR THE IMPLEMENTATION OF THE ACTION PLAN FOR INDICATIVE PURPOSES ONLY****A) Outputs relating to the Contracting Parties**

Specific Objective	Outputs	Link to the Protocol²	Means required	Indicative estimated cost provided for information purposes only (Euro)
1. To ratify the Offshore Protocol	a) Ratification by all Contracting Parties of the Offshore Protocol, transposition of the Offshore Protocol into national law, and cooperation through the Secretariat to ensure compliance with its provisions	Art.32	Contracting Parties time	0
	b) Review of the effectiveness of the Offshore Protocol	Art.30	Contracting Parties time	0
2. To designate Contracting Parties' Representatives to participate to the regional governing bodies	a) Nomination of the National Offshore Focal Point designated by all MAP Focal Point to coordinate at national level activities carried out in the framework of the Action Plan and actively participate in the OFOG Group	Art.28 Decision IG.21/8	Nomination Contracting Parties time	0
	b) Designation, upon request by the Secretariat, through their National Offshore Focal Point, of the appropriate national entities and/or officials as contact points for each OFOG Sub-	Art.28 Decision IG.21/8	Nomination	0

²Linkage between the objectives of the Action Plan and the Articles of and Annexes to the Offshore Protocol considering that the Article 1 on Definitions, Article 2 on Geographical coverage and Article 3 on General undertakings apply to all Specific Objectives, that Article 29 on Transition measures is no longer applicable and that the discharge and disposal of machinery oil, the treatment and discharge of sewage (Article 11), the disposal and discharge of garbage (Article 12), the reception facilities (Article 13) and the ship storage shall be regulated according to the requirements listed under the relevant Annexes of the International Convention for the Prevention of Pollution from Ships (MARPOL).

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
	Group			
	c) Leadership, on a voluntary basis, of the established Sub-Groups to coordinate with the support of the Secretariat the work assigned to the Sub-Groups	Art.28 Decision IG.21/8	Volunteering	0
3. To establish a technical cooperation and capacity building programme	a) Technical cooperation and capacity building programme endorsed as set in Appendix 2	Art.24		
	Technical Cooperation for the development of Standards and Guidelines			
	<ul style="list-style-type: none"> • Monitoring 		Consultancy funds	20,000
	<ul style="list-style-type: none"> • Use and discharge of harmful or noxious substances and material 		Consultancy funds	20,000
	<ul style="list-style-type: none"> • Disposal of oil and oily mixtures and on the use and disposal drilling fluids and cutting 		Consultancy funds	20,000
	<ul style="list-style-type: none"> • Offshore platform Preparedness and Response & Contingency Plan Assessment 		Participation of Contracting Parties to the IMO PPR meetings	0
	<ul style="list-style-type: none"> • Removal of installations and the related financial aspects 		Consultancy funds	20,000
	<ul style="list-style-type: none"> • Safety measures including health and safety requirements and fire fighting 		Consultancy funds	20,000
	<ul style="list-style-type: none"> • Minimum standards of qualification for professionals and crews 		Consultancy funds	20,000
<ul style="list-style-type: none"> • Granting of authorisations 		Consultancy funds	20,000	

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
	<ul style="list-style-type: none"> • Inspection/sanctions (Installation/Discharge/Competent manning) 		Consultancy funds	20,000
	Training³			
	<ul style="list-style-type: none"> • Monitoring 		Training funds	60,000
	<ul style="list-style-type: none"> • Use and discharge of harmful or noxious substances and material 		Training funds	60,000
	<ul style="list-style-type: none"> • Disposal of oil and oily mixtures and on the use and disposal drilling fluids and cutting 		Training funds	60,000
	<ul style="list-style-type: none"> • Offshore platform Preparedness and Response & Contingency Plan Assessment 		Training funds	60,000
	<ul style="list-style-type: none"> • Removal of installations 		Training funds	60,000
	<ul style="list-style-type: none"> • Safety measures including health and safety requirements and fire fighting 		Training funds	60,000
	<ul style="list-style-type: none"> • Minimum standards of qualification for professionals and crews 		Training funds	60,000
	<ul style="list-style-type: none"> • Granting of authorisations 		Training funds	60,000
	<ul style="list-style-type: none"> • Inspection/sanctions (Installation/Discharge/Competent manning) 		Training funds	60,000
4. To mobilise resources for the implementation of the Action Plan	a) Financial and human resources mobilised to support the implementation of the Action Plan, in particular its provisions related to the OFOG Group, technical cooperation, capacity	Art.31	Contracting Parties time and participation to the	Spec. Objective 10

³ Estimation based on the assumption that 2 Participants per country attend the regional training

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
	building and monitoring activities		Meetings of the Parties to the Offshore Protocol	
5. To promote access to information and public participation in decision-making	a) Template for public information in line with national and regional rules on access to information	Art.23, 25 & 26	Contracting Parties time and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 10
	b) Report to the Secretariat every two years relevant information on the offshore installations within their jurisdiction including, when appropriate, information on their disposal for inclusion in the inventory to be maintained by the Secretariat	Art 6 & Art 17	Contracting Parties time	0
	c) Report to the Secretariat every two years discharges, spills and emissions from offshore oil and gas installations data in accordance with the monitoring programme to be defined by the relevant OFOG Sub-Group	Art 17	Contracting Parties time	0
6. To enhance the regional transfer of technology	a) Active participation of the respective scientific and technical institutions, as well as the industry, in R&D activities and programmes related to prevention, response and monitoring of pollution from offshore activities	Art.22	Contracting Parties time	0
	b) Presentation of the results of R&D activities and programmes by their respective national institutions and industry in international fora	Art.22	Contracting Parties time	0
	c) Information on ongoing R&D activities and research needs	Art.22	Contracting Parties	0

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
	provided to the Secretariat		time	
7. To develop and adopt regional offshore standards	a) Environmental impact assessment regional standards developed based on existing EIA regional standards taking into consideration requirements referred in Annex IV and other best practices	Art.5,6,7, 8& 23 Annex IV	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	b) Common standards, on the use and discharge of harmful or noxious substances and material, in line with relevant international standards and conventions defining inter alia limits and prohibitions at regional level formulated and adopted	Art.5,6,7, 8,9,14 & 23 Annexes I, II & III	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	c) Identification of the required modifications of Annex I, II and III and definition of which chemicals should be covered and not covered by such standards and under which conditions	Art.5,6,7, 8,9& 23 Annexes I, II & III	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
	d) Common standards on the disposal of oil and oily mixtures and on the use and disposal of drilling fluids and cutting formulated and adopted, and revision of the limits set in Article 10 and the prescriptions referred in Annex V of the Protocol	Art.5,6,7, 8,10, 14 & 23 Annex V Appendix	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	e) The method to be used to analyse the oil content is commonly agreed and adopted	Art.5,6,7, 8,10& 23	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	f) Procedures for contingency planning, notification of accidental spills and transboundary pollution established in accordance with the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea	Art.5,6,7, 8,16,17,18,26 & 23 Annex VII	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	g) Special restrictions or conditions for specially protected areas defined and adopted	Art.5,6,7, 8,21& 23	Contracting Parties time, technical	Spec. Objective 3 Spec. Objective

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
			support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	10
	h) Common criteria, rules and procedures for the removal of installations and the related financial aspects adopted	Art.5,6,7, 8,20& 23	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	i) Common criteria, rules and procedures for safety measures including health and safety requirements adopted	Art.5,6,7, 8,15& 23 Annexes VI	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	j) Common minimum standards of qualification for professionals and crews adopted	Art.5,6,7, 8,15& 23 Annex VI	Contracting Parties time, technical support as set in specific objective 3	Spec. Objective 3 Spec. Objective 10

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
			and participation to the Meetings of the Parties to the Offshore Protocol	
8. To develop and adopt regional offshore guidelines	a) Regional Guidelines on Environmental Impact Assessment	Art.5,6,7, 8& 23 Annex IV	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	b) Regional Guidelines on the use and discharge of harmful or noxious substances and material	Art.5,6,7, 8,9,14 & 23 Annexes I, II & III	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	c) Regional Guidelines on the disposal of oil and oily mixtures and the use and disposal drilling fluids and cutting and analytical measurement	Art.5,6,7, 8,10,14 & 23 Annex V	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the	Spec. Objective 3 Spec. Objective 10

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
			Parties to the Offshore Protocol	
	d) Regional Guidelines on removal of installations and the related financial aspects	Art.5,6,7, 8,20& 23	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	e) Regional Guidelines on installation safety measures including health and safety requirements	Art.5,6,7, 8,15& 23 Annex VI	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	f) Regional Guidelines on minimum standards of qualification for professionals and crews	Art.5,6,7, 8,15& 23 Annex VI	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
	g) Regional Guidelines on authorisation requirements based on the above mentioned Standards	Art.4,5,6, 7,8,14& 23	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	h) [Regional Guidelines on liability, compensation and financial responsibility in case of accidental spills, following the assessment by the UNEP/MAP Working Group of Legal and Technical Experts of the adequacy of the Guidelines on Liability and Compensation for Damage Resulting from Pollution of the Marine Environment in the Mediterranean Sea Area (Decision IG 17/4) to Offshore activities, taking into consideration relevant global developments, and with a view to contributing to the implementation of Article 27 of the Offshore Protocol by the Parties]	[Art.5,6,7, 8,17, 23 & 27]	[Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol]	[Spec. Objective 3 Spec. Objective 10]
	i) Contribution through their OPRC Focal Points to the revision of the Section II of the Manual on Oil Pollution – Contingency Planning by the International Maritime Organization (IMO) Sub-Committee on Pollution Prevention and Response (PPR) which will include new information related to contingency planning for offshore units, sea ports and oil handling facilities	Art.5,6,7, 8,16& 23	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10

Specific Objective	Outputs	Link to the Protocol ²	Means required	Indicative estimated cost provided for information purposes only (Euro)
9. To establish regional offshore monitoring procedures and programme	a) A regional monitoring programme for offshore activities building, <i>inter alia</i> , on the Integrated Monitoring and Assessment Programme	Art.19 & 5	Contracting Parties time, technical support as set in specific objective 3 and participation to the Meetings of the Parties to the Offshore Protocol	Spec. Objective 3 Spec. Objective 10
	b) Results of the national offshore monitoring programme and the related agreed data are reported to the Secretariat every two years.	Art.19 & 5	Contracting Parties time	0
10. To report on the implementation of the Action Plan	a) Report on the implementation of this Action Plan, in particular on the effectiveness of the measures defined in this Action Plan and difficulties encountered every two years	Art. 30 & 25	Contracting Parties time	0
	b) Biennial review of the status of implementation of the Action Plan on the basis of the regional report prepared by the Secretariat	Art. 30 & 25	Contracting Parties time	0

B) Outputs relating to the Secretariat and its Components

Specific Objective	Outputs	Link to the Protocol	Means required	Indicative estimated cost provided for information purposes only (Euro)
1. To ratify the Offshore Protocol	a) Provision of advice and technical assistance to Contracting Parties to the Barcelona Convention, which so request	Art.32	Technical Support and Secretariat staff time	75,000
	b) Assistance in reviewing the effectiveness of the Offshore Protocol	Art.30	Secretariat staff time Consultancy funds	End note ⁱ 30,000]
2. To designate Contracting Parties representatives to participate to the regional governing bodies	a) Participation of the industry and their representatives as observers to the OFOG Sub-Groups	Art.28 Decision IG.21/8	Secretariat staff time and travels	End note ⁱ Secretariat Travels on Official Business
	b) Enhancement of public awareness through the contribution of IGOs and NGOs with a relevant mandate to the topics discussed in the various OFOG Sub-Groups, through their participation as observers, ensuring an open and transparent process through public consultations	Art.28 Decision IG.21/8	Secretariat staff time	End note ⁱ
	c) Establishment of institutional cooperation with various relevant regional and global institutions, initiatives and agreements and, at an operational level, identification and use of possible synergies with ongoing activities of bodies such as the European Maritime Safety Agency	Art.28 Decision IG.21/8	Secretariat staff time and travels	End note ⁱ Secretariat Travels on Official Business
	d) Publication and update of the composition of the OFOG Group	Art.28	Website developer	20,000

Specific Objective	Outputs	Link to the Protocol	Means required	Indicative estimated cost provided for information purposes only (Euro)
	and Sub-Groups on a dedicated website	Decision IG.21/8		
	e) Updated list of the National Offshore Focal Points and OFOG Sub-Group Focal Points	Decision IG.21/8	Secretariat staff time	End note ⁱ
	f) Definition, in consultation with MAP Focal Points, of the roles and responsibilities of UNEP/MAP Components to facilitate the implementation of the Action Plan	Art.28 Decision IG.21/8	Secretariat staff time	End note ⁱ
	g) Identification of the required means including human resources to ensure the implementation of the Action Plan and the support of the relevant UNEP/MAP Components. A draft estimation of the required means is found in Appendix 1	Art.28 Decision IG.21/8	Secretariat staff time	End note ⁱ
3. To establish a technical cooperation and capacity building programme	a) Integration of the technical cooperation and capacity building programme in the six year programme of activities of UNEP/MAP and its relevant Components and in their biennium programme of work	Art.24	Secretariat staff time	End note ⁱ
	b) Preparation of the corresponding budget for consideration by the Ordinary Meeting of the Contracting Parties to the Barcelona Convention	Art.24	Secretariat staff time	End note ⁱ
	c) Identification of donors to secure funds required for the implementation of the technical cooperation and capacity	Art.24	Secretariat staff time	End note ⁱ

Specific Objective	Outputs	Link to the Protocol	Means required	Indicative estimated cost provided for information purposes only (Euro)
	building programme			
4. To mobilise resources for the implementation of the Action Plan	a) Identification of additional donors to secure funds for the implementation of the Action Plan	Art.31	Secretariat staff time	End note ⁱ
5. To promote access to information, public participation in decision-making	a) Support the preparation of the template for public information in line with existing Decisions of the Contracting Parties addressing public access to information and with UNEP's Access to Information Policy	Art.23, 25 & 26	Consultancy funds	20,000
	b) Development of an online regional system and to be maintained for the purpose of public information sharing	Art.23, 25 & 26	Online regional system	20,000
	c) Publication every two years on a dedicated website of the inventory of installations as well as the discharges, spills and emissions from offshore oil and gas installations data submitted by the Contracting Parties	Art 6 & Art 17	Secretariat staff time	End note ⁱ
	d) Consolidated report every two years on the discharges, spills and emissions from offshore oil and gas installations data submitted by the Contracting Parties.	Art 17	Secretariat staff time	End note ⁱ
6. To enhance the participation of the regional transfer of technology	a) Support in the identification of fields of research in which there is a need for enhancement of the state-of-the-art of offshore pollution prevention, response and monitoring technologies and techniques	Art.22	Secretariat staff time	End note ⁱ
	b) Dissemination and exchange of results of national R&D	Art.22	Secretariat staff time	End note ⁱ

Specific Objective	Outputs	Link to the Protocol	Means required	Indicative estimated cost provided for information purposes only (Euro)
	activities and programmes within and outside the Mediterranean region			
	c) Participation of national and regional research institutions and industry in the relevant international fora facilitated with a view to making better known the results of R&D activities undertaken in the Mediterranean region	Art.22	Travels	20,000
7. To develop and adopt regional offshore standards	a) Support the specific OFOG Sub-Groups for the development of the above common standards	Art.23	Secretariat staff time	End note ⁱ
8. To develop and adopt regional offshore guidelines	a) Support the specific OFOG Sub-Groups for the development of the above common guidelines	Art.23	Secretariat staff time	End note ⁱ
9. To establish regional offshore monitoring procedures and programme	a) The development/adoption of Mediterranean Monitoring Procedures and Programmes for the above, in consultation with relevant stakeholders, building on the relevant work undertaken in the Monitoring Correspondence Groups in the EcAp process in line with Decision 21/3	Art.19	Secretariat staff time	End note ⁱ
	b) Development of the Mediterranean Offshore Reporting and Monitoring System (e.g. Regional Data Bank on Offshore activities through the Barcelona Convention Reporting System or other systems defined by the Contracting Parties)	Art.19	Mediterranean Offshore Reporting and Monitoring System	20,000
	c) Production, dissemination and publication every two years of a	Art.19 &	Secretariat staff time,	9,000 ⁴

⁴Assumption: 3 reports published over the Action Plan period at Euro 3,000 per report

Specific Objective	Outputs	Link to the Protocol	Means required	Indicative estimated cost provided for information purposes only (Euro)
	report on Discharges, Spills and Emissions from Offshore Oil and Gas Installations, based on data submitted by countries which should be used as a base for the State of Environment Report regarding the impacts of the offshore oil and gas industry	17	publication and dissemination	
10. To report on the implementation of the Action Plan	a) Guidelines on the structure and content of the national report on the implementation of this Action Plan considering existing reporting procedures (e.g. Reporting under the Compliance Committee) to avoid duplication of reporting procedures, as well as a set of indicators	Art.30 & 25	Secretariat staff time	End note ⁱ
	b) Meetings of the Parties to the Offshore Protocol	Art.30	Travel/DSA	300,000 ⁵
	c) Consolidated report on the implementation of the Action Plan every two years for its submission to the Meetings of the Parties to the Offshore Protocol and the Meetings of the Contracting Parties to the Barcelona Convention.	Art.30]	Secretariat staff time	End note ⁱ
TOTAL				1,314,000

⁵ Assumption: 5 Meetings over the Action Plan period (2015-2024) at Euro 60,000 per meeting

MEDITERRANEAN OFFSHORE ACTION PLAN

Appendix 2– TECHNICAL COOPERATION AND CAPACITY BUILDING PROGRAMME

Technical support (Consultancy services) for the development of Standards and Guidelines⁶
Monitoring
Use and discharge of harmful or noxious substances and material
Disposal of oil and oily mixtures and on the use and disposal drilling fluids and cutting
Removal of installations
Safety measures including health and safety requirements and fire fighting
Role/responsibility and qualification of professional and crews
Granting of authorisations
Training
Monitoring
Use and discharge of harmful or noxious substances and material
Disposal of oil and oily mixtures and on the use and disposal drilling fluids and cutting
Offshore platform Preparedness and Response & Contingency Plan Assessment
Removal of installations
Safety measures including health and safety requirements and fire fighting
Role/responsibility and qualification of professional and crews
Granting of authorisations
Inspection/sanctions (Installation/Discharge/Competent manning)

⁶Offshore platform Preparedness and Response & Contingency Plan Assessment will be followed by Contracting Parties through the Meeting of the International Maritime Organization (IMO) Sub-Committee on Pollution Prevention and Response (PPR).

MEDITERRANEAN OFFSHORE ACTION PLAN

Appendix 3: INDICATIVE POTENTIAL RESEARCH AND DEVELOPMENT TOPICS

Air Emissions:

- Effects of air emissions from offshore activities

Noise:

- Environmental Impact Assessment on noise generated by offshore activities

Fisheries

- Short-term and long-term impact of the oil and gas (O&G) industry on Mediterranean fisheries

Prevention

- Safety of operations

Monitoring

- Marine environment monitoring

Response to marine pollution

- Environmental Impact Assessment of multiple in situ burning operations on major oil spills from offshore platforms in the Mediterranean Region
- Environmental Impact Assessment of extended use of dispersants on major oil spills from offshore platforms in the Mediterranean Region
- Oil spill monitoring & forecasting modelling
- Mediterranean Offshore Oil Spill Risk Assessment Study
- Mediterranean Offshore Oil Spill Risk Assessment Tool

Draft Decision IG.22/4

Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021)

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean as amended in Barcelona 1995, herein after referred to as the Barcelona Convention,

Recalling the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea, hereinafter referred to as the “2002 Prevention and Emergency Protocol”, and in particular article 18 providing for the formulation and adoption “ of strategies, action plans and programmes for its implementation”;

Recalling also the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2005-2015), hereinafter referred to as “the Regional Strategy (2005-2015)”, adopted by COP 14 (Portorož, Slovenia, 2005);

Noting the progress achieved and the challenges faced in the implementation of the Regional Strategy (2005-2015) and the possible areas of improvements;

Based on Decision IG.21/17 of COP 18(Istanbul, Turkey, December 2013) on the Programme of Work and Budget 2014-2015 mandating the revision and update of the 2005 Regional Strategy;

Further recalling that the mandate of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), adopted by the 16th Meeting of the Contracting Parties in Marrakesh (Morocco) in 2009, is to assist the Contracting Parties in meeting their obligations under the 2002 Prevention and Emergency Protocol and in implementing related strategies;

[Adopts] the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021) contained in the Annex to this Decision;

Urges the Contracting Parties to continue strengthening and accelerating their efforts in implementing the 2002 Prevention and Emergency Protocol, through the Regional Strategy (2016-2021);

Encourages the Contracting Parties, wherever possible, to conduct national and sub-regional activities in support of the objectives of the Regional Strategy (2016-2021);

Requests the Secretariat to explore opportunities for further cooperation or synergy with regional and international organisations, bilateral and multilateral cooperation agencies, and other relevant actors, including the oil and gas industry;

Requests the Secretariat (REMPEC) to provide assistance to Mediterranean coastal States in the context of implementing the Regional Strategy (2016-2021), aligning its priorities to those approved within the framework of sectorial Regional Strategies and Action Plans, such as the Mediterranean Strategy on Ships’ Ballast Water Management and the Mediterranean Offshore Protocol Action Plan and other relevant developments at the global level, such as the institutionalisation of the International Maritime Organization (IMO) Member State Audit Scheme and to collaborate with relevant organisations, such as EMSA, on current and future initiatives

Urges Contracting Parties and partners including industry to contribute adequate human and financial resources for a full and effective implementation of the Regional Strategy (2016-2021).

ANNEX

**Regional Strategy for Prevention of and Response to Marine Pollution from Ships
(2016-2021)**

PREAMBLE

Nothing in this Strategy shall prejudice the principles of Sovereignty of the States, principles of Freedom, rights of Navigation, and principles of Innocent Passage in the Territorial Sea.

In case of any contradiction between the Strategy and national or international legislations, the latter shall prevail.

For specific topics addressing national issues, the Secretariat should seek the authorisation of the concerned country prior to the publication of certain reports.

REGIONAL STRATEGY FOR PREVENTION OF AND RESPONSE TO MARINE POLLUTION FROM SHIPS (2016-2021)

1 REMPEC

Objective and mission Statement

1.1 The objective of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) is to contribute to preventing and reducing pollution from ships and combating pollution in case of emergency. In this respect, the mission of REMPEC is to assist the Contracting Parties in meeting their obligations under Articles 4(1), 6 and 9 of the Barcelona Convention; the 1976 Emergency Protocol; the 2002 Prevention and Emergency Protocol and implementing the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021), [adopted] by the Contracting Parties in 2016 which key objectives and targets are reflected in the overarching Mediterranean strategies (i.e. Mediterranean Strategy for Sustainable Development (MSSD), the United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP)'s Integrated Six Year Programme of Work for the period 2016 to 2021 (Mid-Term Strategy) and the Ecosystem Approach (EcAp)). The Centre will also assist the Contracting Parties which so request in mobilising the regional and international assistance in case of an emergency under the Offshore Protocol.

Scope of action and key issues

1.2 According to the Centre's Mandate adopted by the 16th Ordinary Meeting of the Contracting Parties (Marrakesh, Morocco, 3 – 5 November 2009), REMPEC's main fields of action for the prevention of pollution of the marine environment from ships and the development of preparedness for and response to accidental marine pollution and cooperation in case of emergency consist of:

- .1 strengthening the capacities of the coastal States in the region with a view to preventing pollution of the marine environment from ships and ensuring the effective implementation in the region of the rules that are generally recognised at the international level relating to the prevention of pollution from ships, and with a view to abating, combating and, to the fullest possible extent, eliminating pollution of the marine environment from shipping activities, including pleasure craft;
- .2 developing regional cooperation in the field of the prevention of pollution of the marine environment from ships, and facilitating cooperation among Mediterranean coastal States in order to respond to pollution incidents which result or may result in a discharge of oil or other hazardous and noxious substances and which require emergency actions or other immediate response;
- .3 assisting coastal States of the Mediterranean region which so request in the development of their own national capabilities for response to pollution incidents which result or may result in a discharge of oil or other hazardous and noxious substances and facilitating the exchange of information, technological cooperation and training;
- .4 providing a framework for the exchange of information on operational, technical, scientific, legal and financial matters, and promoting dialogue aimed at conducting coordinated action at the national, regional and global levels for the implementation of the Prevention and Emergency Protocol; and
- .5 assisting coastal States of the region, which in cases of emergency so request, either directly or by obtaining assistance from the other Parties, or when possibilities for assistance do not exist within the region, in obtaining international assistance from outside the region.

2 PRESENT AND FUTURE SCENARIOS OF THE MARITIME INDUSTRY AND THE MEDITERRANEAN REGION

2.1 The Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021) (the Regional Strategy) and its General and Specific Objectives have been developed on the basis of the original Regional Strategy for Prevention of and Response to Marine Pollution from Ships adopted by the Contracting Parties to the Barcelona Convention at their 14th Ordinary Meeting in 2005. The revision exercise has been carried out in parallel to the preparation of the United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP)'s Integrated Six Year Programme of Work for the period 2016 to 2021 (Mid-Term Strategy), the drafting of the Mediterranean Strategy for Sustainable Development (MSSD) 2.0 (2016-2025) and the implementation of the Ecosystem Approach (EcAp) during the biennium 2014-2015, bearing in mind the legal, financial and institutional framework of the Barcelona system, including in particular the provisions of the Prevention and Emergency Protocol, and the mandate of REMPEC as the regional Centre charged with the implementation of the said Protocol. The Regional Strategy (2016-2021) should, therefore, be seen as an integral part of the UNEP/MAP's Mid-Term Strategy.

2.2 The revision process has incorporated, as appropriate, the findings of a synthetic report on the Assessment of the Implementation of the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2005-2015) (REMPEC/WG.36/4), based on the Contracting Parties' response to a request for information sent by REMPEC during the summer of 2014, and of a comparative report on ongoing and existing Mediterranean, European and international strategies/sectorial action plans/initiatives on marine environment protection (REMPEC/WG.36/5), both prepared under REMPEC's direction.

2.3 Moreover, as it was the case with the original Strategy, the Regional Strategy has been elaborated in the context of past, present and expected future scenarios characterising the maritime industry and the Mediterranean region, in particular:

- .1 the ever increasing role of shipping services in a more interconnected globalised world and the consequent need to better ensure the observance of the highest shipping standards also by increased interaction at the global, regional, sub-regional and national levels;
- .2 the expected developments related to maritime traffic in the Mediterranean, in particular through the future Trans-Mediterranean Transport Network (TMN-T);
- .3 the heightened concern of the general public at the impact of global shipping activities both on human life and on the marine environment; and
- .4 recent and expected developments at the global and regional levels related to the regulation of shipping that may necessitate new approaches to the protection of the Mediterranean marine environment and require a common approach to the issue of the protection of the marine environment in the region, spearheaded by REMPEC.

2.4 In view of the above, the shipping industry and the relevant private sectors' cooperation and participation should be enhanced through consultations, technical and financial contribution, whilst implementing the Regional Strategy.

3 GENERAL OBJECTIVES

Regional (UNEP/MAP) considerations

3.1 Taking into consideration the mission statement of REMPEC, the legal, financial and institutional framework of the Barcelona system, including in particular the provisions of the Prevention and Emergency Protocol, and the present and expected future scenarios characterising the maritime industry and the Mediterranean region, the overarching objectives of the Regional Strategy are threefold, namely:

- .1 prevention of pollution from ships¹;
- .2 prevention of maritime accidents; and
- .3 preparation for response to major pollution incidents.

3.2 Section 4 describes the Specific Objectives which, if achieved, will meet the general objectives as set out above. For each Specific Objective, certain goals are proposed which will also serve as criteria for indicating the success (or otherwise) of Contracting Parties in meeting the objectives. The implementation goals are set out in tabular form in **Appendix I**. Although the role of REMPEC will, as it has been since its inception, be primarily one of assistance to the Contracting Parties in enhancing their national capacities and in facilitating the means for regional or sub-regional cooperation, most of the Specific Objectives include definite tasks which are entrusted to the Secretariat (REMPEC) as an integral part of the Regional Strategy. For each Specific Objective, expected outputs relating to the Contracting Parties and the Secretariat are defined as follow

Outputs relating to the Contracting Parties

- Actions by all Contracting Parties to implement the Regional Strategy

Outputs relating to the Secretariat

- Supporting actions offered by the Secretariat as defined by Resolution 7 adopted by the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region on the Protection of the Mediterranean Sea at Barcelona on 9 February 1976 and by the subsequent Decision on the mandate of REMPEC of the Sixteenth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols” (UNEP(DEPI)/MED IG.19/8, Annex II, pages 45-58), Marrakesh, 3-5 November 2009

3.3 Instead of indicating explicit deadlines for the accomplishment of the Specific Objectives, the Regional Strategy establishes two levels of urgency: *high priority*, whereby all the Contracting Parties and REMPEC would be expected to accomplish the particular objective by end of 2018, and *medium priority*, for the cases where the implementation of the objectives in question would not realistically be expected less than five years after the adoption of the Regional Strategy, that is by end of 2020. Thus, the ultimate aim would be to have the whole of the Regional Strategy implemented by all the Contracting Parties and REMPEC well before the end of the period covered by the UNEP/MAP’s Midterm Strategy 2016-2021. An indication of the priority assigned to each of the Specific Objective is shown also in **Appendix I**.

3.4 The comparative report referred to in paragraph 2.2 above has shown that several areas of activity within the Specific Objectives have strong synergies with the work of other components of the Mediterranean Action Plan (MAP) and related regional and international organisations. Where necessary, the undertakings required of REMPEC under the Regional Strategy should create linkages

¹ As defined in Article 2.4 of MARPOL Convention.

with the work of such other entities and foster cooperation among them. In particular, account should be taken of the following initiatives and work:

- .1 Mediterranean: the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II), UNEP/MAP's Mid-Term Strategy (2016-2021), Ecosystem Approach (EcAp), Revised Mediterranean Strategy for Sustainable Development (MSSD), Regional Strategy on Ships' Ballast Water Management, Regional Plan on Marine Litter Management, Offshore Protocol Action Plan;
- .2 European: European Maritime Safety Agency (EMSA) Action Plans for pollution preparedness and response, Union Civil Protection Mechanism (UCPM), Marine Strategy Framework, Horizon 2020 Initiative (H2020 Initiative); and
- .3 International: the International Maritime Organization (IMO) Member State Audit Scheme (IMSAS) (including the IMO Instruments Implementation Code), IMO's Integrated Technical Cooperation Programme (ITCP) priorities.

UNEP/MAP's Midterm Strategy 2016-2021

3.5 Of the business areas identified in the development process of the UNEP/MAP's Midterm Strategy 2016-2021, the following, **as they may refer to ships**, should be taken into account and be ever present as general objectives when implementing the relevant Specific Objectives of the Regional Strategy:

- .1 to prevent and control contaminant inputs, oil discharges and spills, as well as human-induced eutrophication;
- .2 to prevent marine litter generation and reduce its impact on coastal and marine environment;
- .3 to keep non-indigenous species introduced by human activities at levels that do not adversely alter the ecosystem;
- .4 to maintain sea floor integrity, especially in priority benthic habitats; and
- .5 to enhance the resilience of the Mediterranean Region to impacts of climate change and variability on coastal and marine environment.

3.6 The implementation of the Regional Strategy's objectives will be expedited once the Contracting Parties have in place and apply updated national (see also paragraph 3.28 below) and regional governance mechanisms for the implementation of the Barcelona Convention, its Protocols and the adopted Strategies and Action Plans.

3.7 Also relevant are the outcomes of the MAP's five-year Strategic Programme of Work for the period 2010 to 2014, extended to 2015 by the 18th Meeting of the Contracting Parties. Of the Programme's priority themes, pollution prevention and control is the most relevant to the Regional Strategy and should continue to serve as a primary term of reference for the future. So should the establishment of early warning of pollution (oil and Hazardous and Noxious Substances (HNS) spills) and the achievement of lower levels of pollution in the Mediterranean marine and coastal environments. These themes are covered under some of the Specific Objectives of the present Regional Strategy. The other pertinent priority theme is climate change, an issue that, under the perspective of the Regional Strategy, should be limited to the contribution that a more efficient and cleaner shipping would make to the general efforts that Contracting Parties should make, both in land

and at sea, to stem the repercussions of climate change. This issue is covered under Specific Objectives 1 a) and 15 of the present Strategy.

Ecosystem Approach (EcAp)

3.8 Following the Contracting Parties commitment to progressively apply the Ecosystem Approach (EcAp) to the management of human activities with the goal of effecting real change in the Mediterranean marine and coastal environment, the UNEP/MAP Secretariat was mandated to prepare an Ecosystem Approach Monitoring Programme, and to integrate EcAp in the overall work of UNEP-MAP/Barcelona Convention; the following ecological objectives, relevant to the present Strategy, were identified and are referred to in the relevant Specific Objectives thereof:

- .1 non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem;
- .2 contaminants cause no significant impact on coastal and marine ecosystems and human health;
- .3 marine and coastal litter does not adversely affect coastal and marine environment; and
- .4 noise from human activities causes no significant impact on marine and coastal ecosystems.

3.9 From an initial gap analysis of existing measures under the Barcelona Convention relevant to achieving or maintaining a good environmental status (GES) of the Mediterranean Sea, in line with the Ecosystem Approach, conducted by the UNEP/MAP Secretariat, the following areas were found in need of further work in the future, all of which are addressed one way or another within the Regional Strategy:

- .1 public participation and science policy interface, which relates to Specific Objective 18 of the Regional Strategy (to encourage the participation of the regional scientific and technical institutions in research and development activities and to facilitate transfer of technology);
- .2 invasive alien species, specifically concerning the Marine Mediterranean Invasive Alien Species (MAMIAS) system, which relates directly to the Mediterranean Strategy on Ships' Ballast Water Management (BWM Mediterranean Strategy) and Specific Objective 1 b) ii);
- .3 marine pollution, which relates to most of the Specific Objectives of the Regional Strategy;
- .4 marine litter, which relates directly to the implementation of the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex V – Regulations for the prevention of pollution by garbage from ships, the provision of reception facilities in ports and the delivery of ship-generated wastes (Specific Objectives 1, 5 and 6 of the Regional Strategy); and
- .5 marine noise caused by ships, which is covered under Specific Objective 13.

Mediterranean Strategy for Sustainable Development (MSSD)

3.10 Following a decision of the Contracting Parties, at the 18th Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (COP 18), to review the Mediterranean Strategy for Sustainable Development (MSSD), the Mediterranean Commission on Sustainable Development (MCSDD), based on a wide stakeholder consultation, recommended that the

revised MSSD be focused on six thematic areas in line with the global process to achieve Sustainable Development Goals, of which the following three are considered of relevance to the present Regional Strategy and have, therefore, been taken into account in the Strategy's general and some of the Specific Objectives, as appropriate:

Seas and coasts; including efforts towards reaching Good Environmental Status of Mediterranean marine and coastal ecosystems;

Climate; including the impacts of climate change on natural resources and socioeconomic sectors and possible responses; and

Governance; including financing, Aarhus Convention-related issues such as public participation, and cooperation.

3.11 Drawing from the ongoing review of the MSSD, which envisages the drafting of MSSD 2.0 (2016-2025), the following draft strategic directions have been identified as appropriate for reflection, *mutatis mutandis*, in the Regional Strategy:

- .1 strengthen implementation and compliance to the Protocols of the Barcelona Convention and other regional policy instruments and initiatives (e.g. EcAp) supplemented by national approaches, which is implied in the Strategy's general and some of the Specific Objectives;
- .2 develop capacity and implement schemes for sharing integrated monitoring data of the marine and coast in a sub-national, national and regionally cooperative manner, which forms part of many of the Specific Objectives under various headings;
- .3 develop scientific knowledge and technical capacities to deal with climate change and ensure informed decision-making at all levels, which is covered under Specific Objective 1 a) as it concerns ships' energy efficiency under MARPOL Annex VI; and
- .4 enhance capacity of national and local governments and other stakeholders, including the private sector, which is relevant to Specific Objectives 3 and 18.

Other relevant initiatives under the MAP

3.12 Of the other regional initiatives and action plan listed in paragraph 3.4.1 above, the Mediterranean Strategy on Ships' Ballast Water Management is referred to under Specific Objectives 1 b) and d); the Regional Plan on Marine Litter Management is covered under Specific Objectives 5, 6 and 9; and the Offshore Protocol Action Plan should be taken into account when implementing most of the Specific Objectives, in particular those addressing prevention and control of marine pollution from ships. With regard to the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean, Specific Objective 9 is exclusively dedicated to their implementation.

European (EU) considerations

EMSA

3.13 Drawing from the successful outcome of previous cooperation arrangements between the Contracting Parties to the Barcelona Convention and the EMSA, it would be advisable to maintain and, where needed, increase coordination between them, especially when implementing some of the Specific Objectives of the Regional Strategy, which should ideally be in full harmony, not only with the aims of UNEP/MAP's strategies and action plans but also with European Union (EU) policies

affecting the protection of the Mediterranean environment currently being, or about to be, implemented by EMSA. Furthermore, Contracting Parties that are not Members of the EU should aspire to bring their maritime safety, maritime security and, especially, ship-generated pollution prevention and response legislation and practices, in line with that of their Mediterranean neighbouring States that are EU Members.

3.14 Currently, there are three Action Plans for pollution preparedness and response developed by EMSA: the first one, applicable to oil (hereinafter referred to as the EMSA Oil Action Plan), identifies the Mediterranean Sea, particularly the area along the tanker route from the Black Sea, as a priority area in European waters which requires additional action. The second one pertains to HNS matters (hereinafter referred to as the EMSA HNS Action Plan). The third one is EMSA'S Action Plan for Response to Marine Pollution from Oil and Gas Installations (hereinafter referred to as the EMSA Offshore Action Plan). The commonalities between some of the measures called for in EMSA'S Action Plans and the objectives of the Regional Strategy are all too evident. Therefore, all the relevant Action Plans measures that are considered applicable to the Mediterranean, in particular those areas where EMSA's mandate is extended to cover third parties and regional agreements, should be reflected as appropriate in the Regional Strategy. To that end, Specific Objectives 7, 17, 18, 19, 20, 21 and 22 make reference to the above Action Plans.

Union Civil Protection Mechanism (UCPM)

3.15 UCPM facilitates cooperation in the field of Civil Protection to improve the effectiveness of systems for preventing, preparing for and responding to natural and man-made disasters, including marine environment emergencies. The Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021) should make use of relevant aspects of the UCPM, and reflect them as appropriate actions to be addressed by REMPEC under Specific Objectives 19, 20, 21 and 22.

EU Marine Strategy Framework Directive

3.16 The Marine Strategy Framework Directive (2008/56/EC) establishes a framework for community action in the field of marine environment policy. In particular, it requires Member States sharing a marine region or sub-region to cooperate to ensure that the measures required to achieve the objectives of the Directive are coherent and coordinated across the marine region or sub-region concerned. To achieve this coordination, Member States are obliged to use existing regional institutional cooperation structures, including those under the Regional Sea Conventions, making every effort to coordinate their actions with third countries having sovereignty or jurisdiction over the waters concerned. Member States are also obliged, as far as possible, to build upon relevant existing programmes and activities developed in the framework of structures stemming from Regional Sea Conventions. It is, therefore, advisable that the applicable provisions of the above-mentioned Directive be borne in mind, as appropriate, when implementing the Regional Strategy.

H2020 Initiative

3.17 The Horizon 2020 Initiative is an umbrella programme drawing together all the policies, strategies and action plans, placing emphasis on excellent science, industrial leadership and tackling societal challenges, such as enhancing maritime protection. As such, it aims to improve the quality of life of more than 420 million citizens living in the 25 countries bordering the Mediterranean sea, whose responsible ministers have agreed to strengthen the Initiative's pollution prevention dimension and to pay attention to emerging and related issues, such as hazardous waste and marine litter, and at the same time to further strengthen the synergies with the Barcelona Convention and take firm steps to ensure the full implementation and enforcement of policies supporting the H2020 Initiative goals, in line with the Ecosystem Approach (EcAp), with the support of the capacity building component when required.

3.18 Since the second phase of the H2020 Initiative (2015-2020) is clearly of great relevance to the aims and objectives of the Regional Strategy, full consideration should be given to the policies, strategies and action plans contemplated under the second phase of the H2020 Initiative when implementing the Strategy as a whole.

International (IMO) considerations

IMO's Integrated Technical Cooperation Programme priorities

3.19 The following thematic priorities relating to the protection of the marine environment, selected for inclusion in the Organization's Integrated Technical Cooperation Programme (ITCP) for the biennium 2016-2017 and therefore earmarked for funding under the ITCP, are likely to remain main concerns of the Marine Environment Protection Committee (MEPC) for years to come:

- .1 assisting countries in implementing the MARPOL Convention and, more specifically, in providing port reception facilities, establishing of Special Areas or Particularly Sensitive Sea Areas (PSSAs), introducing waste management and in the uniform application of Annex VI on energy efficiency measures for ships;
- .2 assisting countries in implementing the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC Convention) and the Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol) and enhancing regional cooperation in marine pollution preparedness, response and cooperation as well as addressing aspects of the implementation of the relevant international regimes on liability and compensation for oil and HNS pollution damage;
- .3 strengthening national and regional capacity and fostering regional cooperation for the ratification and effective implementation of the Hong Kong Convention on Ship Recycling, the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) and ships' biofouling guidelines; and
- .4 assisting countries in ratifying and implementing the London Protocol on Prevention of Pollution by Dumping of Wastes and Other Matter.

3.20 All of the thematic priorities enumerated above have direct correspondence with several Specific Objectives and therefore, should be reflected in the relevant actions requested under the said objectives. The thematic priorities have thus been captured, as appropriate, under Specific Objectives 1, 5, 12, 15, 20, 21 and 22.

3.21 As mentioned in paragraph 3.19 above, it should be noted that IMO may be required by Member Governments to provide assistance for the implementation and delivery of the objectives referring to in the above IMO's ITCP thematic priorities, once approved by the Technical Cooperation Committee of the Organization. As a general objective, the Secretariat is requested to explore ways and means that would secure such assistance for the implementation of the Specific Objectives in question.

IMO Member State Audit Scheme

3.22 Based on the experience gained through the implementation of the Voluntary IMO Member State Audit Scheme (VIMSAS), the IMO Assembly adopted, in 2009, the IMO Instruments Implementation Code (III Code), which would constitute the new audit standard and would be made mandatory under the relevant international conventions, together with revised Framework and

Procedures for the implementation of the IMO Member State Audit Scheme (IMSAS), adopted in 2013. The Assembly, at the same time, urged Governments to continue to volunteer and make themselves available for audits under the mandatory IMO instruments previously covered by the VIMSAS, leading up to the entry into force of the amendments to relevant conventions to make the III Code mandatory, when the new IMSAS would become fully effective, possibly in 2016. These important developments are captured in the Regional Strategy, under Specific Objective 3.

Implementation of the Strategy

3.23 Full and effective implementation of the Regional Strategy depends, *inter alia*, on three main factors:

- .1 the political will of Contracting Parties;
- .2 the capacity of REMPEC to respond to the demands of Contracting Parties in the preparation of documents, such as guidelines and other enabling instruments, and in the coordination and organisation of activities; and
- .3 the provision of adequate human and financial resources.

3.24 First of all, the political willingness of Contracting Parties to take action in the field of prevention of and response to marine pollution from ships has already been demonstrated by the adoption of several instruments emanating from the framework of the Barcelona Convention, especially the Prevention and Emergency Protocol. However, a sizeable number of Contracting Parties were not able to accomplish many of the Specific Objectives adopted through the original 2005 Regional Strategy. It is, therefore, evident that further concrete action is necessary in order to give meaningful effect to the political and legal commitments which the adoption of the Protocol and its associated strategies and action plans imply. Moreover, the continuous occurrence of pollution incidents in the region will surely help to focus governments' minds on the importance of addressing these issues.

3.25 Secondly, it is important to ensure that REMPEC is given adequate human resources and facilities in order to fulfil its responsibilities in assisting Contracting Parties to enhance their national capabilities and in facilitating regional cooperation. Specifically, additional dedicated staff will be required during the period covered by the Regional Strategy to enable REMPEC to discharge its mandate. Considering that the financial situation is currently going through a delicate period, the provision of adequately trained officials seconded by Contracting Parties to work at REMPEC for limited periods of time (e.g. two years) would allow the Centre to carry out its mandate under the Regional Strategy in a thorough and timely manner. Such secondments would also have the additional benefit of enabling the seconded officers to deepen their understanding and knowledge of the UNEP/MAP's regime in general and of REMPEC's activities in particular.

3.26 Thirdly, it is recognised that, in many cases, the lack of implementation and enforcement of the actions involved is the result of inadequate human and financial resources being allocated within the Administrations to carry out the tasks required. Hence, in order to achieve the goals and objectives of the Regional Strategy, it will be essential for all Contracting Parties to ensure that governments, including the national maritime and marine environment authorities, are aware of the importance of the issues addressed by the Prevention and Emergency Protocol and its associated strategies and action plans and allocate the necessary additional resources to fulfil the tasks in question. In this connection, it can be envisaged that some funds may become available from the specialised agencies of the UN system, e.g. IMO, to carry out tasks which would also help to fulfil the mandates of these organisations and agencies. Furthermore, financial support for clearly defined projects which also meet the EU's objectives might be obtained through the various funding mechanisms of the European Union.

3.27 Finally, within the structure of the Euro-Mediterranean partnership, there is a clear role for REMPEC to play in the implementation of projects aimed at further introducing the EU legislative framework, adapted as necessary, to the national rules and regulations of Mediterranean coastal States that are non-EU members, in order to ensure a coherent, effective and uniform implementation of the applicable international regulatory framework addressing maritime safety and the prevention of and response to pollution from ships in the Mediterranean. The relevant European Union legislation and the applicable international (IMO) conventions are listed in **Appendix II**.

National Action Plan

3.28 In addition to the above remarks and observations, it may be argued that the main cause behind the perceived poor implementation at the national level of many of the Specific Objectives of the 2005 Regional Strategy has been the lack of a well-structured and specific National Action Plan which would have helped the responsible authorities to face their obligations in an organised and timely manner, with the support of adequate budgetary provisions. A new specific sub-objective has, therefore, been integrated into Specific Objective 3 – Ensuring effective maritime Administrations to request the establishment, with the support of REMPEC, of National Action Plans (NAP) which would define the required actions to enable each country to implement the Regional Strategy and other obligations under regional and international instruments. Such initiative would also facilitate the linking of the NAP with IMO efforts concerning the definition of IMO instruments compliance gaps, the IMO Member State Scheme Audit Scheme (IMSAS), including the IMO Instruments Implementation Code (III Code), IMO's plans to assist developing countries with the preparation of national maritime policies focusing on IMO related issues and, ultimately, to define a plan of action to fill the identified gaps.

4 SPECIFIC OBJECTIVES

4.1 Ratification of relevant international maritime conventions related to the protection of the marine environment

In addition to the Barcelona Convention and its relevant Protocols there are a number of international conventions which address the prevention of and response to pollution from ships. The most important of these is the International Convention on the Prevention of Pollution from Ships, commonly known as MARPOL Convention, and its six annexes. Other relevant conventions, mainly those adopted under the auspices of IMO, are listed in **Appendix II** to the present Regional Strategy. There remain a number of gaps in Mediterranean coastal States' ratification of the relevant international conventions. It is therefore essential that, in order to establish and maintain the comprehensive legal basis that would enable coastal States to take the necessary action to prevent and respond to cases of pollution by ships in the Mediterranean Sea, all Mediterranean coastal States take action, where necessary, to ratify and simultaneously ensure the effective implementation and enforcement of these conventions according to the priorities indicated hereunder. As part of its mandate, REMPEC will also provide Mediterranean coastal States, which so request, with advice and assistance in this respect.

In particular, with the adoption of the Mediterranean Strategy on Ships' Ballast Water Management (the BWM Mediterranean Strategy), including its associated Action Plan and Timetable, the efforts of Contracting Parties engaged in the process of ratifying the International Convention for the Control and Management of Ships' Ballast Water and sediments, 2004 should be coordinated with the implementation of the BWM Mediterranean Strategy. In this respect, REMPEC should be expected to play an essential role in the coordination of the implementation of the BWM Mediterranean Strategy's Action Plan and also in its role as the Regional Coordinating Organisation (RCO) for the implementation of the GloBallast Partnerships Project in the Mediterranean in collaboration with the Regional Activity Centre for Specially Protected Areas (RAC/SPA).

Outputs relating to the Contracting Parties

- a) Necessary actions are taken to ratify and implement, with *high priority*, the MARPOL Convention and its six annexes, to ensure their transposition into national law, placing special emphasis on revised Annex V (Regulations for the prevention of pollution by garbage from ships) and Annex VI (Regulations for the prevention of air pollution from ships) as amended, and to cooperate through REMPEC to ensure full compliance with its provisions;
- b) Necessary actions are taken to ratify and implement, with *high priority*, other IMO relevant international conventions and to ensure their transposition into national law by the same time and full compliance with their provisions, in particular, but not limited to:
 - i) the 2001 International Convention on the Control of Harmful Anti-fouling Systems on Ships;
 - ii) the International Convention for the Control and Management of Ships' Ballast Water and sediments, 2004, including its associated Guidelines and other related recommendations, in coordination with the implementation of the Mediterranean Strategy on Ships' Ballast Water Management;
 - iii) the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009;
 - iv) the 1992 International Convention on Civil Liability for Oil Pollution Damage;
 - v) the 2001 International Convention on Civil Liability for Bunker Oil Pollution Damage;
 - vi) the 1992 International Fund for Compensation for Oil Pollution Damage;
 - vii) the 2003 Protocol on the Establishment of a Supplementary Fund for Oil Pollution Damage;
 - viii) the 2010 Protocol to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996;
 - ix) the 2007 Nairobi International Convention on the Removal of Wrecks;
 - x) the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 90 Convention) and its 2000 Protocol on Preparedness, Response and Co-operation to pollution incidents by Hazardous Substances (2000 OPRC-HNS Protocol); and
 - xi) the 1996 London Protocol on Prevention of Pollution by Dumping of Wastes and Other Matter².

Outputs relating to the Secretariat, depending on the availability of resources

²Any work carried out at IMO level on the London Protocol should be streamlined with the Barcelona Convention Protocol for the Prevention of Pollution in the Mediterranean Sea by Dumping from Ships and Aircraft under the responsibility of MEDPOL.

- c) , Advice and assistance provided to Mediterranean coastal States, which so request ,in order to meet the priorities set forth in sub-paragraphs (a) and (b) above;
- d) Assistance provided to Mediterranean coastal States, which so request, in their efforts to ratify and implement the International Convention for the Control and Management of Ships' Ballast Water and sediments, 2004, in conjunction with the implementation of the Mediterranean Strategy on Ships' Ballast Water Management and of the GloBallast Partnerships Project in the Mediterranean in collaboration with the Regional Activity Centre for Specially Protected Areas (RAC/SPA); and
- e) Assistance provided for the above purposes under the IMO's Integrated Technical Cooperation Programme.

4.2 To control and manage ships' biofouling to minimise the transfer of invasive aquatic species

In addition to the transfer of invasive aquatic species through ships' ballast water, addressed in the 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments, studies have shown that biofouling can also be a significant vector for the transfer of such species. Biofouling on ships entering the waters of the Mediterranean may result in the establishment of invasive aquatic species which may pose serious threats to human, animal and plant life, economic and cultural activities and the aquatic environment as a whole. On the other hand, the 2001 International Convention on the Control of Harmful Anti-Fouling Systems on Ships focuses on the prevention of adverse impacts from the use of anti-fouling systems and the biocides they may contain, but it is not meant to prevent the transfer of invasive aquatic species.

Cognisant that the potential for invasive aquatic species transferred through biofouling to cause harm had been recognised not only by IMO, but also by the Convention on Biological Diversity (CBD), several UNEP Regional Seas Conventions (e.g., the Barcelona Convention), the Asia Pacific Economic Cooperation forum (APEC), and the Secretariat of the Pacific Region Environmental Program (SPREP), the IMO's Marine Environment Protection Committee adopted the 2011 Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species, while requesting Member States to take urgent action in applying the Guidelines when adopting measures to minimise the risk of introducing invasive aquatic species via biofouling.

These Guidelines are intended to provide a globally consistent approach to the management of biofouling. As scientific and technological advances are made, the Guidelines will be refined to enable the risk to be more adequately addressed. Port States, flag States, coastal States and other parties that can assist in mitigating the problems associated with biofouling should exercise due diligence to implement the Guidelines to the maximum extent possible. As part of its mandate, REMPEC will be expected to provide Mediterranean coastal States, which so request, with advice and assistance in this respect.

Outputs relating to the Contracting Parties

- a) Application of the 2011 Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species, with *medium priority*, when adopting measures to minimise the risk of introducing such species via biofouling, and any experience gained in their implementation is reported to IMO;
- b) Dissemination of the Guidelines to the shipping industry and other interested parties, which are requested to cooperate in minimising the risks involved; and

Outputs relating to the Secretariat, depending on the availability of resources

- c) Advice and assistance provided to Mediterranean coastal States, which so request, in order to fulfil the aims under sub-paragraphs (a) and (b) above.

4.3 Ensuring effective maritime administrations

The successful implementation of relevant international instruments is very much dependant on ensuring that ships comply with internationally required standards at all times. This of course requires States to make sure that they have in place effective maritime administrations capable of discharging effectively their flag State, port State and coastal State obligations in line with the associated IMO recommendations and guidelines. In this connection, the IMO Assembly adopted in 2013 key resolutions and amendments relating to the Organization's mandatory audit scheme, paving the way for the scheme to come into effect by 2016. The mandatory audit scheme is seen as a key tool for assessing Member States' performance in meeting their obligations and responsibilities as flag, port and coastal States under the relevant IMO treaties and then offering the necessary assistance, where required, for them to meet their obligations fully and effectively.

At the same time, the Assembly adopted the IMO Instruments Implementation Code (III Code), which provides a global standard to enable States to meet their obligations as flag, port and/or coastal States; the Framework and Procedures for the IMO Member State Audit Scheme; the 2013 non-exhaustive list of obligations under instruments relevant to the III Code; and a resolution on transitional arrangements from the voluntary to the mandatory scheme. All of these are seen as essential documents which, if thoroughly applied, will guarantee an effective and efficient maritime administration.

One of the important obligations under the MARPOL Convention and other international treaties is the requirement that officers from the maritime administrations carry out regular inspections on ships flying their own flag and on foreign flag vessels visiting their ports to ensure that they comply with the relevant provisions of the MARPOL and other applicable conventions. The problem is that although checks may be carried out, the quality of the inspection can vary from port to port and from officer to officer. Although there is a need to increase the number of inspections in order to identify substandard ships, it is essential first to improve the quality of those inspections. It is suggested that this can be achieved by focusing more attention on the training of inspection officers from the Mediterranean coastal States. In this regard, REMPEC could play a crucial role in training ship inspectors to carry out ship inspections related to international marine environment protection conventions, in particular, the MARPOL convention. This effort should be undertaken in consultation and cooperation with other relevant organisations, such as EMSA, in order to avoid overlapping of activities and enhance efficiency.

The full implementation of the present Regional Strategy should also be a measure of the effectiveness of a maritime administration. A well-structured and specific National Action Plan clearly defining the procedures and required actions that will help each country to implement the Strategy will ensure, or at least facilitate, the attaining of the aims and objectives of the Strategy with the support of REMPEC. Such initiative would also facilitate the linking of the NAP with IMO efforts concerning the definition of IMO instruments compliance gaps, *inter alia* the IMO Member State Scheme Audit Scheme (IMSAS), including the IMO Instruments Implementation Code (III Code), IMO's plans to assist developing countries with the preparation of national maritime policies focusing on IMO related issues, and, ultimately, to define a plan of action to fill the identified gaps. In other words, the NAPs would provide a useful tool to assess progress in individual countries and guide them in their implementation efforts in a tailored manner, including the carrying out of a national assessment and the definition of the remedial action that may be deemed necessary.

Outputs relating to the Contracting Parties

- a) National Action Plans (NAP) prepared, with *high priority*, with the assistance of REMPEC if necessary, to enable the assessment of progress made, and to guide the full implementation of the Regional Strategy in a tailored manner, and to conduct a national assessment of the capabilities and define the necessary remedial action;
- b) All Mediterranean coastal States that have not already done so, have enhanced with *high priority*, the performance of maritime administrations on the basis of the National Action Plan (NAP) mentioned above, by conducting a self-assessment of national capabilities and performance in giving full and complete effect to MARPOL and other applicable conventions, by using the guidance set out in the relevant IMO Resolution dealing with the self-assessment of flag State performance³ and other relevant IMO recommendations and guidelines⁴;
- c) All Mediterranean coastal States that have not already done so, in their efforts to protect the marine environment and once the self-assessment mentioned in subparagraph a) above has been carried out successfully and any remedial action taken, have undertaken the IMO Member State Audit Scheme, using the III Code as the audit standard and following the Framework and Procedures for the IMO Member State Audit Scheme, once it is fully institutionalised when the said III Code becomes mandatory under MARPOL and other Conventions, expectedly in 2016;

Outputs relating to the Secretariat, depending on the availability of resources

- d) Assistance provided to the Mediterranean coastal States which so request in the development of the National Action Plan mentioned in sub-paragraph a) above, designed to enable them to assess progress made, to guide them in the full implementation of the Regional Strategy in a tailored manner, and to conduct a national assessment of their capabilities and define the necessary remedial action;
- e) Continuous assistance provided to Mediterranean coastal States which so request in enhancing the performance of their maritime administrations in line with new IMO developments, in particular IMSAS;
- f) Support provided to the Mediterranean coastal States which so request to prepare for undertaking the IMO Member State Audit Scheme, having explored the possible technical assistance to which some of them may be entitled under the IMO's Integrated Technical Cooperation Programme and other sources; and
- g) Continuous improvement of the knowledge and expertise of flag State inspection officers by establishing, through REMPEC, a programme of training activities related to relevant international instruments, in particular MARPOL, ensuring appropriate training for ship inspectors.

4.4 To strengthen the Memorandum of Understanding (MoU) on port State control (PSC) in the Mediterranean region (Mediterranean MoU)

In order to enhance the effectiveness of individual States in carrying out port State control inspections of ships under international maritime conventions, including in particular the MARPOL Convention, various regional Memoranda of Understanding have been agreed by the States concerned to enhance

³IMO Assembly resolution A.912 (22) – Self-assessment of flag State performance.

⁴The 2013 edition of the IMO publication entitled “MARPOL-How to do it” contains useful information on this issue.

their regional cooperation on this issue. The Paris MoU was adopted in 1982 to strengthen cooperation on port State control primarily between European States and, in the mid-1990s, a MoU for the Mediterranean region was adopted with its headquarters in Alexandria and an Information Centre in Morocco.

The EU Directive 2009/16/EC sets out an inspection commitment for EU Member States which is based on a Ship Risk Profile. Ships may also be prioritised for inspection following complaints received from any person or entity with a legitimate interest. Furthermore, it includes the possibility to ban ships from the EU ports. The Mediterranean MoU sets out an inspection level of 15% inspections, but this target is not yet achieved and, moreover, a different detention policy is followed.

The enlargement of the EU, whereby two members of the Mediterranean MoU fall under the rules of the EU Directive, deserves full attention. During that time, REMPEC has played, and should continue playing, an enabling role in improving the effectiveness of the Mediterranean MoU and enhancing the cooperation between the Mediterranean MoU and the Paris MoU.

In order to achieve the Specific Objective of strengthening the Memorandum of Understanding on port State control in the Mediterranean region,

Outputs relating to the Contracting Parties

- a) The mandate to REMPEC whereby the Centre should, if and when possible, offer its assistance to the Mediterranean MoU on port State control in order to improve its effectiveness and, if so requested, to facilitate cooperation between the Paris MoU and the Mediterranean MoU is maintained;
- b) the necessary resources and means to enable the Mediterranean MoU to function efficiently are made available, *with high priority*;

Outputs relating to the Secretariat, depending on the availability of resources

- c) Participation in the meetings of the MoU Committee;
- d) The Secretariat is associated with port State control training activities addressing environmental matters, including those related to Anti Fouling Systems, Ballast Water Management and biofouling, where appropriate, in collaboration with recognised training institutions within the region; and
- e) The Secretariat works in association with the MoUs on port State control, in particular with the Paris MoU, on the organisation and follow-up analysis of concentrated inspection campaigns on MARPOL-related deficiencies.

4.5 Provision of reception facilities in ports

The MARPOL Convention requires its Parties to ensure the provision of port reception facilities that can receive shipboard residues and mixtures covered under its various annexes. This is a requirement that is also reflected in the Prevention and Emergency Protocol and in relevant EU legislation. Therefore, failure to provide such facilities will mean a breach of international commitments and, furthermore, may give way to unscrupulous ship operators to illegally discharge prohibited matter into the sea. The need to avoid these discharges is crucial in the case of a virtually closed body of water, such as the Mediterranean Sea. Although this rationale is well known and has been underscored time and time again ever since MARPOL was adopted, some coastal States still find it difficult, possibly on account of perceived excessive cost, to provide even their major ports with the reception facilities they are obliged to under the MARPOL annexes they have ratified and the associated European and regional legislation.

Some Contracting Parties continue facing a number of problems associated with the lack of adequate port reception facilities in the Mediterranean region. Firstly, there is still a lack of sufficient guidance on the technical requirements for providing adequate reception facilities for the different types of ship-generated waste and cargo residues, although this issue was addressed in particular by the MEDA project⁵. Secondly, there is the problem of ultimate disposal of the wastes in environmentally satisfactory conditions. This is essentially a waste management problem and requires the establishment of appropriate procedures between the port authority (which generally is not a waste disposal authority) and the local waste management authorities for the different types of waste (e.g. garbage comparable to municipal waste; oily wastes and sludge which may be suitable for delivery to refineries for reprocessing or to appropriate users as fuel oils). Thirdly, there is the question of cost for the provision of reception facilities and the need to observe, *inter alia*, the polluter pays principle which implies that the ships using the facilities should pay for their services. The EU Directive 2000/59/EC⁶ regulates this and other related issues as far as the EU Member States are concerned, whereas at the international level, the latest edition of the IMO Comprehensive Manual on Port Reception Facilities⁷, the Guide to Good Practice for Port Reception Facility Providers and Users⁸, the Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities⁹ and the new requirements incorporated in the relevant MARPOL Annexes since 2005, in particular the revision of MARPOL Annex V and developments in the categorisations of cargo-associated waste, should also be taken fully into account.

At the regional level, in conformity with the objectives and principles of the Regional Plan on Marine Litter Management adopted by the Contracting Parties in the Framework of Article 15 of the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol), the Contracting Parties shall, according to Article 9 of the Regional Plan on Marine Litter Management and in accordance with Article 14 of the Prevention and Emergency Protocol, explore and implement to the extent possible by 2017, ways and means to charge reasonable cost for the use of port reception facilities or when applicable, apply a No-Special-Fee system. The Contracting Parties shall also take the necessary steps to provide ships using their ports with updated information relevant to the obligation arising from Annex V of the MARPOL Convention and from their legislation applicable in the field.

In conformity with article 10 of the Regional Plan on Marine Litter Management, the Contracting Parties undertake to explore and implement, by the year 2019, to the extent possible, measures to charge reasonable costs for the use of port reception facilities or, when applicable apply No-Special-Fee system, in consultation with competent international and regional organisations, when using port reception facilities for implementing the measures provided for in Article 10.

The question of payment for port reception facilities is an important issue in order to ensure that charges are not prohibitively high so as to encourage ships' masters to contravene the Convention by discharging wastes at sea. On the other hand, differences in practice between one port and the next, including whether or not waste management fees are charged as an additional cost to users of the reception facilities or are incorporated within the port due, can lead to distortions in the use of reception facilities and could lead to significant waste management burdens on those providing such facilities at cheaper cost. In order to ensure that waste management fees are not a disincentive to the use of reception facilities in Mediterranean ports, Mediterranean coastal States should address this issue.

⁵ MEDA Project on port reception facilities for collecting ship-generated garbage, bilge waters and oily wastes (MED.B7.4100.97.0415.8).

⁶ Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues.

⁷ Expected to be approved by MEPC 68 in 2015 with the new title "Port Reception Facilities - How to do it".

⁸ Circular MEPC.1/Circ.671/Rev.1.

⁹ Resolution MEPC.83 (44).

In order to meet the Specific Objective of providing adequate reception facilities in ports,

Outputs relating to the Contracting Parties

- a) Provision of adequate reception facilities in their ports, with *high priority*, unless specified otherwise and if appropriate action has not been already taken and procedures related to the cost of the use of such facilities have been considered, enabling their use as soon as they are available at a fee which should be reasonable and should not serve as a disincentive for their use;
- b) For garbage, with *high priority*:
 - i. all major ports have installed facilities for the collection of garbage and procedures for its disposal; and
 - ii. collection and disposal procedures for garbage are in place for all major ports.
- c) For oily wastes, with *high priority*:
 - i. all major ports have established collection, treatment and disposal procedures for bilge waters, oily residues and dirty ballast waters; and
 - ii. collection, treatment and disposal procedures for bilge waters, oily residues and dirty ballast waters are in place for all major ports.
- d) For Noxious Liquid Substances (NLS) , with *high priority*:
 - i. all major ports handling NLS have established collection, treatment and disposal procedures for NLS; and
 - ii. collection, treatment and disposal procedures for NLS are in place for all major ports.
- e) For sewage, with *high priority*:
 - i. all major ports have established collection and treatment procedures for sewage; and
 - ii. collection and treatment procedures for sewage are in place for all major ports.
- f) For ozone-depleting substances and exhaust gas cleaning residues, with *medium priority*:
 - i. all major ports have established collection and treatment procedures for ozone-depleting substances and exhaust cleaning residues; and
 - ii. collection and treatment procedures for such substances and residues are in place for all major ports.
- g) For ballast water and sediments, with *high priority*:
 - i. all major ports and terminals where cleaning or repair of ballast tanks occurs have endeavoured to take action to be in a position to comply with the provisions of the 2004 Ballast Water Convention by its entry-into-force date or as soon as possible thereafter.

Outputs relating to the Secretariat, depending on the availability of resources

- h) Well-structured advice provided to Mediterranean coastal States, which so request, that may include, but not necessarily limited to, assessing the type, specifications, and capacity of the equipment necessary at major ports to efficiently and effectively handle shipboard residues and mixtures. Such assistance may also include preparation of guidelines or sample form of operation plans. All this should be based on previous work done on this matter and taking into account the latest edition of the IMO Comprehensive Manual on Port Reception Facilities, the IMO Guide to Good Practice for Port Reception Facility Providers and Users and the new requirements incorporated since 2005 in the relevant mandatory instruments, to assist Contracting Parties in the accomplishment of this objective; and
- i) Contribution to the implementation of the Regional Plan on Marine Litter Management, as deemed appropriate, in preparing the advice mentioned in subparagraph h) above, in particular for the preparation of specific guidelines to determine the application of charges at reasonable costs for the use of port reception facilities or, where appropriate, the application of a No-Special-Fee system, in consultation with various relevant regional and global institutions and initiatives.

4.6 Delivery of ship-generated wastes

The provision of port reception facilities is not an end in itself but the means to achieve an end, namely the prevention of marine pollution by illegal discharges. However, some vessels may have sufficient dedicated storage capacity on board to deliver their wastes at another port of call without risking illegal discharge at sea. In such cases it is important to establish a system whereby a port notifies the authorities in the vessel's next port of call about the status of the ship's waste storage conditions in order that the authorities in the next port of call can inspect the vessel to ensure that there has been no illegal discharge in transit.

In some cases the port authorities may deem it essential that the ships concerned deliver their waste to port reception facilities before leaving the port. It is important, therefore, that the appropriate port authorities have adequate national powers to enforce such a decision.

In order to meet the Specific Objective of improved control of ship-generated wastes,

Outputs relating to the Contracting Parties

- a) Establishment, with *high priority* and if appropriate action has not been already taken, of a system of notification to a vessel's next port of call of the status of its on board retention of bilge waters, oily wastes, HNS residues, sewage, garbage, ozone-depleting substances and exhaust gas cleaning residues;
- b) implementation by all Mediterranean coastal States, with *high priority*, of national regulations empowering maritime authorities to require, if they deem it necessary, the Masters of vessels to discharge wastes into designated port reception facilities before sailing; and

Outputs relating to the Secretariat, depending on the availability of resources

- c) Advice provided on the subject as may be requested by Contracting Parties, possibly in association with the well-structured advice requested under the Specific Objective on the provision of reception facilities in ports, taking also into account, where appropriate, the Regional Plan on Marine Litter Management.

4.7 Improved follow-up of pollution events as well as monitoring and surveillance of illicit discharges

Although under the 2005 Regional Strategy this Specific Objective called for the establishment, by 2010, of systems and procedures for national monitoring and surveillance, with the exception of a few Mediterranean coastal States, which have already set up aerial surveillance of the waters under their jurisdiction, there continues to be a general lack of monitoring and surveillance of Mediterranean waters, necessary for the effective implementation of the MARPOL Convention. This lack of surveillance keeps inviting unscrupulous ship operators to discharge illicit wastes without fear of detection.

If the Prevention and Emergency Protocol is to have any meaning, it will be essential for all Contracting Parties to embark on a regular system of national aerial surveillance. The burden of surveillance may be shared by allowing the aircraft of a neighbouring State to overfly the waters under the jurisdiction of another State for the purposes of monitoring compliance with the MARPOL Convention. There are various regions of the Mediterranean, which lend themselves to such sub-regional cooperation. Nevertheless, the aerial surveillance should always be complemented by maritime patrols.

In addition to surveillance by aircraft and patrol boats, cooperation and exchange of information on satellite surveillance should be enhanced for improving the detection of illicit discharges in the entire Mediterranean region. The extension to all Contracting Parties to the Barcelona Convention of the CleanSea Net services offered by EMSA to EU Member States and recently made available to the beneficiary countries of the Project Euromed Cooperation on Maritime Safety and Prevention of Pollution from Ships III (Safemed III) (e.g. Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, the Palestinian Authority, and Tunisia) and to REMPEC, should be explored in cooperation with REMPEC.

REMPEC, on the other hand, implemented two projects regarding this issue, namely the Marine & Coastal Environmental Information Services Project (MARCOAST) Project and the Aerial & Satellite surveillance of Operational Pollution in the Adriatic Sea (AESOP) Project, between 2007 and 2009 and has organised a number of activities, for instance, the Coordinated Aerial Surveillance Operations for illicit ship pollution discharges (opérations de surveillance coordonnée aérienne des rejets des navires en Méditerranée – OSCAR-MED) in October 2009 and June 2013. With the continuous support of REMPEC, such operations should be intensified and carried out on a regular basis in the entire region and should be coordinated with measures undertaken for the enforcement and the prosecution of discharge offenders as further detailed in the following Specific Objective 8.

In order to meet the Specific Objective of improved monitoring and surveillance of illegal discharges,

Outputs relating to the Contracting Parties

- a) Establishment, with *high priority* and if appropriate action has not been already taken, of systems and procedures for national and sub-regional monitoring and surveillance including, where practicable, regular individual or coordinated aerial surveillance¹⁰ in the waters under the jurisdiction of Contracting Parties, if the Parties so agree, and results reported to the regular meetings of REMPEC Focal Points;

¹⁰ Aerial Surveillance: refers only to the monitoring and surveillance of illicit discharges by aircraft carried out with the approval of the concerned States

- b) Establishment, with *high priority*, of sub-regional systems, including procedures to over-fly the waters¹¹ under the jurisdiction of a neighbouring State if the neighbouring Parties so agree, for surveillance of environmentally sensitive and/or high risk zones of the Mediterranean Sea;

Outputs relating to the Secretariat, depending on the availability of resources

- c) Analysis, as far as practical, through direct correspondence with the Contracting Parties, of the reasons behind the poor record of compliance with this objective by many Contracting Parties;
- d) Continuous organisation and participation in, funding and human resources permitting, any new activities on this issue where the Centre is requested to play a role, building on the experience gathered from the activities carried out on national monitoring and surveillance;
- e) Facilitation of the organisation of regular coordinated or individual aerial surveillance operation for illicit ship pollution discharges;
- f) the continuation of the CleanSea Net services offered by EMSA available to all Contracting Parties to the Barcelona Convention that are not Member States of the EU, currently through the SAFEMED III Project, until 2021 and beyond; have been explored, and
- g) in carrying out the above requests, cooperation with other Regional Agreements and EMSA.

4.8 To improve the level of enforcement and the prosecution of discharge offenders¹²

Even though many Mediterranean coastal States have ratified the MARPOL Convention, not all countries have yet established a national legal framework to effectively implement the Convention and, in particular, a comprehensive framework to enforce the provisions and prosecute offenders, although it is understood that the remaining countries are in the process of adopting enabling national legislation.

Although the subject is complex, much progress has been made within the framework of the Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil and Other Harmful Substances (Bonn Agreement) and Baltic Marine Environment Protection Commission - Helsinki Commission (HELCOM) for dealing with such issues in the North and Baltic Seas, as well as in the part of the Mediterranean covered by Lion Plan and RAMOGE agreement, and there is considerable scope for other Mediterranean coastal States to benefit from this experience.

REMPEC has assisted Mediterranean countries to establish an appropriate legal framework for the transposition into national legislation of the provisions of the MARPOL Convention relevant to illicit discharges. An assessment of the situation with respect to MARPOL Annex I implementation was carried out in Mediterranean countries which are not EU member States. Other efforts of the Centre have focused on enhancing the knowledge of legal personnel, prosecutors and magistrates and facilitating judicial cooperation and the establishment of possible common procedures, which ultimately led to the establishment of the Mediterranean Network of Law Enforcement Officials relating to MARPOL within the framework of the Barcelona Convention (MENELAS), whose terms of reference were adopted by the 18th Ordinary Meeting of the Contracting Parties of the Barcelona Convention.

¹¹ Over-fly the waters: refers only to the monitoring and surveillance of illicit discharges by aircraft carried out with the approval of the concerned States

¹²Reference is made to IMO Assembly Resolution A.787 (19), as amended by Resolution A.882 (21). The IMO publication entitled "MARPOL-How to do it" contains useful information in relation to the issues of "Prosecuting offences" and "Pollution detection and response".

Although much effort has been made to accomplish this task under the 2005 Regional Strategy, there are still some Contracting Parties that need to take action on this issue. Therefore, in order to achieve the Specific Objective of improving the level of enforcement and the prosecution of discharge offenders within the Mediterranean region:

Outputs relating to the Contracting Parties

- a) All Mediterranean coastal States have ensured, with *high priority*, the existence of a national legal framework (regulations) as a basis for prosecuting discharge offenders for infringements of the MARPOL Convention or of any national legal framework implementing it;
- b) Active participation, with *high priority*, in the Mediterranean Network of Law Enforcement Officials relating to MARPOL within the framework of the Barcelona Convention in accordance with its terms of reference;

Outputs relating to the Secretariat, depending on the availability of resources

- c) Continuous support provided to Contracting Parties, acting as the Secretariat of MENELAS and reports on its activities are submitted to the Contracting Parties at each of their Ordinary Meetings;
- d) maintenance of the MENELAS information system; and
- e) Collaboration with UNEP/MAP Secretariat to further exploit possible synergies with the Regional Seas framework such as the North Sea Network of investigators and Prosecutors (NSN), the Baltic Sea Network of Environmental Crime Prosecutors (ENPRO) and EMSA in the framework of MENELAS.

4.9 To reduce the pollution generated by pleasure craft activities

Following the outcome of preparatory work for the development of a legal regional instrument dealing with prevention of pollution from pleasure craft activities in the Mediterranean in collaboration with Institut du Droit Economique de la Mer (INDEMER); the outcome of the Thirteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention; and the decision of the Meeting of National Experts on the Feasibility of a Legal Regional Instrument on Prevention of Pollution from Pleasure Craft Activities in the Mediterranean held in Monaco in 2004, a set of Principles to serve as a framework for the further development by REMPEC of Guidelines on prevention of pollution from pleasure craft activities in the Mediterranean was agreed.

Under the 2005 Regional Strategy, the Contracting Governments agreed that the above-mentioned Guidelines should be prepared and implemented together with the relevant provisions of the MARPOL Convention. Consequently, REMPEC, in close cooperation with IMO, developed the subject Guidelines, which were eventually adopted by the 15th Ordinary Meeting of the Contracting Parties, renamed as the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean¹³. The purpose of these Guidelines is to assist Governments when developing, improving and enacting domestic laws and taking appropriate measures, with a view to implementing international and regional regulations applicable to the prevention of pollution of the marine environment from pleasure craft activities. They are also intended to users of pleasure craft and managers of marinas to encourage them to apply proper environmental practices and to comply with the relevant requirements, and should also serve to assist in planning and developing the environmental performance of marinas.

¹³ UNEP/MAP Decision IG 17/9

Additionally, Contracting Parties implementing the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean should also refer to the Regional Plan on Marine Litter Management, as appropriate.

Taking into consideration the Guidelines referred to above, and in order to meet the Specific Objective of reducing pollution problems generated by pleasure craft,

Outputs relating to the Contracting Parties

- a) Implementation, with *high priority*, of the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean, in conjunction with the relevant provisions of the MARPOL Convention and the Regional Plan on Marine Litter Management;
- b) Measures undertaken to implement the said Guidelines reported to the Secretariat;

Outputs relating to the Secretariat, depending on the availability of resources

- c) Assistance provided to Mediterranean coastal States in the implementation of the Guidelines referred to in subparagraph a) above, taking into account the relevant provisions of the MARPOL Convention and the Regional Plan on Marine Litter Management; and
- d) recordkeeping of the reports sent by the Contracting Parties under sub-paragraph b) above and submission of periodical synthetic reports to the relevant meetings of the Contracting Parties.

4.10 Reduced risk of collisions by establishing Ship's Routeing Systems

The objective of ships' routeing is to improve the safety of navigation, and therefore the prevention of marine pollution by ships, in converging areas and in areas where the density of traffic is great or where freedom of movement of shipping is inhibited by restricted sea room, the existence of obstructions to navigation, limited depths or unfavourable meteorological conditions. Traffic separation schemes and other ship routeing systems have now been established in most of the major congested shipping areas of the world, and the number of collisions and groundings has often been dramatically reduced.

IMO's responsibility for ships' routeing is enshrined in Chapter V of the International Convention for the Safety of Life at Sea, 1974 (SOLAS), which recognises the Organization as the only international body for establishing such systems. As well as traffic separation schemes, other routeing measures adopted by IMO to improve safety at sea include two-way routes, recommended tracks, deep water routes, precautionary areas, and areas to be avoided.

Some Ship's Routeing Systems have already been established in the Mediterranean. However, there may be scope for creating additional systems, at least in narrow passages and in the region of the most sensitive coastal areas.

The establishment of a network of Marine/Maritime Highways as a succession of the network of physically-defined navigation routes and Traffic Separation Schemes (TSS), could ultimately support different aspects of the integrated perspective of marine and maritime affairs in the Mediterranean sea-basin, in view of the establishment of maritime spatial planning including *inter alia* the necessity to avoid some areas such as MPAs (Marine Protected Areas) and SPAMI (Specially Protected Areas of Mediterranean Importance); the monitoring and investigating of illicit discharges from ships; better response to emergencies, including search and rescue operations, emergency towing and pollution response; and organisation of the co-existence of multiple maritime activities. Considering the entry into force in July 2014 of the Directive 2014/89/EU of the European Parliament and of the Council

establishing a framework for maritime spatial planning, which should be transposed, by 2016, by EU Member States in view of the establishment of their Maritime Spatial Plans (MSP) by 2021, and noting that the Directive requires that EU Member States sharing a sea should cooperate to ensure that their MSPs are coherent and coordinated across the marine region, UNEP/MAP components including in particular the Priority Actions Programme/Regional Activity Centre (PAP/RAC), Regional Activity Centre for Specially Protected Areas and REMPEC have a key role to play in the establishment of MSPs in the Mediterranean region, should all Contracting Parties decide to follow that path.

In order to meet the Specific Objective of reducing the risk of collisions by establishing additional Systems and to potentially establish Maritime Spatial Plans in the Mediterranean region,

Outputs relating to the Contracting Parties

- a) Additional appropriate routeing systems in the Mediterranean are proposed to IMO, where necessary, for possible adoption in accordance with international law;
- b) Establishment of MSPs under national jurisdiction is considered, when and where possible, and without prejudice to the sovereign right of the States, in close collaboration with the relevant national competent authorities and in cooperation with other Mediterranean coastal States ensuring that their MSPs are coherent and coordinated across the Mediterranean region;

Outputs relating to the Secretariat, depending on the availability of resources

- c) Assistance provided to Contracting Parties that so request, either individually or collectively, in the identification of possible sea areas where a routeing system might be deemed necessary and in the preparation of the relevant documentation to initiate the process at IMO; and
- d) Support is provided, in close cooperation with other MAP components, to Contracting Parties which so require in their efforts toward the establishment of MSPs.

4.11 Improved control of maritime traffic

According to SOLAS chapter V on Safety of Navigation, specifically regulation 12, vessel traffic services (VTS) contribute to safety of life at sea, safety and efficiency of navigation and protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic. SOLAS Contracting Governments undertake to arrange for the establishment of VTS where, in their opinion, the volume of traffic or the degree of risk justifies such services, following the guidelines developed by the Organization, without prejudice of the rights and duties of Governments under international law or the legal regimes of straits used for international navigation and archipelagic sea lanes.

Maritime Traffic Control Systems, including VTS, are already established in some areas of the Mediterranean. There have already been incidents where coastal States have lost track of vessels which may pose a threat of pollution and there may be a case for establishing additional Maritime Traffic Control Systems in the Mediterranean region in order to effectively implement the Prevention and Emergency Protocol.

Through the SafeMed II Project, considerable efforts were made to enhance the capacities of Mediterranean coastal States related to the prevention of maritime accidents, particularly in relation to Vessel Traffic Services (VTS) management. An extensive Training Programme for VTS operators certified by the International Association of marine Aids to navigation and Lighthouse Authorities (IALA), VTS supervisors and VTS on-the-job training instructors funded by the SafeMed II Project was carried out in 2012 which enabled over 120 officials from the Mediterranean region to be trained in vessel traffic management. A SafeMed II Project Regional Workshop on the Long-Range Identification and Tracking of Ships (LRIT) was also organised in 2012 in cooperation with EMSA

and IMO to, *inter alia*, familiarise Mediterranean trainees with the LRIT legal and technical requirements. The SafeMed III Project, launched in June 2013 for a duration of 36 months, is built on and designed to consolidate the results achieved by SafeMed I and II.

At the European level, the need for permanent monitoring of ship movements led the European Union to adopt EU Directive 2002/59/EC¹⁴ which provides for a comprehensive vessel traffic monitoring and information system based on IMO requirements. In view of the need to improve the monitoring of ships in the Mediterranean, particularly those posing a risk to the marine environment, the potential of the EU System, which also includes the SafeSeaNet vessel traffic monitoring and information system, should be fully exploited by the Mediterranean coastal States. In this regard, every effort should be made to identify the possibilities that might exist for the development and establishment of an ad hoc infrastructure.

On the other hand, with the phasing out of single hull tankers carrying oil and other hazardous and noxious substances now complete, the risk of severe pollution that existed when such ships were allowed to operate has diminished considerably.

In order to implement the Specific Objective of improving the control of maritime traffic in the Mediterranean,

Outputs relating to the Contracting Parties

- a) Areas of the Mediterranean where control of maritime traffic could be improved by the establishment of a regime based on the use of Automatic Identification System (AIS) in conjunction with Vessel Traffic Services (VTS) and mandatory ship reporting systems, are identified and the approval procedures is completed as soon as possible thereafter;
- b) Improvement, on a continuous basis, of technical cooperation among VTS Centres of neighbouring countries and, according to the need, information is exchanged about ships by using AIS and other related systems in the common surveillance area; and

Outputs relating to the Secretariat, depending on the availability of resources

- c) The international financial assistance required to establish the regime referred to in subparagraph a) above, taking also into account, where appropriate, possible synergies with actions undertaken on the establishment of MSPs referred to under Specific Objective 10, is negotiated, with *high priority*, with appropriate organisations and agencies on behalf of the Contracting Parties which so request.
- d)

4.12 Identification of Particularly Sensitive Sea Areas (PSSAs)

The MARPOL Convention assigns certain sea areas the denomination of "special areas" in which, for technical reasons relating to their oceanographically and ecological conditions and to their sea traffic circumstances, the adoption of special mandatory methods for the prevention of marine pollution is required. Under the Convention, these special areas are provided with a higher level of protection than other areas of the sea. The Mediterranean Sea has been designated as a Special Area under MARPOL Annexes I (oil) and V (garbage).

It is also possible for Contracting Parties to identify maritime zones that require additional protection from international shipping and request their designation as Particularly Sensitive Sea Areas (PSSA).

¹⁴ Directive 2002/59/EC of the European Parliament and the Council 27 June 2002 establishing a community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC.

This is done by applying the Revised guidelines for the identification and designation of Particularly Sensitive Sea Areas (PSSAs)¹⁵. These guidelines include criteria to allow areas to be designated as PSSAs if they fulfil a number of criteria, including: ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem or vulnerability to degradation by natural events or human activities; social, cultural and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value. When an area is designated as a PSSA, certain protective measures are used to control the maritime activities in that area, such as routing measures, including traffic separation schemes and areas to be avoided; strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; installation of Vessel Traffic Services (VTS); and others. These associated protective measures become mandatory under the relevant international conventions (e.g. SOLAS, MARPOL, etc.) and, therefore, must be complied with by international shipping.

Outputs relating to the Contracting Parties, in order to meet the Specific Objective of identifying Particularly Sensitive Sea Areas:

- a) Maritime areas within their jurisdiction which need the protection afforded by their designation as PSSAs are ascertained, with *medium priority*, and the support of REMPEC and RAC/SPA and, if so ascertained, the process of requesting IMO to enable such designation is initiated;

Outputs relating to the Secretariat, depending on the availability of resources

- b) Initiation, on the request of Contracting Parties and in conjunction with RAC/SPA, of the process of identification of those areas which, after examination by the REMPEC Focal Points, could be proposed for designation as PSSAs taking also into account, where appropriate, possible synergies with actions undertaken on the establishment of MSPs referred to under Specific Objective 10;
- c) assistance is provided, in cooperation with IMO, to the Mediterranean coastal States which so request, to conduct the necessary studies and to prepare the relevant submissions to IMO for the designation of PSSAs, if any, in strict compliance with the applicable IMO Guidelines¹⁶; and
- d) possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme explored.

4.13 Reduction of marine noise caused by ships

Following the Contracting Parties commitment to progressively apply the Ecosystem Approach (EcAp) to the management of human activities with the goal of effecting real change in the Mediterranean marine and coastal environment, the UNEP/MAP Secretariat was mandated to prepare an Ecosystem Approach Monitoring Programme, and to integrate EcAp in the overall work of UNEP-MAP/Barcelona Convention. The reduction of marine noise from human activities was one of the ecological objectives.

Meanwhile, IMO Member States have raised concern over the years that a significant portion of the underwater noise generated by human activity may be related to commercial shipping. The international community recognises that underwater-radiated noise from commercial ships may have both short and long-term negative consequences on marine life, especially marine mammals. Subsequently, the IMO Marine Environment Protection Committee, with a view to providing guidance on the reduction of underwater noise from commercial shipping, approved the Guidelines for the

¹⁵IMO resolution A.982(24).

¹⁶Idem.

reduction of underwater noise from commercial shipping to address adverse impacts on marine life¹⁷ and invited Member Governments to use the Guidelines from 7 April 2014.

These non-mandatory Guidelines are intended to provide general advice about reduction of underwater noise to designers, shipbuilders and ship operators, and focus on primary sources of underwater noise associated with propellers, hull form, on board machinery, and operational aspects. Therefore, they do not require Governments to take any specific action other than bringing the advice to the attention of all parties concerned.

Outputs relating to the Contracting Parties

- a) Awareness raised, with *medium priority*, through the dissemination of the advice contained in the IMO Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life among their national designers and shipbuilders, as well as operators of ships flying their flag, urging them to implement noise mitigation strategies on board their ships; and

Outputs relating to the Secretariat, depending on the availability of resources

- b) Advice and assistance is provided to Mediterranean coastal States, which so request, in order to fulfil the objective under sub-paragraphs (a) above.

4.14 To establish procedures for the designation of places of refuge in order to minimise the risks of widespread pollution

In 2003, the 23rd Assembly of IMO, conscious of the possibility that ships at sea may find themselves in need of assistance relating to the safety of life and the protection of the marine environment, and recognising the importance of and need for providing guidance for the masters and/or salvors of ships in need of assistance, adopted the Guidelines on places of refuge for ships in need of assistance¹⁸. In doing so, the IMO Assembly recognised also the need to balance both the prerogative of a ship in need of assistance to seek a place of refuge and the prerogative of a coastal State to protect its coastline, and that the provision of a common framework to assist coastal States to determine places of refuge for ships in need of assistance and respond effectively to requests for such places of refuge would materially enhance maritime safety and the protection of the marine environment.

The purpose of the IMO guidelines is to provide ships' Masters, ship owners, salvors and Member Governments with a framework enabling them to respond effectively and in such a way that, in any given situation, the efforts of the Master and owner of the ship and the efforts of the government authorities are complementary. A second Assembly resolution on the establishment of Maritime Assistance Services¹⁹ to provide a focal point for the receipt of various reports and notifications required by various IMO instruments, was also adopted by the IMO Assembly in 2003. At the European level, directive 2009/17/EC amending Directive 2002/59/EC, which establishes a Community vessel traffic monitoring and information system, obliges EU Member States to draw up plans to accommodate, if the situation so requires, ships in need of assistance in their ports or in any other protected place in the best possible conditions, in order to limit the consequences of accidents at sea in the waters under their jurisdiction.

Considering that the designation of places of refuge associated with national plans to deal with ships in need of assistance are very valuable tools to protect the coastline against the devastating effects that a shipping accident occurring near the shore can have on the coastal environment of any State, it could

¹⁷Circular MEPC.1/Circ.833.

¹⁸IMO resolution A.949(23).

¹⁹IMO resolution A.950(23).

be worthwhile for Mediterranean coastal States to consider in greater depth the modalities for establishing places of refuge within the Mediterranean region, including the preparation of, for example, guidelines on additional equipment, which would be required in places of refuge to facilitate cargo transfers in environmentally safe conditions.

To that end, REMPEC has prepared the Guidelines on the Decision-Making Process for Granting Access to a Place of Refuge for Ships in Need of Assistance, which were adopted in 2008 by the 15th Ordinary Meeting of the Contracting Parties to the Barcelona Convention.

Outputs relating to the Contracting Parties

- a) Identification, with *high priority*, at the national level, of appropriate procedures as outlined in the relevant IMO Guidelines and relevant EU guidelines supplemented by the associated Guidelines and Principles prepared by REMPEC, in order to facilitate the decision making when designating a place of refuge for ships in need of assistance;
- b) all Mediterranean coastal States have drawn up plans to deal with ships in distress, including, appropriate equipment and means, as required, and have defined the modalities of the response according to its nature and to the risk incurred; and

Outputs relating to the Secretariat, depending on the availability of resources

- c) Continuous assistance provided to countries, which so request, to define procedures and draw up plans as specified in sub-objectives a) and b) above, and to raise funds, *inter alia*, from the IMO's Integrated Technical Cooperation Programme.

4.15 To examine the possibility of designating the Mediterranean Sea or parts thereof as a SO_x emission control area under MARPOL Annex VI and effectively implement the existing energy efficiency measures

MARPOL Annex VI, adopted by the Protocol of 1997, as amended in 2011²⁰, regulates the prevention of air pollution from ships in general and, in particular, establishes more stringent limits for emissions of sulphur oxides (SO_x), nitrogen oxides (NO_x) and particulate matter from ship engine exhausts, and introduces a new chapter 4 with regulations on energy efficiency for ships. With respect to sulphur oxides (SO_x), regulation 14 provides that the sulphur content of fuel oil shall not exceed 3.50% m/m, until 1 January 2020 when the limit will be reduced to 0.50% m/m depending on the outcome of a review, to be concluded in 2018, as to the availability of the required fuel oil. However, within SO_x Emission Control Areas (ECA), where a higher level of protection is needed due, for instance, to the proximity of heavy shipping activity to populated areas or the susceptibility of a particular sea area to acidification, the limit is currently set at 0.10% m/m from 1 January 2015. To date, the North Sea, the Baltic Sea, the North American Area and the United States Caribbean Sea Area have been designated as ECA under MARPOL Annex VI. In addition to the requirements of MARPOL Annex VI as amended, the European Union has implemented sulphur limits under Directive 1999/32/EC as amended, according to which a 0.5% sulphur limit outside SO_x ECAs will be mandatory in EU waters by 2020 and hence in part of the Mediterranean Sea.

The implementation of the above provisions bring additional responsibilities but also human health benefits for Mediterranean countries and, therefore, the ratification of MARPOL in general and of its Annex VI in particular should be a priority for Contracting Parties, as pointed out under Specific Objective 1. However, considering that it may take some time for all the Contracting Parties to ratify MARPOL Annex VI and that to impose the new Annex VI strict regime within ECA in the whole of the Mediterranean Sea may not be a realistic goal if it is to be achieved within the period of the Regional Strategy 2016 – 2021, it would be advisable instead to start by examining the possibility of

²⁰Resolution MEPC.203(62).

designating certain specific areas within the Mediterranean Sea as SO_x Emission Control Areas, drawing from the study already undertaken under the SafeMed I Project on the “Designation of the Mediterranean Sea as a SO_x Emission Control Area (SO_x ECA) under MARPOL Annex VI Guidelines & Procedures regarding the ratification process of Annex VI & the preparations required for the submission of an Application to IMO for the Mediterranean Sea to be designated as a SO_x ECA”.

Furthermore, measures to improve energy efficiency of international shipping were adopted by Parties to MARPOL Annex VI at MEPC 62 in July 2011 and entered into force on 1 January 2013. These Regulations for energy efficiency of ships apply to internationally trading ships of 400 gross tonnage and above, and make mandatory the Energy Efficiency Design Index (EEDI) for new ships; and the Ship Energy Efficiency Management Plan (SEEMP) for all ships.

IMO has adopted guidelines aimed at supporting implementation of the mandatory measures to increase energy efficiency and reduce greenhouse gas (GHG) emissions from international shipping, paving the way for the regulations on EEDI and SEEMP to be smoothly implemented by Administrations and industry.

Following the entry into force on 1 January 2013 of the new chapter 4 of MARPOL Annex VI, the 66th Session of the Marine Environment Protection Committee (MEPC 66) (April 2014) considered further energy efficiency measures for ships and discussed various submissions relating to proposals to establish a framework for the collection and reporting of data on the fuel consumption of ships. Whilst MEPC 67 (October 2014) agreed, in principle, to develop a data collection system for ships, further work should be undertaken to develop full language for the data collection system for fuel consumption that can be readily used for voluntary or mandatory application of the system.

In order to meet the Specific Objective of considering the designation by IMO of the Mediterranean Sea or parts thereof as a SO_x Emission Control Area under MARPOL Annex VI, and effectively implement the existing energy efficiency measures,

Outputs relating to the Contracting Parties

- a) [to examine, with *high priority*, if it is appropriate] [to establish a technical committee of experts from the European Union and south Mediterranean coastal States to carry out a technical and economic feasibility study to examine if it is appropriate at the current stage] to designate as a SO_x Emission Control Area (ECA) certain areas of the Mediterranean Sea identified for that purpose, as well as, to explore the possibility to designate the whole of the Mediterranean Sea as a SO_x ECA;
- b) once a decision is made and having ratified MARPOL Annex VI, a proposal to designate as a SO_x ECA the area or areas of the Mediterranean Sea identified under sub-paragraph a) above is submitted to IMO, with *medium priority*;
- c) participation in relevant debates at the IMO on possible future further measures for enhancing the energy efficiency of international shipping, in particular, the development of a data collection system for fuel consumption of ships, *inter alia* by informing the Secretariat of the existence of data collection and reporting systems for fuel consumption of ships;

Outputs relating to the Secretariat, depending on the availability of resources

- d) Preparation, with *high priority*, of a study based on the input of Contracting Parties, aimed at assessing the feasibility of the alternatives referred to in sub-paragraph a) above;

- e) Assistance provided to the Mediterranean coastal States which so request, either individually or collectively, to prepare a submission to IMO proposing the designation as a SOx ECA of the area or areas of the Mediterranean Sea identified under sub-paragraph a) above;
- f) relevant information provided to Contracting Parties, which so request, on possible future further measures for enhancing the energy efficiency of international shipping;
- g) assessment of existing data collection and reporting systems for fuel consumption of ships in the Mediterranean region and pilot studies on voluntary “Data Collection and Reporting” carried out; and
- h) possibility of obtaining assistance for the above purposes under the IMO’s Integrated Technical Cooperation Programme explored.

4.16 To ensure that adequate emergency towing capacity is available throughout the Mediterranean to assist vessels, including tankers, in distress

Once a vessel gets into difficulties, or threatens to become a hazard to other vessels, it is vitally important to take all necessary action as quickly as possible to save life, to prevent her going or creating a hazard, and to prevent her cargo or bunkers from spilling. In this connection, emergency towing may be used to remove the ship and cargo from a place of danger to one of safety, such as a sheltered anchorage or place of refuge. If a vessel breaks down completely, or is too far from a safe anchorage to be able to reach it under its own steam, one sure way to prevent grounding or becoming a hazard to other vessels is for a tug to provide appropriate assistance.

The International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 and its Protocol of 1973 addressing marine pollution by substances other than oil, provide powers to States Parties to “intervene” to prevent a pollution incident, including imposing towing assistance if necessary. As regards the equipment that ships should have on board, SOLAS Regulation II-1/3-4, requires all vessels to have a ship-specific emergency towing procedure. The associated resolution MSC.35 (63) and circular MSC.1/Circ.1255, among others, also apply. Emergency towing procedures should also be considered as part of the emergency preparedness required by the International Safety Management (ISM) Code.

Notwithstanding the above, the provision of adequate emergency towing capacity to assist ships in distress in the Mediterranean, especially when there are sharing agreements among neighbouring coastal States, is of paramount importance when trying to avert major loss of life and/or serious pollution damage. Currently there are at least three regional agreements on search and rescue, one in the West Mediterranean and two in the North-West Mediterranean, which include the sharing of towing capacity. In this connection, REMPEC, responding to the mandate given under the 2005 Regional Strategy, prepared, under the SAFEMED Project²¹, Emergency Towing Arrangements in the Mediterranean Sea, which represent an indispensable tool for coastal States to fulfil their obligations when responding in distress situations.

Outputs relating to the Contracting Parties

- a) Agreements with neighbouring coastal States considered, with *high priority*, if appropriate action has not been already taken, to enable them to share emergency towing equipment and arrangements to assist ships in distress in the Mediterranean, using as appropriate the Mediterranean guidelines on emergency towing;

Outputs relating to the Secretariat, depending on the availability of resources

²¹ MED.2005/109-573 financed by the European Commission under an IMO/EC contract.

- b) Assistance provided to Contracting Parties that so request in preparing and implementing the agreements referred to in sub-paragraph a) above; and
- c) assessment of the capability of the Mediterranean coastal States in terms of emergency towing equipment, and support provided to those Contracting Parties, which so request.

4.17 To enhance the levels of pre-positioned spill response equipment under the direct control of Mediterranean coastal States

A problem which faces many countries that are parties to the Barcelona Convention is where to find the financial resources to provide the State component of an overall minimum level of pollution-combating equipment. Obligations can be placed upon port authorities and oil handling facilities to provide sufficient equipment to meet the estimated spill risks associated with their activities. However, accidents in open waters are outside the jurisdiction of port authorities and oil handling facilities. Furthermore, accidents in open waters involving laden oil tankers are most likely to cause serious pollution incidents, even if they occur at a lower frequency than the smaller spills which arise in ports and terminals.

There are various possibilities for financing the acquisition by the State of the required pre-positioned oil spill response equipment and vessels. These include *inter alia*:

- State budget;
- partnerships with international institutions;
- partnerships with other States;
- partnerships with private sector, including in particular the oil industry;
- partnerships with specialised spill response companies; and
- specific national funds financed through targeted taxation of certain commercial activities, and/or through accumulation of fines imposed on offenders of applicable rules and regulations.

Sharing information on ways of financing spill response equipment is important, especially for coastal States which may lack the considerable funds needed to purchase and maintain adequate equipment of that nature. Since marine pollution preparedness and response should represent an unremitting concern for all coastal States and bearing in mind the difficulties encountered by some States when trying to finance expensive and at times perishable oil and HNS pollution response equipment, it is important that each Contracting Party, having decided upon the most appropriate way of financing the acquisition of required State controlled spill response equipment and vessels, shares the information, through REMPEC, with other Mediterranean coastal States that have not been able to obtain it.

The lessons learnt from the “Deepwater Horizon” incident highlighted the importance of maintaining, at national and regional level, an inventory of available means in order to hasten the identification of equipment and human resources that could be made available to a third party in case of emergency. Whilst it was further recognised that the existing inventory of response capacity in the region was not detailed enough to provide immediate accurate information, REMPEC’s inventory has been reviewed by the Mediterranean Technical Working Group (MTWG) in the context of the Project Mediterranean Decision Support System for Marine Safety (MEDESS-4MS) to improve the accessibility to information in the aftermath of an accident. At the European level, the structure of the European inventory of response equipment integrated in the Common Emergency Communication and Information System (CECIS) was also reviewed and at the international level, the International Maritime Organization is developing the “International Offers of Assistance Guidelines”, which, *inter alia*, provide recommendations on equipment resources’ inventories. Whilst the maintenance of multiple

inventories can be cumbersome to Contracting Parties, in particular to those that belong to various Regional Agreements, efforts should be made to facilitate their task in updating these inventories.

Whilst most efforts in this field have been focused on oil spill response equipment, little has been done in the field of HNS response equipment, which remains a challenge. Particular emphasises should be given in the Regional Strategy to assess the HNS spill response capacity in line with EMSA efforts in this field.

Outputs relating to the Contracting Parties

- a) Information concerning national practices for financing the acquisition of spill response equipment, shared or exchanged, with *high priority*, with a view to assist Mediterranean Coastal States in determining all feasible methods to finance spill response equipment;
- b) establishment, with *medium priority*, of national stockpiles of State controlled and private pre-positioned oil and HNS spill response equipment and the related inventory at national level and regional level is kept updated through REMPEC;

Outputs relating to the Secretariat, depending on the availability of resources

- c) assistance provided to the States which so request in identifying the minimum required level of pre-positioned State-controlled spill response equipment;
- d) dissemination to the Contracting Parties of information concerning the applicable ways of financing the acquisition of such equipment and continuous assistance provided in this regard, as necessary;
- e) maintenance of the regional information system and updated inventory of pre-positioned spill response equipment; and
- f) possible synergies to interconnect the Regional Information System (RIS) with CECIS to facilitate the access to the information at any time and in particular in case of emergency, and facilitate the update of these databases through an interconnected system, is envisaged.

4.18 To encourage the participation of the regional scientific and technical institutions in research and development activities and to facilitate transfer of technology

The Prevention and Emergency Protocol to the Barcelona Convention emphasises the need for exchange of information concerning research and development of new technologies. The OPRC 90 Convention and its 2000 OPRC-HNS Protocol explicitly call upon Parties to these international legal instruments to actively participate in research and development efforts.

It has been noted that, in general, Mediterranean coastal States, with a very few exceptions, rarely present the results of their R&D activities related to response to marine pollution incidents, or even participate in relevant international fora, such as IMO R&D Forum, Interspill, International Oil Spill Conference, etc.

On the other hand, from direct contacts with the persons attending meetings and training courses organised by REMPEC it appears that scientific, technical and educational institutions as well as the industry from the Mediterranean region are involved in R&D activities in various subjects related to prevention of, preparedness for and response to accidental marine pollution.

Encouraging national institutions and the industry to actively participate in OPRC and OPRC-HNS R&D activities and programmes and to present the results at international fora should not represent an

undue burden to Administrations, while the States concerned would clearly accrue benefits from the outcome of such activities and programmes.

In discharging its mandate under the 2005 Regional Strategy and in order to make the results of R&D activities undertaken in the Mediterranean region better known, REMPEC has endeavoured to encourage the participation of regional research institutions and industry in relevant events. REMPEC has also facilitated, through the network of its Focal Points, the exchange of these results among the Contracting Parties. In particular, REMPEC was involved in the MEDESS-4MS Project, which is dedicated to the strengthening of maritime safety by mitigating the risks and impacts associated to oil spills. Besides, REMPEC signed a Memorandum of Understanding with the Mediterranean Operational Oceanography Network (MOON) regarding Emergency Response Collaboration Agreement for the Mediterranean Region. The Centre has also participated in several regional workshops, giving an overview of the situation in the Mediterranean Sea.

With a view to meeting the Specific Objective of promoting the participation of the relevant Mediterranean institutions in R&D activities and to facilitate transfer of technology within the region,

Outputs relating to the Contracting Parties

- a) scientific and technical institutions, as well as the industry, actively participate in R&D activities and programmes related to accidental marine pollution prevention, preparedness and response;
- b) national institutions and industry presents the results of their R&D activities and programmes at international fora;
- c) national R&D activities are presented using the page created by REMPEC within the Country Profiles website;

Outputs relating to the Secretariat, depending on the availability of resources

- d) Continuous assistance provided to regional institutions and industry in identifying fields of research in which there is a need for enhancement of the state-of-the-art of spill preparedness and response technologies and techniques;
- e) continuous assistance provided in the dissemination and exchange of results of national R&D activities and programmes within and outside the Mediterranean region;
- f) participation of national and regional research institutions and industry in the relevant international fora is facilitated with a view to making better known the results of R&D activities undertaken in the Mediterranean region; and
- g) cooperation with other Regional Agreements, in carrying out the above requests.

4.19 To improve the quality, speed and effectiveness of decision-making process in case of marine pollution incidents through the development and introduction of technical and decision support tools

The successful outcome or otherwise of measures taken in order to respond to oil spills and to spills or releases of other hazardous and noxious substances depends to a great extent on the quality of and the promptness with which decisions concerning the response are taken. Moreover, the failure of a coastal State in taking swift and effective action against the imminence of a serious marine pollution incident occurring in its territorial waters may result, not only in a national environmental disaster, but also in causing devastation along neighbouring countries' shores.

Although such decisions should be taken by the competent national authorities and their responsible officers taking into consideration specific circumstances of each particular marine pollution emergency and a number of technical, socio-economic and political factors, the process of taking decisions can be significantly accelerated, made more correct and simplified using certain decision support tools such as e.g. sensitivity maps, spill forecasting models and databases. There is a wide variety of such tools developed by either commercial organisations or scientific institutions; however these are only rarely developed for a specific geographical area.

In response to its mandate under the 2005 Regional Strategy, REMPEC has endeavoured to cooperate with scientific institutions in the region and with specific programmes and projects dedicated to relevant activities.

The MEDESS-4MS Project co-financed by the European Regional Development Fund (ERDF) and implemented in cooperation with REMPEC provides a tool enabling all Mediterranean countries to compare the most appropriate oil spill forecasting models for a selected area in the region and to assess oil spill potential impact toward socio-economic and environmental assets gathered in a geographical information system, including *inter alia* updated data on national response capacity. In addition, oceano-meteorological centres from six Mediterranean countries have signed an agreement with REMPEC through the Mediterranean Operational Network for the Global Ocean Observing System (MONGOOS - former MOON) providing, on request, oil spill forecast to all Mediterranean countries.

The Centre has also developed and/or updated the following tools in the framework of the MTWG, which has also contributed together with Plan Bleu and RAC/SPA to the data collection within the framework of the above mentioned MEDESS-4MS Project, or through other projects:

- a Geographic Information System (GIS) on Maritime Traffic in the Mediterranean Sea;
- a Maritime Integrated Decision Support Information System on Transport of Chemical Substances (MIDSIS-TROCS);
- a Waste Management Decision Support Tool; and
- Other long-implemented tools are being continually updated, such as the REMPEC Alerts and Accidents Database.

Regarding the latter, since its establishment the REMPEC Alerts and Accidents Database relied on various sources of information including *inter alia* REMPEC national Focal Points, the IMO Maritime Knowledge Centre, Cedre, local media, etc. Although REMPEC endeavoured to verify and harmonise the information collected, the development of a quality assurance programme for data reporting and collection is required and should be established in line with the EcAp Monitoring Programme.

In order to meet the Specific Objective of improving the quality, speed and effectiveness of decision making process in case of emergency,

Outputs relating to the Contracting Parties

- a) the development and improvement of specific regional decision support tools are stimulated by promoting active participation of national scientific institutions and programmes, and through providing REMPEC with relevant data-sets and other information that might be available in the respective countries;
- b) active participation, through a country lead approach in the implementation of the programme of work of the MTWG as defined by the Meetings of Focal Points of REMPEC;

- c) national oceano-meteorological institutes have joined the Mediterranean Operational Network for the Global Ocean Observing System and contributed to the maintenance of the above Mediterranean tools through regular data update;
- d) Contribution to the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme;

Outputs relating to the Secretariat, depending on the availability of resources

- e) continuous revision and upgrade of the existing IT based decision support tools, and development of new IT based decision support tools available to the competent national authorities of the Contracting Parties , taking into account national or regional initiatives in this field;
- f) coordination and the implementation of the programme of work of the Mediterranean Technical Working Group facilitated;
- g) possible interaction and capitalisation of decision support tools available at Mediterranean and European levels, including those developed by other Regional Agreements or under other regional initiatives is explored, in carrying out the above requests;
- h) support provided for the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme; and
- i) integration of any developments on decision support tools under Specific Objectives 20, 21 and 22.

4.20 To increase as much as practical, the level of knowledge in the field of preparedness and response to accidental marine pollution by oil and other harmful substances

The existence in each country of a core group of experts specialised in oil and HNS spill preparedness and response is recognised to be, together with the existence of national organisation, contingency plans, response strategy and response equipment, one of the key prerequisites for properly initiating, conducting and successfully completing response operations in case of marine pollution emergency.

It is considered that the necessary sustainability in the field of training at national level can be achieved through the creation of a small number of qualified trainers in each country who could in turn continue to provide the required training to their co-nationals. It refers in particular to training national spill response personnel at the level of operators and direct responders (Level 1) and at the level of supervisors and on-scene commanders (Level 2). On the other hand it is understood that Level 3 training (senior government administrators and managers) will have to remain at the regional level and should continue to be provided and co-ordinated by REMPEC. Similarly, highly specialised training in specific fields of marine pollution preparedness and response will also have to remain the responsibility of the Centre. The long-term aim of this Specific Objective should, therefore, be for each Contracting Party to achieve self-sufficiency in spill response training at the general level and to ensure continuous education of national spill responders.

Since the inception in the early 1980s of the REMPEC training programme, more than 3,500 persons have been trained through training activities at different levels which were included in the programme. Despite this noteworthy achievement a significant number of persons that had been trained is not any longer at the disposal of their respective national administrations due to job changes, retirement or other reasons, and the need for further training has been emphasised by REMPEC Focal Points on numerous occasions.

In response to the relevant mandate given in the 2005 Regional Strategy, REMPEC has regularly organised training courses covering different subjects and targeting the widest variety of participants to the greatest extent possible. The Centre has also organised information and other decision-making meetings, in particular concerning:

- the project for Preparedness for Oil-polluted Shoreline clean up and Oiled Wildlife interventions (POSOW), including a train the trainer course and the development of the related pedagogic material;
- regional training courses on highly specialised issues such as the Regional Response Capacity and Co-ordination for Major Oil Spill in the Mediterranean Sea (MEDEXPOL) workshops; and
- training on specific issues such as the use of dispersants, waste management, oiled shoreline assessment, oiled wildlife response, oil spill forecast modelling, risk assessment, etc.

The Centre should, therefore, focus its training efforts on training of trainers and providing highly specialised training on specific issues, at the regional level.

Regular communication, table top and full scale exercises are crucial, not only to assess the knowledge acquired during training courses and to test local, national and regional response capacity, but also to enhance cooperation amongst national competent authorities, REMPEC and European response mechanisms (i.e. EMSA and the Union Civil Protection Mechanism), and private sectors.

In order to accomplish this Specific Objective,

Outputs relating to the Contracting Parties

- a) Establishment, with *high priority*, if appropriate action has not been already taken, of national training programmes for response to incidents involving oil and other HNS, based *inter alia* on IMO Model training courses Levels 1 and 2, for training national operating level and supervisory personnel respectively, with a view to ensuring a continuous education of such personnel;
- b) dissemination of the knowledge acquired through train the trainer courses and replication of the training courses at local and national level;
- c) regular exercises carried out to test national response capacity in cooperation with all relevant stakeholders and to the possible extent involving neighbour coastal states to enhance bilateral and sub-regional cooperation;

Outputs relating to the Secretariat, depending on the availability of resources

- d) assistance provided to Contracting Parties which so request in the development and implementation of their national training programme;
- e) continuous delivery of “Training of Trainers” courses, based in particular on the work developed under POSOW Projects;
- f) regional training courses on specific, highly specialised issues, identified at regular basis by the Meetings of REMPEC Focal Points;
- g) the relevant model training courses updated by the IMO Sub-Committee on Pollution Prevention and Response (PPR); other Regional Agreements, and EMSA under its relevant Action Plans are taken into account, when preparing and supporting the implementation of national training programmes;

- h) promotion of the organisation of regular exercises to test national and sub-regional response capacity in cooperation with all relevant stakeholders; and
- i) the possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme is explored and external resources and means *inter alia* from external donors, the private sector and the Union Civil Protection Mechanism are mobilised.

4.21 To revise the existing recommendations, principles and guidelines, and to develop new ones aimed at facilitating international cooperation and mutual assistance within the framework of the Prevention and Emergency Protocol

Since 1987 various Ordinary Meetings of the Contracting Parties to the Barcelona Convention have adopted a series of recommendations, principles and guidelines concerning accidental marine pollution preparedness, response and mutual assistance, as well as prevention of pollution from ships. All these documents aimed at facilitating the implementation of the Prevention and Emergency Protocol.

There have been numerous developments at both regional and global levels that necessitate revision, updating or amending, as appropriate, of the recommendations, principles and guidelines adopted in the past by the Contracting Parties. These developments include the introduction of new regional and global legal instruments, the development of technology, better understanding of issues related to accidental pollution by oil and other hazardous and noxious substances, and last but not least the experience gained through, and initiatives resulting from, major pollution accidents. Such recommendations, principles and guidelines should be put through continuous review in order to keep them up-to-date and fit for purpose.

In addition to keeping the above-mentioned material current, the facilitation of transboundary movement of specialised response personnel and equipment in cases of emergency may mark the difference between success and failure in responding to, and mitigating, the often disastrous consequences of a serious pollution incident. Contracting Parties should, therefore, undertake to streamline their respective national procedures for entry into, movement within and exit from their territory of specialised personnel and equipment that might be required in case of emergency.

As mandated by the 2005 Regional Strategy, REMPEC has endeavoured to list in its website Country Profile the existing transboundary arrangements on which some States have provided information. The information is still scarce and, therefore, Contracting Parties should, as a matter of urgency, furnish the Centre with the required information. Also, REMPEC has revised the relevant guidelines and produced new ones, which were adopted, and constantly works in developing and making information available as much as possible.

However, the Mediterranean Principles and Guidelines should be reviewed in line with the latest international and European developments (i.e. International Offers of Assistance Guidelines (IMO) and the host nation support under the Union Civil Protection Mechanism). In the context of the review of the Mediterranean Principles and Guidelines, clear procedures, conditions and synergies should be established and agreed to ensure an effective coordination between the Mediterranean (Mediterranean Assistance Unit (MAU): Centre de documentation, de recherche et d'expérimentations sur les pollutions accidentelles des eaux (Cedre), Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Federazione Nazionale dell'Industria Chimica (Federchimica), Sea Alarm, Mediterranean Operational Network for the Global Ocean Observing System (MONGOOS)), regional assistance, IMO support, etc.) and European response and assistance mechanism (i.e. Emergency Response Coordination Centre (ERCC), EMSA's pollution response services and CECIS).

With a view to meeting the Specific Objective of revising the existing and developing new regional recommendations, principles and guidelines aimed at facilitating international cooperation and mutual assistance in the framework of the Prevention and Emergency Protocol,

Outputs relating to the Contracting Parties

- a) Revision, with *high priority* if appropriate action has not been already taken, of the existing recommendations, principles and guidelines concerning accidental marine pollution preparedness, response and mutual assistance, as well as prevention of pollution from ships, that were adopted since 1987, paying particular attention to those that aim at removing possible obstacles which might hinder mutual assistance;
- b) identification, with *high priority* if appropriate action has not been already taken, of all such recommendations, principles and guidelines that need to be revised, updated and/or amended;
- c) indication, with *high priority* if appropriate action has not been already taken, of additional recommendations, principles and guidelines which should be adopted at the regional level with a view to facilitating the implementation of the Prevention and Emergency Protocol in the field of international cooperation and mutual assistance;
- d) mutual assistance further facilitated by streamlining, with *high priority* if appropriate action has not been already taken, the respective national procedures for entry into, movement within and exit from their territory of specialised personnel and equipment that might be required in case of emergency, and REMPEC is informed accordingly;
- e) the use of the CECIS Marine Pollution is considered in order to enhance coordination of requests and offers of international assistance;

Outputs relating to the Secretariat, depending on the availability of resources

- f) Compilation, as soon as the necessary information is in hand, of an inventory of the applicable national procedures governing the entry into, movement within and exit from their territory of specialised personnel and equipment that might be provided as mutual assistance in case of emergency, and preparation of recommendations for improving those national procedures that could seriously hamper providing such assistance;
- g) preparation, with *high priority*, in cooperation with REMPEC national Focal Points revised, updated and/or amended texts of the relevant regional recommendations, principles and guidelines to be propose for adoption to the Meetings of the Contracting Parties;
- h) development, as the need arises and in cooperation with REMPEC national Focal Points, , new recommendations, principles and guidelines, as necessary, and to be propose for adoption to the Meetings of the Contracting Parties;
- i) in carrying out the above requests, cooperation with IMO, other Regional Agreements, EMSA under its relevant Action Plans and the Union Civil Protection Mechanism, taking into account any new developments on international cooperation and mutual assistance as indicated in the penultimate paragraph of the introduction of the present Specific Objective; and
- j) possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme is explored and external resources and means *inter alia* from external donors, the private sector and the Union Civil Protection Mechanism are mobilised.

4.22 To strengthen the capacity of individual coastal States to respond efficiently to marine pollution incidents through development of sub-regional operational agreements and contingency plans

The Prevention and Emergency Protocol to the Barcelona Convention, as well as the OPRC 90 Convention and its 2000 OPRC-HNS Protocol, recognise the importance of sub-regional, bilateral and multilateral, agreements for cooperation in accidental marine pollution preparedness and response, as important tools for enhancing national capacities of States participating in such agreements.

In the Mediterranean region, sub-regional contingency plans and agreements on their implementation constitute mechanisms for mutual assistance, based on the framework provided by the Prevention and Emergency Protocol. These mechanisms, which facilitate the implementation of the Protocol, enable competent national authorities of the Contracting Parties to closely cooperate by co-ordinating and integrating their respective national capacities, with a view to effectively responding to incidents surpassing their individual capacities.

In order to create the necessary conditions leading to the development of sub-regional agreements it is necessary that individual States have in place a national contingency plan and/or a preparedness and response system as fundamental protection requirements against the potentially disastrous consequences of a serious pollution incident. It is, therefore, imperative that all the Contracting Parties have such plans and systems in operation. In this connection, REMPEC, in fulfilling its mandate under the 2005 Regional Strategy, has assisted a number of countries in the development of their national contingency plans and has offered its support to the three countries remaining without any operational national contingency plan.

At the sub-regional level, REMPEC has continuously and actively assisted the Contracting Parties in preparing and implementing sub-regional contingency plans and agreements such as South-Eastern Mediterranean (Cyprus, Egypt and Israel), South-Western Mediterranean (Algeria, Morocco and Tunisia), and the Adriatic Sea (Croatia, Italy and Slovenia), and has participated to activities in the framework of the RAMOGEPOL (France, Monaco and Italy) and the Lion plan (France and Spain). The existing sub-regional contingency plans and agreements contain provisions for cooperation in prevention of maritime incidents, which is expected to further reduce the risk of accidental marine pollution, and which may be also included in future sub-regional agreements. The Centre has also assisted in the implementation of the POSOW Project, involving Croatia, Cyprus, France, Greece, Italy, Malta, Slovenia and Spain and aiming at establishing a regional cooperation synergy through the enhancement of knowledge and capacities of operators, professionals and volunteers in the field of marine pollution and is involved in the second phase of the project extended to Algeria, Egypt, Lebanon, Libya, Morocco, Tunisia and Turkey.

Once all the remaining Mediterranean coastal States have set-up their national systems for preparedness and response, including adoption of national contingency plans, the way will be paved for concluding sub-regional arrangements among all the countries in the region. Active participation of each country in one or more of such bilateral or multilateral agreements is expected to significantly increase the level of preparedness for responding to major marine pollution incidents in the region. However, an assessment may be required to evaluate the gaps between the plans which will ultimately be linked to others through bilateral and/or sub-regional agreements.

Whilst most national contingency plans were developed with oil spill incidents from ships in mind, an update may be required to integrate the response to HNS spills. Furthermore, with the ongoing development in the field of exploration and exploitation of the continental shelf and the seabed and its subsoil, and in accordance with article 16 of the Offshore Protocol which applies, *mutatis mutandis*, the provisions of the Prevention and Emergency Protocol, National Contingency Plans of

Mediterranean coastal States involved in oil and gas exploration and exploitation should be reviewed to integrate offshore activities.

With a view to meeting the Specific Objective of further strengthening response capacities of individual coastal States through development of sub-regional operational agreements and contingency plans,

Outputs relating to the Contracting Parties

- a) Assessment, preparation, or revision and adoption, with high priority if appropriate action has not been already taken, of national contingency plans and establishment of national systems for preparedness for and response to oil and HNS spills from ships, sea ports and oil handling facilities, with a view to creating the necessary conditions for the development of sub-regional agreements;
- b) sub-regional agreements covering the entire Mediterranean region negotiated, concluded and implemented including the relevant sub-regional contingency plans;

Outputs relating to the Secretariat, depending on the availability of resources

- c) Continuous assistance provided to the Contracting Parties that have not yet adopted their national contingency plans or need to review their national contingency plans to integrate HNS and/or offshore components, in the development or update and implementation of national preparedness and response systems;
- d) assessment of national contingency plans and national response systems, facilitated through self-assessment or peer reviews to commensurate national response capacities with the existing oil and HNS spill risks from ships, sea ports and oil handling facilities and to evaluate gaps between national plans in order to define appropriate actions to ensure the compatibility of operational arrangements in view of the conclusion of bilateral and/or sub-regional agreements;
- e) continuous assistance provided to Contracting Parties, which so request, in preparing or reviewing sub-regional contingency plans and in drafting agreements on their implementation;
- f) advice and material which may be made available by other Regional Agreements utilised in carrying out the above requests; and
- g) the possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme is explored and external resources and means *inter alia* from external donors, the private sector and the Union Civil Protection Mechanism are mobilised.

Appendix 1
Implementation Goals

Note: “**High priority**” implies that the task in question should be completed by end of 2018, whereas “**Medium priority**” implies that the task should be concluded as soon as possible, but not later than end of 2020.

A) Contracting Parties’ Goals

Specific Objective	Goal (Success Criteria)	Priority
1 Ratification of relevant international maritime conventions related to the protection of the marine environment (see Appendix II).	a) All Contracting Parties to have taken the necessary actions to ratify and implemented MARPOL and its six Annexes ,to have ensured their transposition into national law, placing special emphasis on revised Annex V (Regulations for the prevention of pollution by garbage from ships) and Annex VI (Regulations for the prevention of air pollution from ships) as amended, and to have cooperated through REMPEC to ensure full compliance with its provisions;	High
	b) All Contracting Parties to have taken the necessary actions to ratify and implemented other IMO relevant international conventions and to have ensured their transposition into national law by the same time and full compliance with their provisions.	High
2 To control and manage ships' biofouling to minimise the transfer of invasive aquatic species.	a) All Contracting Parties to have applied the 2011 Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species and report to IMO accordingly; b) All Contracting Parties to have disseminated the Guidelines to the shipping industry and other interested parties.	Medium Continuous
3 Ensuring effective maritime administrations.	a) All Contracting Parties to have developed a National Action Plan (NAP) to enable them to fully implement the Regional Strategy in a timely and thorough manner;	High
	b) All Mediterranean coastal States to have enhanced, on the basis of their NAP, the performance of their maritime administration in accordance with the applicable IMO recommendations and guidelines;	High
	c) All Mediterranean coastal States to have prepared for undertaking the IMO Member State Audit Scheme, using the III Code as the audit standard and following the Framework and Procedures for the Scheme	High
4 To strengthen the Memorandum of Understanding (MoU) on port State control (PSC) in the Mediterranean region (Mediterranean MoU).	a) All Contracting Parties to have maintained their mandate to REMPEC whereby the Centre should, if and when possible, offer its assistance to the Mediterranean MoU on port State control in order to improve its effectiveness and, if so requested, to facilitate cooperation between the Paris MoU and the Mediterranean MoU;	Continuous
	b) All Contracting Parties to have made available the necessary resources and means for efficient functioning of the Mediterranean MoU.	High
5 Provision of reception facilities	a) All Contracting Parties to have provided adequate reception facilities in their ports and considered	High

<p>in ports.</p>	<p>procedures related to the cost of the use of port reception facilities, enabling their use as soon as they are available at a fee which should be reasonable and should not serve as a disincentive for their use;</p> <p>b) Garbage: c) Oily wastes d) Noxious Liquid Substances (NLS): e) Sewage: f) For ozone-depleting substances and exhaust gas cleaning residues g) For ballast water and sediments</p>	<p>High High High High Medium High</p>
<p>6 Delivery of ship-generated wastes.</p>	<p>a) All Contracting Parties to have established a system of notification to a vessel's next port of call of the status of its on board retention of bilge waters, oily wastes, HNS residues, sewage, garbage, ozone-depleting substances and exhaust gas cleaning residues; b) All Mediterranean coastal States to have implemented national regulations empowering maritime authorities to require, if deemed necessary, Masters of vessels to discharge wastes into designated port reception facilities before sailing.</p>	<p>High High</p>
<p>7 Improved follow-up of pollution events as well as monitoring and surveillance of illicit discharges.</p>	<p>a) All Contracting Parties to have established systems and procedures for national and sub-regional monitoring and surveillance including, where practicable, regular individual or coordinated aerial surveillance in the waters under their jurisdiction <u>if the Parties so agree</u>, and to have reported the results to the regular Meetings of REMPEC Focal Points; b) All Contracting Parties to have established sub-regional systems, including procedures to over-fly the waters under the jurisdiction of a neighbouring State if the <u>neighbouring</u> Parties so agree, for surveillance of environmentally sensitive and/or high risk zones.</p>	<p>High High</p>
<p>8 To improve the level of enforcement and of the prosecution of discharge offenders.</p>	<p>a) All Mediterranean coastal States to have ensured the existence of a national legal framework (regulations) as a basis for prosecuting discharge offenders for infringements of MARPOL or of any national legal framework implementing it; b) All Contracting Parties to have actively participated in the Mediterranean Network of Law Enforcement Officials relating to MARPOL within the framework of the Barcelona Convention, in accordance with its terms of reference.</p>	<p>High High</p>
<p>9 To reduce the pollution generated by pleasure craft activities.</p>	<p>a) All Contracting Parties to have implemented the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean, in conjunction with the relevant provisions of the MARPOL Convention and the Regional Plan on Marine Litter Management; b) All Contracting Parties to have reported to the Secretariat on the measures they undertook to implement the said Guidelines.</p>	<p>High As appropriate</p>
<p>10 Reduced risk of collisions by</p>	<p>a) All Contracting Parties to have proposed to IMO, where necessary, additional appropriate Routeing</p>	<p>Where</p>

<p>establishing Ship's Routing Systems.</p>	<p>Systems in the Mediterranean for possible adoption in accordance with international law; b) All Contracting Parties to have considered establishing, when and where possible and without prejudice to the sovereign right of the States, Marine Spatial Plans under their jurisdiction, ensuring that they are coherent and coordinated across the Mediterranean region.</p>	<p>necessary Where and when possible</p>
<p>11 Improved control of maritime traffic.</p>	<p>a) All Contracting Parties to have identified those areas of the Mediterranean where control of maritime traffic could be improved by the establishment of a regime based on the use of Automatic Identification System (AIS) in conjunction with Vessel Traffic Services (VTS) and mandatory ship reporting systems, and to have completed approval procedures as soon as possible thereafter; b) All Contracting Parties to continuously improve technical cooperation among VTS Centres of the neighbouring countries and, according to the need, to exchange information about ships by using AIS in the common surveillance area;</p>	<p>High Continuous</p>
<p>12 Identification of Particularly Sensitive Sea Areas (PSSAs).</p>	<p>a) All Contracting Parties to have ascertained, with the support of REMPEC and RAC/SPA, whether there are maritime areas within their jurisdiction which need the protection afforded by their designation as PSSAs and, if so ascertained, to have initiated the process of requesting IMO to enable such designation.</p>	<p>Medium</p>
<p>13 Reduction of marine noise caused by ships.</p>	<p>a) All Contracting Parties, on the basis of the IMO Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life, to have urged their national designers and shipbuilders, as well as operators of ships flying their flag to implement noise mitigation strategies on board their ships.</p>	
<p>14 To establish procedures for designation of places of refuge in order to minimise the risk of widespread pollution.</p>	<p>a) All Contracting Parties to have identified appropriate procedures as outlined in the relevant IMO Guidelines and relevant EU <u>guidelines</u>, supplemented by the associated Guidelines and Principles prepared by REMPEC, in order to facilitate the decision making when designating a place of refuge for a ship in need of assistance; b) All Mediterranean coastal States to have drawn up plans to deal with ships in need of assistance and have defined the modalities of the response according to its nature and to the risk incurred.</p>	<p>High</p>
<p>15 To examine the possibility of designating the Mediterranean Sea or parts thereof as a SOx emission control area, under MARPOL Annex VI and effectively implement the existing energy efficiency measures.</p>	<p>a) All Contracting Parties to have [examined if it is appropriate] [<u>established a technical committee of experts from the European Union and south Mediterranean coastal States to carry out a technical and economic feasibility study to examine if it is appropriate at the current stage</u>] to designate as a SOx ECA certain areas of the Mediterranean identified for that purpose, as well as, to have explored the possibility to designate the whole of the Mediterranean Sea as a SOx ECA; b) Contracting Parties, having made a decision and having ratified MARPOL Annex VI, to have submitted to IMO a proposal to designate as a SOx ECA the appropriate area or areas of the Mediterranean Sea;</p>	<p>High Medium</p>

	c) All Contracting Parties to have participated in relevant debates at the IMO on possible future further measures for enhancing the energy efficiency of international shipping;	As required
16 To ensure that adequate emergency towing capacity is available throughout the Mediterranean to assist vessels, including tankers, in distress.	a) All Contracting Parties to have considered agreements with neighbouring coastal States to enable them to share towing equipment and arrangements to assist ships in distress in the Mediterranean, using as appropriate the Mediterranean guidelines on emergency towing.	High
17 To enhance the levels of pre-positioned spill response equipment under the direct control of Mediterranean coastal States.	a) All Contracting Parties to have shared or exchanged information concerning their respective national practices for financing the acquisition of spill response equipment with a view to assist Mediterranean Coastal States in determining all feasible methods to finance spill response equipment;	High
	b) All Contracting Parties to have established national stockpiles of State controlled pre-positioned oil and HNS spill response equipment and have kept updated the related inventory at national level and regional level through REMPEC.	Medium
18 To encourage the participation of the regional scientific and technical institutions in research and development activities and to facilitate transfer of technology.	a) Scientific and technical institutions, as well as the industry, to have actively participated in R&D activities and programmes related to accidental marine pollution prevention, preparedness and response;	Continuous
	b) National institutions and industry to have presented the results of their R&D activities and programmes in international fora;	Continuous
	c) National R&D activities to have been presented using the page created by REMPEC within the Country Profiles website.	Continuous

<p>19 To improve the quality, speed and effectiveness of decision-making process in case of marine pollution incidents through the development and introduction of technical and decision support tools.</p>	<p>a) All Contracting Parties to have stimulated the development and improvement of specific regional decision support tools by promoting active participation of their national scientific institutions and programmes and to provide REMPEC with relevant data-sets and other information that might be available in their respective countries;</p> <p>b) All Contracting Parties to have actively participated through a country lead approach in the implementation of the programme of work of the MTWG as defined by the Meetings of Focal Points of REMPEC;</p> <p>c) National oceano-meteorological institutes to have joined the Mediterranean Operational Network for the Global Ocean Observing System and to contribute to the maintenance of the above Mediterranean tools through regular data update;</p> <p>d) All Contracting Parties to have contributed to the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme.</p>	<p>Continuous</p> <p>As required</p> <p>Continuous</p> <p>As required</p>
<p>20 To increase as much as practical, the level of knowledge in the field of preparedness and response to accidental marine pollution by oil and other harmful substances.</p>	<p>a) All Contracting Parties to have established national training programmes for response to incidents involving oil and other HNS, based <i>inter alia</i> on IMO Model training courses Levels 1 and 2, for training national operating level and supervisory personnel respectively, with a view to ensuring a continuous education of such personnel;</p> <p>b) All Contracting Parties to have disseminated the knowledge acquired through train the trainer courses and have replicated the training courses at local and national level;</p> <p>c) All Contracting Parties to have carried out regular exercises to test their national response capacity in cooperation with all relevant stakeholders and to the possible extent involving neighbour coastal states to enhance bilateral and sub-regional cooperation.</p>	<p>High</p> <p>Continuous</p> <p>Continuous</p>
<p>21 To revise the existing recommendations, principles and guidelines, and to develop new ones aimed at facilitating international cooperation and mutual assistance within the framework of Prevention and Emergency Protocol.</p>	<p>a) All Contracting Parties to have participated in the revision of the existing recommendations, principles and guidelines concerning accidental marine pollution preparedness, response and mutual assistance, as well as prevention of pollution from ships;</p> <p>b) All Contracting Parties to have identified all such recommendations, principles and guidelines that need to be revised, updated and/or amended;</p> <p>c) All Contracting Parties to have indicated which additional recommendations, principles and guidelines should be adopted at the regional level with a view to facilitating the implementation of the Prevention and Emergency Protocol in the field of international cooperation and mutual assistance;</p> <p>d) All Contracting Parties to have streamlined their respective national procedures for entry into, movement within and exit from their territory of specialised personnel and equipment that might be required in case of emergency;</p> <p>e) All Contracting Parties to have considered the use of the CECIS Marine Pollution in order to enhance coordination of requests and offers of international assistance:</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p>

<p>22 To strengthen the capacity of individual coastal States to respond efficiently to marine pollution incidents through development of sub-regional operational agreements and contingency plans.</p>	<p>a) All Contracting Parties to have assessed, prepared and adopted national contingency plans and to have established national systems for preparedness for and response to oil and HNS spills from ships, sea ports and oil handling facilities;</p> <p>b) All Contracting Parties to have negotiated, concluded and implemented sub-regional agreements covering the entire Mediterranean region, including the relevant sub-regional contingency plans.</p>	<p>High</p> <p>High</p>
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B) Secretariat's (REMPEC) Goals

Note:The requests addressed to the Secretariat (REMPEC) have not been assigned a priority in as much as most of them can only be carried out once the corresponding demand has been received from the Contracting Parties and, therefore, have the same priority as per the Parties. In general, it is assumed that the tasks entrusted to the Secretariat will be tackled as soon as possible, provided the necessary human and financial resources are available.

Specific Objective	Goal (Success Criteria)
1 Ratification of relevant international maritime conventions related to the protection of the marine environment (see Appendix II).	<ul style="list-style-type: none"> c) & d) REMPEC to have provided Mediterranean coastal States with advice and assistance in the process of ratifying and implementing the international conventions set forth in subparagraphs a) and b) (see under Contracting Parties); e) REMPEC to have provided assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme.
2 To control and manage ships' biofouling to minimise the transfer of invasive aquatic species.	<ul style="list-style-type: none"> c) REMPEC to have provided Mediterranean coastal States with advice and assistance in order to fulfil the aims under sub-paragraphs (a) and (b) (see under Contracting Parties).
3 Ensuring effective maritime administrations.	<ul style="list-style-type: none"> d) REMPEC to have assisted Mediterranean coastal States in the development of a National Action Plan, designed to enable them to assess progress made, to guide them in the full implementation of the Regional Strategy in a tailored manner, and to conduct a national assessment of their capabilities and define the necessary remedial action; e) REMPEC to have assisted Mediterranean coastal States in enhancing the performance of their maritime administrations in line with new IMO developments, in particular the IMO Member State Audit Scheme (IMSAS); f) REMPEC to have provided support to Mediterranean coastal States to prepare for undertaking the IMO Member State Audit Scheme, having explored the possible technical assistance to which some of them may be entitled under the IMO's Integrated Technical Cooperation Programme and other sources g) REMPEC to have contributed to improve the knowledge and expertise of flag State inspection officers by running a programme of training activities related to relevant international instruments, in particular MARPOL, ensuring appropriate training for ship inspectors.
4 To strengthen the Memorandum of Understanding (MoU) on port State control (PSC) in the Mediterranean region (Mediterranean MoU).	<ul style="list-style-type: none"> c) REMPEC to have participated in the Mediterranean MoU Committee; d) REMPEC to have associated itself with port State control training activities addressing environmental matters, including those related to Anti Fouling Systems, Ballast Water

	<p>Management and biofouling, where appropriate, in collaboration with recognised training institutions within the region;</p> <p>e) REMPEC to have worked in association with other MoUs on port State control in the organisation and follow up analysis of concentrated inspection campaigns on MARPOL related deficiencies.</p>
<p>5 Provision of reception facilities in ports.</p>	<p>h) REMPEC to have provided well-structured advice assessing the type, specifications and capacity of the equipment necessary at major ports to efficiently and effectively handle shipboard residues and mixtures, as well as guidelines or sample form of operational plans, taking into account the latest edition of the IMO Comprehensive Manual on Port Reception Facilities, the IMO Guide to Good Practice for Port Reception Facility Providers and Users and the new requirements incorporated since 2005 in the relevant mandatory instruments, to assist Contracting Parties in the accomplishment of this objective;</p> <p>i) REMPEC to have contributed to the implementation of the Regional Plan on Marine Litter Management, as deemed appropriate, in preparing the advice mentioned in subparagraph h) above, in particular for the preparation of specific guidelines to determine the application of charges at reasonable costs for the use of port reception facilities or, where appropriate, the application of a No-Special-Fee system, in consultation with various relevant regional and global institutions and initiatives.</p>
<p>6 Delivery of ship generated wastes.</p>	<p>c) REMPEC to have provided advice on the subject.</p>
<p>7 Improved follow-up of pollution events as well as monitoring and surveillance of illicit discharges.</p>	<p>c) REMPEC to have analysed, as far as practical, through direct correspondence with the Contracting Parties, the reasons behind the past poor record of compliance with this objective by many Contracting Parties;</p> <p>d) REMPEC to have organised and participated in any new activities on this issue where the Centre is requested to play a role;</p> <p>e) REMPEC to have facilitated the organisation of regular coordinated or individual aerial surveillance operation for illicit ship pollution discharges;</p> <p>f) REMPEC to have explored the continuation of the CleanSeaNet services offered by EMSA available to all Contracting Parties to the Barcelona Convention that are not Member States of the EU, currently through the SAFEMED III Project, until 2021 and beyond;</p> <p>g) REMPEC to have cooperated with other Regional Agreements and EMSA.</p>
<p>8 To improve the level of enforcement and of the prosecution of discharge offenders.</p>	<p>c) REMPEC to have provided support to Contracting Parties, and to have acted as the Secretariat of MENELAS and reported on its activities to the Contracting Parties at each</p>

	<p>of their Ordinary Meetings;</p> <p>d) REMPEC to have maintained the MENELAS information system;</p> <p>e) REMPEC to have collaborated with the UNEP/MAP Secretariat to further explore possible synergies with the Regional Seas framework.</p>
9 To reduce the pollution generated by pleasure craft activities.	<p>c) REMPEC to have assisted Mediterranean coastal States in the implementation of the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean;</p> <p>d) REMPEC to have to keep a record of the relevant reports sent by the Contracting Parties and to have submitted periodical synthetic reports to the relevant meetings of the Contracting Parties.</p>
10 Reduced risk of collisions by establishing Ship's Routeing Systems.	<p>c) REMPEC to have assisted Contracting Parties, either individually or collectively, in the identification of possible sea areas where a routeing system might be deemed necessary and in the preparation of the relevant documentation to initiate the process at IMO</p> <p>d) REMPEC to have supported Contracting Parties in their efforts toward the establishment of Marine Spatial Plans.</p>
11 Improved control of maritime traffic.	<p>c) REMPEC to have negotiated, on behalf of Contracting Parties, with appropriate organisations and agencies the international financial assistance required to establish the regime referred to in sub-paragraph a) of this specific objective;</p>
12 Identification of Particularly Sensitive Sea Areas (PSSAs).	<p>b) REMPEC to have initiated the process of identification of those areas which, after examination by the REMPEC Focal Points, could be proposed for designation as PSSAs taking also into account, where appropriate, possible synergies with actions undertaken on the establishment of MSPs referred to under Specific Objective 10;</p> <p>c) REMPEC to have assisted Mediterranean coastal States to conduct the necessary studies and to prepare the relevant submissions to IMO for the designation of PSSAs;</p> <p>d) REMPEC to have explored the possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme.</p>
13 Reduction of marine noise caused by ships.	<p>b) REMPEC to have provided Mediterranean coastal States with advice and assistance in order to fulfil this specific objective.</p>
14 To establish procedures for designation of places of refuge in order to minimise the risk of widespread pollution.	<p>c) REMPEC to have provided assistance to countries to define procedures and draw up plans as specified in this specific objective and to have assisted them in raising funds for that purpose, <i>inter alia</i>, from the IMO's Integrated Technical Cooperation Programme</p>

<p>15 To examine the possibility of designating the Mediterranean Sea or parts thereof as a SOx emission control area, under MARPOL Annex VI and effectively implement the existing energy efficiency measures.</p>	<ul style="list-style-type: none"> d) REMPEC to have prepared a study based on the input of Contracting Parties, aimed at assessing the feasibility of the alternatives referred to in sub-paragraph a) of this specific objective; e) REMPEC to have assisted Mediterranean coastal States, either individually or collectively, to prepare a submission to IMO proposing the designation as a SOx ECA of an area or areas of the Mediterranean Sea; f) REMPEC to have provided Contracting Parties with relevant information on possible future further measures for enhancing the energy efficiency of international shipping; g) REMPEC to have assessed existing data collection and reporting systems for fuel consumption of ships in the Mediterranean region and carried out pilot studies on voluntary “Data Collection and Reporting”; h) REMPEC to have explored the possibility of obtaining assistance for the above purposes under the IMO’s Integrated Technical Cooperation Programme.
<p>16 To ensure that adequate emergency towing capacity is available throughout the Mediterranean to assist vessels, including tankers, in distress.</p>	<ul style="list-style-type: none"> b) REMPEC to have assisted Contracting Parties that so request in preparing and implementing the agreements referred to in sub-paragraph a) of this specific objective. c) REMPEC to have assessed the capability of Mediterranean coastal States in terms of emergency towing equipment and to have provided support as requested.
<p>17 To enhance the levels of pre-positioned spill response equipment under the direct control of Mediterranean coastal States.</p>	<ul style="list-style-type: none"> c) REMPEC to have provided assistance to the States which so request in identifying the minimum required level of pre-positioned State-controlled spill response equipment; d) REMPEC to have disseminated to the Contracting Parties the information concerning the applicable ways of financing the acquisition of such equipment and have assisted them in this regard, as necessary; e) REMPEC to have maintained the regional information system and to have updated the related inventory of the above equipment; f) REMPEC to have envisaged possible synergies to interconnect the Regional Information System (RIS) with CECIS and to have facilitated the updating of these databases through an interconnected system.
<p>18 To encourage the participation of the regional scientific and technical institutions in research and development activities and to facilitate transfer of technology.</p>	<ul style="list-style-type: none"> d) REMPEC to have assisted regional institutions and industry in identifying fields of research in which there is a need for enhancement of the state-of-the-art of spill preparedness and response technologies and techniques; e) REMPEC to have assisted in the dissemination and exchange of results of national R&D activities and programmes; f) REMPEC to have facilitated the participation of national and regional research institutions and industry in the relevant international fora;

	<p>g) REMPEC to have cooperated with other Regional Agreements in carrying out the above requests.</p>
<p>19 To improve the quality, speed and effectiveness of decision-making process in case of marine pollution incidents through the development and introduction of technical and decision support tools.</p>	<p>e) REMPEC to have revised and upgraded the existing IT based decision support tools, and to have developed new IT based decision support tools and to have made them available to the competent national authorities of the Contracting Parties;</p> <p>f) REMPEC to have facilitated the coordination and the implementation of the programme of work of the Mediterranean Technical Working Group;</p> <p>g) REMPEC to have explored possible interaction and capitalisation of decision support tools available at Mediterranean and European levels;</p> <p>h) REMPEC to have supported the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme;</p> <p>i) REMPEC to have integrated any developments on decision support tools under specific objectives 20, 21 and 22.</p>
<p>20 To increase as much as practical, the level of knowledge in the field of preparedness and response to accidental marine pollution by oil and other harmful substances.</p>	<p>d) REMPEC to have assisted Contracting Parties in the development and implementation of their national training programme;</p> <p>e) REMPEC to have delivered “Training of Trainers” courses, based in particular on the work developed under POSOW Projects;</p> <p>f) REMPEC to have focused regional training courses on specific, highly specialised issues;</p> <p>g) REMPEC to have taken into account, when preparing and supporting the implementation of national training programmes, the relevant model training courses updated by the IMO Sub-Committee on Pollution Prevention and Response (PPR); other Regional Agreements, and EMSA under its relevant Action Plans;</p> <p>h) REMPEC to have promoted the organisation of regular exercises to test national and sub-regional response capacity;</p> <p>i) REMPEC to have explored the possibility of obtaining assistance for the above purposes under the IMO’s Integrated Technical Cooperation Programme and to have mobilised other external resources and means.</p>
<p>21 To revise the existing recommendations, principles and guidelines, and to develop new ones aimed at facilitating international cooperation and mutual assistance within the framework of Prevention and Emergency Protocol.</p>	<p>e) REMPEC to have compiled an inventory of the applicable national procedures governing the entry into, movement within and exit from their territory of specialised personnel and equipment that might be provided as mutual assistance in case of emergency, and to have prepared recommendations for improving those national procedures that could seriously hamper providing such assistance;</p> <p>f) REMPEC to have proposed for adoption to the Meetings of the Contracting Parties revised, updated and/or amended texts of the relevant regional recommendations,</p>

	<p>principles and guidelines;</p> <ul style="list-style-type: none"> g) REMPEC to have proposed for adoption to the Meetings of the Contracting Parties new recommendations, principles and guidelines, as necessary; h) REMPEC to have cooperated with IMO, other Regional Agreements, EMSA under its relevant Action Plans and the Union Civil Protection Mechanism, taking into account any new developments on international cooperation and mutual assistance; i) REMPEC to have explored the possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme, and to have mobilised other external resources and means.
<p>22 To strengthen the capacity of individual coastal States to respond efficiently to marine pollution incidents through development of sub-regional operational agreements and contingency plan.</p>	<ul style="list-style-type: none"> c) REMPEC to have assisted Contracting Parties that have not yet adopted their national contingency plans or need to review them to integrate HNS and/or offshore components, in the development or updating and implementation of national preparedness and response systems; d) REMPEC to have facilitated the assessment of national contingency plans and national response systems, through self-assessment or peer reviews to commensurate their national response capacities with the existing oil and HNS spill risks from ships, sea ports and oil handling facilities and to have evaluated gaps between national plans in order to define appropriate actions to ensure the compatibility of operational arrangements in view of the conclusion of bilateral and/or sub-regional agreements; e) REMPEC to have assisted Contracting Parties in preparing sub-regional contingency plans and in drafting agreements on their implementation; f) REMPEC to have utilised advice and material which may be made available by other Regional Agreements; g) REMPEC to have explored the possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme, and to have mobilised other external resources and means.

Appendix 2
List of relevant International Conventions and European Union Legislation

LIST OF RELEVANT INTERNATIONAL CONVENTIONS AND EUROPEAN UNION LEGISLATION

INTERNATIONAL CONVENTIONS AND OTHER MANDATORY INSTRUMENTS

Note: The status of the Conventions and other mandatory instruments listed below corresponds to March 2015. In implementing the Regional Strategy, Contracting Parties and REMPEC should endeavour to apply the relevant instruments **as amended** at the time of implementation.

1. International Conventions dealing with maritime safety and prevention of pollution from ships:

- the International Convention on Load Lines, 1966 (LL 1966);
- the Protocol of 1988 relating to the International Convention on Load Lines, 1966;
- the International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974),
- the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocols of 1978 and 1997 relating thereto (MARPOL) and its Annexes;
- the International Convention on Standards of Training, Certification and Watch keeping for Seafarers, 1978 as amended in 1995 (STCW 1995);
- the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG 1972), as amended;
- the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 1969);
- the International Convention on the Control of Harmful Antifouling Systems on Ships, 2001;
- the International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004;
- the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009;
- the 1996 London Protocol on Prevention of Pollution by Dumping of Wastes and Other Matter; and
- the ILO Merchant Shipping (Minimum Standards) Convention, 1976 (No. 147), and the Protocol of 1996 relating thereto.

2. International Conventions dealing with combating pollution:

- the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC);
- the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances 2000 (OPRC-HNS Protocol);
- the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (INTERVENTION 1969) and its Protocol relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil, 1973 (INTERVENTION PROTOCOL 1973);
- the International Convention on Salvage, 1989 (SALVAGE 1989); and
- the Nairobi International Convention on the Removal of Wrecks, 2007.

3. International Conventions dealing with liability and compensation for pollution damage:

- the International Convention on Civil Liability for Oil Pollution Damage, 1992 (CLC 1992);
- the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (FUND 1992);
- the Protocol on the Establishment of a Supplementary Fund for Oil Pollution Damage, 2003;
- the Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims, 1976;

- the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001; and
- the 2010 Protocol to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996.

RELEVANT EUROPEAN UNION LEGISLATION

Directive 2005/33/EC of the European Parliament and of the Council of 6 July 2005 amending Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels (*OJ L 191 of 22.7.2005*)

Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (*OJ L 164 of 25.06.2008*)

Directive 2009/15/EC of the European Parliament and of the Council of 23 April 2009 on common rules and standards for ship inspection and survey organisations and for the relevant activities of maritime administrations (*OJ L 131 of 28.5.2009*)

Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control (*OJ L 131 of 28.5.2009*) amended by:

- *Directive 2013/38/EU of the European Parliament and of the Council, of 12 August 2013 (OJ L 218 of 14.8.2013); and*
- *Regulation (EU) n° 1257/2013 of the European Parliament and of the Council, of 20 November 2013 (OJ L 330 of 10.12.2013).*

Directive 2009/17/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2002/59/EC establishing a Community vessel traffic monitoring and information system (*OJ L 131 of 28.5.2009*)

Commission Directive 96/40/EC, of 25 June 1996, establishing a common model for an identity card for inspectors carrying out port State control (*OJ L 196 of 7.8.1996*)

Regulation (EC) n° 336/2006 of the European Parliament and of the Council of 15 February 2006 on the implementation of the International Safety Management Code within the Community and repealing Council Regulation (EC) No 3051/95 (*OJ L 64 of 4.3.2006*)

Directive 2014/89/EU of the European Parliament and of the Council establishing a framework for maritime spatial planning, which should be transposed, by 2016, by EU Member States in view of the establishment of their Maritime Spatial Plans (MSP) by 2021 (*OJ L 257 of 28.8.2014*)

Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 on marine equipment and repealing Council Directive 96/98/EC (*OJ L 257 of 28.8.2014*)

Directive 99/95/EC of the European Parliament and of the Council of 13 December 1999 concerning the enforcement of provisions in respect of seafarers' hours of work on board ships calling at Community ports (*OJ L 14 of 20.1.2000*)

Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues (*OJ L 332 of 28.12.2000*), amended by:

- *Commission Directive 2002/84/EC, of 5 November 2001 (OJ L 324 of 29.11.2002);*
- *Commission Directive 2007/71/EC, of 13 December 2007 (OJ L 329 of 14.12.2007);*
- and*
- *Regulation (EC) n° 1137/2008, of 22 October 2008 (OJ L 311 of 21.11.2008).*

Directive 2008/106/EC of the European Parliament and of the Council of 19 November 2008 on the minimum level of training of seafarers (recast) (*OJ L 323, 3.12.2008*)

Directive 2001/96/EC of the European Parliament and the Council of 4 December 2001 establishing harmonised requirements and procedures for the safe loading and unloading of bulk carriers (*OJ L 13 of 16.1.2002*), amended by:

- *Commission Directive 2002/84/EC, of 5 November 2001 (OJ L 324 of 29.11.2002); and*
- *Regulation (EC) n° 1137/2008, of 22 October 2008 (OJ L 311 of 21.11.2008).*

Regulation (EU) n° 530/2012 of the European Parliament and of the Council of 13 June 2012 on the accelerated phasing-in of double-hull or equivalent design requirements for single-hull oil tankers (*OJ L 172 of 30.6.2012*)

Directive 2002/59/EC of the European Parliament and the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC (*OJ L 208 of 5.8.2002*), amended by:

- *Directive 2009/17/EC, of 23 April 2009 (OJ L 131 of 28.5.2009);*
- *Directive 2009/18/EC, of 23 April 2009 (OJ L 131 of 28.5.2009);*
- *Commission Directive 2011/15/EU, of 23 February 2011 (OJ L 49 of 24.2.2011); and*
- *Commission Directive 2014/100/EU, of 28 October 2014 (OJ L 308 of 29.10.2014).*

Regulation (EC) n° 1406/2002 of the European Parliament and of the council of 27 June 2002 establishing a European Maritime Safety Agency (*OJ L 208, 05.08.2002*), amended by:

- *Regulation (EC) n° 1644/2003, of the European Parliament and of the Council of 22 July 2003 (OJ L 245 of 29.09.2003);*
- *Regulation (EC) n° 724/2004, of the European Parliament and of the Council of 31 March 2004 amending Regulation (EC) No 1406/2002 (OJ L 123 of 29.04.2004);*
- *Regulation (EC) n° 1891/2006, of 18 December 2006 (OJ L 394 of 30.12.2006); and*
- *Regulation (EU) n° 100/2013 of 15 January 2013 (OJ L 39 of 09.2.2013).*

Council Decision (2002/762/EC) of 19 September 2002 authorising the Member States, in the interest of the Community, to sign, ratify or accede to the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (the Bunkers Convention) (*OJ L 256 of 25.09.2002*)

Regulation (EC) n° 2099/2002 of the European Parliament and of the Council of 5 November 2002 establishing a Committee on Safe Seas and Prevention of Pollution from Ships (COSS) and amending the Regulations on maritime safety and prevention of pollution from ships (*OJ L 324 of 29.11.2002*), amended by:

- *Commission Regulation (EC) n° 415/2004, of 5 March 2004 (OJ L 68 of 06.03.2004);*
- *Commission Regulation (EC) n° 93/2007, of 30 January 2007 (OJ L 22 of 31.1.2007);*
- *Regulation (EC) n° 596/2009, of 18 June 2009 (OJ L 188 of 18.7.2009); and*
- *Regulation (EU) n° 530/2012, of 13 June 2012 (OJ L 172 of 30.6.2012).*

Directive 2002/84/EC of the European Parliament and of the Council of 5 November 2002 amending the Directives on maritime safety and the prevention of pollution from ships (*OJ L 324 of 29.11.2002*), amended by:

- *Directive 2008/106/EC, of 19 November 2008 (OJ L 323 of 3.12.2008);*
- *Directive 2009/45/EC, of 6 May 2009 (OJ L 163 of 25.6.2009); and*
- *Directive 2014/90/EU, of 23 July 2014 (OJ L 257 of 28.8.2014).*

Council Decision (2002/971/EC) of 18 November 2002 authorising the Member States, in the interest of the Community, to ratify or accede to the International Convention on Liability and Compensation

for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (the HNS Convention) (*OJ L 337 of 13.12.2002*)

Regulation (EC) n° 782/2003 of the European Parliament and of the Council of 14 April 2003 on the prohibition of organotin compounds on ships (*OJ L 115 of 9.5.2003*), amended by:

- *Commission Regulation (EC) n° 536/2008, of 13 June 2008 (OJ L 156 of 14.06.2008)*
- and
- *Regulation (EC) n° 219/2009, of 11 March 2009 (OJ L 87 of 31.3.2009).*

Council Decision (2004/246/EC) of 2 March 2004 authorising the Member States to sign, ratify or accede to, in the interest of the European Community, the Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992, and authorising Austria and Luxembourg, in the interest of the European Community, to accede to the underlying instruments (*OJ L 78 of 16.3.2004*), amended by:

- *Council Decision (2004/664/EC), of 24 September 2004 (OJ L 303 of 30.9.2004)*

Directive 2012/33/EU of the European Parliament and of the Council of 21 November 2012 amending Council Directive 1999/32/EC as regards the sulphur content of marine fuels (L 327/1 of 27.11.2012)

Appendix 3

Draft estimated cost of implementation of the Regional Strategy

Draft estimated cost of implementation of the Regional Strategy

Notes:

1. The cost estimations tabulated below have been assessed on the basis of the Draft estimation of required means for the implementation of the Mediterranean Offshore Action Plan and drawing from data and assumptions made in the 2005 Study Concerning the Estimate of Costs of the Implementation of the Regional Strategy for Prevention of and Response to Marine Pollution from Ships in the Mediterranean. The estimated costs represent **rough estimates** and, therefore, should not be taken as representing a proper implementation budget which, if required, should be undertaken as a separate exercise.
2. The estimated means required by the Secretariat (REMPEC) assume that the Centre is adequately staffed. The implementation of the Regional Strategy should require additional dedicated staff, preferably funded through a project or external donors, or a succession of officers seconded by the States. The present estimated cost of implementation of the Regional Strategy does not include the cost related to any additional staff.
3. Where the activity concerned is deemed to be part of the Administration's or REMPEC's habitual responsibilities, once the additional staff have been engaged, the estimated cost is given as **nil**.
4. No attempt has been made to quantify the cost of providing adequate port reception facilities as this will vary greatly from country to country and depends on many variables (reference may be made to the Study concerning the estimate of costs of the implementation of the regional strategy for prevention of and response to marine pollution from ships in the Mediterranean - REMPEC/WG.25/6).
5. The services of external expert consultants and the holding of regional seminars and training activities have been considered necessary for the timely and thorough implementation of specific objectives 3, 5, 6, 9, 12, 14, 15, 17, 19, 20 and 21.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	a) Necessary actions are taken to ratify and implement, with <i>high priority</i> , the MARPOL Convention and its six annexes, to ensure their transposition into national law, placing special emphasis on revised Annex V (Regulations for the prevention of pollution by garbage from ships) and Annex VI (Regulations for the prevention of air pollution from ships) as amended, and to cooperate through REMPEC to ensure full compliance with its provisions;	Appropriate action by the maritime administration	Nil
	b) Necessary actions are taken to ratify and implement, with high priority, other IMO relevant international conventions and to ensure their transposition into national law by the same time and full compliance with their provisions	Appropriate action by the maritime administration	Nil
	c) Advice and assistance provided to Mediterranean coastal States, which so request, in order to meet the priorities set forth in sub-paragraphs (a) and (b) above;	Staff time.	Nil
	d) Assistance provided to Mediterranean coastal States, which so request, in their efforts to ratify and implement the International Convention for the Control and Management of Ships' Ballast Water and sediments, 2004, in conjunction with the implementation of the Mediterranean Strategy on Ships' Ballast Water Management and of the GloBallast Partnerships Project in the Mediterranean in collaboration with the Regional Activity Centre for Specially Protected Areas (RAC/SPA)	Staff time	Nil
	e) Assistance provided for the above purposes under the IMO's Integrated Technical Cooperation Programme.	Staff time	Nil
	a) Application of the 2011 Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species, with <i>medium priority</i> , when adopting measures to minimise the risk of introducing such species via biofouling, and any experience gained in their implementation is reported to IMO	Appropriate action by the maritime administration, with additional support	Nil

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	b) Dissemination of the Guidelines to the shipping industry and other interested parties, which are requested to cooperate in minimising the risks involved	Ditto.	Nil
	c) Advice and assistance provided to Mediterranean coastal States, which so request, in order to fulfil the aims under sub-paragraphs (a) and (b) above	Staff time	Nil
3 Ensuring effective maritime administrations.	a) National Action Plans (NAP) prepared, with <i>high priority</i> , with the assistance of REMPEC if necessary, to enable the assessment of the progress made, and to guide the full implementation of the Regional Strategy in a tailored manner, and to conduct a national assessment of the capabilities and define the necessary remedial action	Appropriate action by the maritime administration Regional seminar	Nil 75,000 ²²
	b) All Mediterranean coastal States that have not already done so, have enhanced with high priority, the performance of their maritime administrations on the basis of the National Action Plan (NAP) mentioned above, by conducting a self-assessment of their national capabilities and performance in giving full and complete effect to MARPOL and other applicable conventions, by using the guidance set out in the relevant IMO Resolution dealing with the self-assessment of flag State performance and other relevant IMO recommendations and guidelines	Ditto.	Nil
	c) All Mediterranean coastal States that have not already done so, in their efforts to protect the marine environment and once the self-assessment mentioned in subparagraph a) above has been carried out successfully and any remedial action taken, have undertaken the IMO Member State Audit Scheme, using the III Code as the audit standard and following the Framework and Procedures for the IMO Member State Audit Scheme, once it is fully institutionalised when the said III Code becomes mandatory under MARPOL and other Conventions	Ditto.	Nil

²² Estimated cost of a two-day seminar held in Malta, with two participants per country in attendance plus the help of an external expert consultant.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	d) Assistance provided to the Mediterranean coastal States which so request in the development of the National Action Plan mentioned in sub-paragraph a) above, designed to enable them to assess progress made, to guide them in the full implementation of the Regional Strategy in a tailored manner, and to conduct a national assessment of their capabilities and define the necessary remedial action	Staff time and travel ²³ External consultancy assistance	See footnote 2 210,000 ²⁴
	e) Continuous assistance provided to Mediterranean coastal States which so request in enhancing the performance of their maritime administrations in line with new IMO developments, in particular IMSAS	Ditto.	Ditto.
	f) Support provided to the Mediterranean coastal States which so request to prepare for undertaking the IMO Member State Audit Scheme, having explored the possible technical assistance to which some of them may be entitled under the IMO's Integrated Technical Cooperation Programme and other sources	Ditto.	Ditto.
	g) Continuous improvement of the knowledge and expertise of flag State inspection officers by establishing, through REMPEC, a programme of training activities related to relevant international instruments, in particular MARPOL, ensuring appropriate training for ship inspectors	Staff time External consultancy assistance	Nil 15,000
4 To strengthen the Memorandum of Understanding (MoU) on port State control (PSC) in the Mediterranean region (Mediterranean MoU).	a) The mandate to REMPEC whereby the Centre should, if and when possible, offer its assistance to the Mediterranean MoU on port State control in order to improve its effectiveness and, if so requested, to facilitate cooperation between the Paris MoU and the Mediterranean MoU is maintained	Appropriate action by the maritime administration	Nil
	b) the necessary resources and means to enable the Mediterranean MoU to function efficiently are made available, <i>with high priority</i>	Ditto.	Nil

²³ A travel budget for the Secretariat amounting to 15,000 euro for six years (2016-2021) has been estimated, as reflected at the end of the table.

²⁴ A technical support budget amounting to 10,000 euro per country has been estimated.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	c) Participation in the meetings of the MoU Committee	Staff time and travel ²⁵	See footnote 4
	d) the Secretariat is associated with port State control training activities addressing environmental matters, including those related to Anti Fouling Systems, Ballast Water Management and biofouling, where appropriate, in collaboration with recognised training institutions within the region	Ditto.	Ditto.
	e) the Secretariat works in association with the MoUs on port State control, in particular with the Paris MoU, on the organisation and follow-up analysis of concentrated inspection campaigns on MARPOL-related deficiencies	Ditto.	Ditto.
5 Provision of reception facilities in ports.	a) Provision (including activities b) to g)) of adequate reception facilities in their ports, with <i>high priority</i> , unless specified otherwise and if appropriate action has not been already taken and procedures related to the cost of the use of such facilities have been considered, enabling their use as soon as they are available at a fee which should be reasonable and should not serve as a disincentive for their use	Appropriate action by the maritime administration, in conjunction with other agencies	See note 4 above
	b) Well-structured advice provided to Mediterranean coastal States, which so request, that may include, but not necessarily limited to, assessing the type, specifications, and capacity of the equipment necessary at major ports to efficiently and effectively handle shipboard residues and mixtures. Such assistance may also include preparation of guidelines or sample form of operation plans. All this should be based on previous work done on this matter and taking into account the latest edition of the IMO Comprehensive Manual on Port Reception Facilities, the IMO Guide to Good Practice for Port Reception Facility Providers and Users and the new requirements incorporated since 2005 in the relevant mandatory instruments, to assist Contracting Parties in the accomplishment of this objective	Staff time External consultancy assistance Regional seminar	Nil 15,000 ²⁶ 60,000 ²⁷

²⁵ A travel budget for the Secretariat amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table.

²⁶ External consultant to prepare required advice and assist with the holding of the regional seminar.

²⁷ Estimated cost of a two-day seminar held in Malta, with two participants per country in attendance, plus the help of an external expert consultant.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	c) Contribution to the implementation of the Regional Plan on Marine Litter Management, as deemed appropriate, in preparing the advice mentioned in subparagraph h) above, in particular for the preparation of specific guidelines to determine the application of charges at reasonable costs for the use of port reception facilities or, where appropriate, the application of a No-Special-Fee system, in consultation with various relevant regional and global institutions and initiatives	Staff time External consultancy assistance	Nil 75,000 ²⁸
6 Delivery of ship-generated wastes.	a) Establishment, with <i>high priority</i> and if appropriate action has not been already taken, of a system of notification to a vessel's next port of call of the status of its on board retention of bilge waters, oily wastes, HNS residues, sewage, garbage, ozone-depleting substances and exhaust gas cleaning residues	Appropriate action by the maritime administration	Nil
	b) implementation by all Mediterranean coastal States, with <i>high priority</i> , of national regulations empowering maritime authorities to require, if they deem it necessary, the Masters of vessels to discharge wastes into designated port reception facilities before sailing	Ditto.	Nil
	c) Advice provided on the subject as may be requested by Contracting Parties, possibly in association with the well-structured advice requested under the Specific Objective on the provision of reception facilities in ports, taking also into account, where appropriate, the Regional Plan on Marine Litter Management	Staff time and external consultancy assistance under activity 5 h) above	Nil
7 Improved follow-up of pollution events as well as monitoring and surveillance of illicit discharges.	a) Establishment, with <i>high priority</i> and if appropriate action has not been already taken, of systems and procedures for national and sub-regional monitoring and surveillance including, where practicable, regular individual or coordinated aerial surveillance in the waters under the jurisdiction of Contracting Parties, if the Parties so agree, and to report the results reported to the regular meetings of REMPEC Focal Points	Appropriate action by the maritime administration	Nil

²⁸External consultant to support the preparation of specific guidelines and to provide technical support to up to 10 main ports in the region.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	b) Establishment, with <i>high priority</i> , of sub-regional systems, including procedures to over-fly the waters under the jurisdiction of a neighbouring State if the neighbouring Parties so agree, for surveillance of environmentally sensitive and/or high risk zones of the Mediterranean Sea	Appropriate action by the maritime administration	Nil
	c) Analysis, as far as practical, through direct correspondence with the Contracting Parties, of the reasons behind the poor record of compliance with this objective by many Contracting Parties	Staff time	Nil
	d) Continue organisation and participation in, funding and human resources permitting, any new activities on this issue where the Centre is requested to play a role, building on the experience gathered from the activities carried out on national monitoring and surveillance	Staff time and travel ²⁹	See footnote 8
	e) Facilitation of the organisation of regular coordinated or individual aerial surveillance operation for illicit ship pollution discharges	Staff time	Nil
	f) The continuation of the CleanSeaNet services offered by EMSA available to all Contracting Parties to the Barcelona Convention that are not Member States of the EU, currently through the SAFEMED III Project, until 2021 and beyond; have been explored	Staff time	Nil
	g) Cooperation with other Regional Agreements and EMSA in carrying out the above requests.	Staff time	Nil
8 To improve the level of enforcement and the prosecution of discharge offenders.	a) All Mediterranean coastal States have ensured, with <i>high priority</i> , the existence of a national legal framework (regulations) as a basis for prosecuting discharge offenders for infringements of the MARPOL Convention or of any national legal framework implementing it	Appropriate action by the maritime administration	Nil
	b) Active participation, with <i>high priority</i> , in the Mediterranean Network of Law Enforcement Officials relating to MARPOL within the framework of the Barcelona Convention in accordance with its terms of reference	Ditto.	Nil

SPECIFIC	OUTPUT	MEANS	INDICATIVE
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²⁹A travel budget for the Secretariat amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table.

OBJECTIVE		REQUIRED	ESTIMATED ADDITIONAL COST (EURO)
	c) Continuous support provided to Contracting Parties, acting as the Secretariat of MENELAS and reports on its activities are submitted to the Contracting Parties at each of their Ordinary Meetings	Staff time	Nil
	d) Maintenance of the MENELAS information system	Staff time and IT maintenance	6,000 ³⁰
	e) Collaboration with UNEP/MAP Secretariat to further exploit possible synergies with the Regional Seas framework such as the North Sea Network of investigators and Prosecutors (NSN), the Baltic Sea Network of Environmental Crime Prosecutors (ENPRO) and EMSA in the framework of MENELAS	Staff time and travel ³¹	See footnote 10
9 To reduce the pollution generated by pleasure craft activities.	a) Implementation, with <i>high priority</i> , of the Guidelines concerning Pleasure Craft Activities and the Protection of the Marine Environment in the Mediterranean, in conjunction with the relevant provisions of the MARPOL Convention and the Regional Plan on Marine Litter Management	Appropriate action by the maritime administration	Nil
	b) Measures undertaken to implement the said Guidelines reported to the Secretariat	Ditto.	Nil
	c) Assistance provided to Mediterranean coastal States in the implementation of the Guidelines referred to in subparagraph a) above, taking into account the relevant provisions of the MARPOL Convention and the Regional Plan on Marine Litter Management	Staff time Regional seminar plus external consultancy	Nil 75,000 ³²
	d) Recordkeeping of the reports sent by the Contracting Parties under subparagraph b) above and submission of periodical synthetic reports to the relevant meetings of the Contracting Parties	Staff time	Nil

³⁰ A website maintenance budget of 2,000 euro per biennium for six years (2016-2021) has been estimated.

³¹ A travel budget for the Secretariat amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table.

³² Estimated cost of a two-day seminar held in Malta, with two participants per country in attendance plus the help of an external expert consultant.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
10 Reduced risk of collisions by establishing Ship's Routeing Systems.	a) Additional appropriate routeing systems in the Mediterranean are proposed to IMO, where necessary, for possible adoption in accordance with international law	Appropriate action by the maritime administration	Nil
	b) Establishment of MSPs under national jurisdiction is considered, when and where possible, and without prejudice to the sovereign right of the States, in close collaboration with the relevant national competent authorities and in cooperation with other Mediterranean coastal States ensuring that their MSPs are coherent and coordinated across the Mediterranean region	Appropriate action by the maritime administration	Nil
	c) Assistance provided to Contracting Parties that so request, either individually or collectively, in the identification of possible sea areas where a routeing system might be deemed necessary and in the preparation of the relevant documentation to initiate the process at IMO	Staff time	Nil
	d) Support is provided, in close cooperation with other MAP components, to Contracting Parties which so require in their efforts toward the establishment of MSPs	Staff time and travel ³³	See footnote 12
11 Improved control of maritime traffic.	a) Areas of the Mediterranean where control of maritime traffic could be improved by the establishment of a regime based on the use of Automatic Identification System (AIS) in conjunction with Vessel Traffic Services (VTS) and mandatory ship reporting systems, are identified and the approval procedures is completed as soon as possible thereafter	Appropriate action by the maritime administration	Nil
	b) Improvement, on a continuous basis, of technical cooperation among VTS Centres of neighbouring countries and, according to the need, information is exchanged about ships by using AIS and other related systems in the common surveillance area	Ditto.	Nil

³³A travel budget for the Secretariat amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	c) The international financial assistance required to establish the regime referred to in sub-paragraph a) above, taking also into account, where appropriate, possible synergies with actions undertaken on the establishment of MSPs referred to under Specific Objective 10, is negotiated, with <i>high priority</i> , with appropriate organisations and agencies on behalf of the Contracting Parties which so request.	Staff time	Nil
12 Identification of Particularly Sensitive Sea Areas (PSSAs).	a) Maritime areas within their jurisdiction which need the protection afforded by their designation as PSSAs are ascertained, with <i>medium priority</i> , and the support of REMPEC and RAC/SPA and, if so ascertained, the process of requesting IMO to enable such designation is initiated	Appropriate action by the maritime administration	Nil
	b) Initiation, on the request of Contracting Parties and in conjunction with RAC/SPA, of the process of identification of those areas which, after examination by the REMPEC Focal Points, could be proposed for designation as PSSAs taking also into account, where appropriate, possible synergies with actions undertaken on the establishment of MSPs referred to under Specific Objective 10	Staff time	Nil
	c) Assistance is provided, in cooperation with IMO, to the Mediterranean coastal States which so request, to conduct the necessary studies and to prepare the relevant submissions to IMO for the designation of PSSAs, if any, in strict compliance with the applicable IMO Guidelines	Staff time External consultancy assistance	Nil 15,000
	d) Possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme explored	Staff time	Nil

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
13 Reduction of marine noise caused by ships.	a) Awareness raised, with <i>medium priority</i> , through the dissemination of the advice contained in the IMO Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life among their national designers and shipbuilders, as well as operators of ships flying their flag, urging them to implement noise mitigation strategies on board their ships	Appropriate action by the maritime administration	Nil
	b) Advice and assistance is provided to Mediterranean coastal States, which so request, in order to fulfil the objective under sub-paragraphs (a) above	Staff time	Nil
14 To establish procedures for the designation of places of refuge in order to minimise the risks of widespread pollution.	a) Identification, with <i>high priority</i> , at the national level, of appropriate procedures as outlined in the relevant IMO Guidelines and relevant EU guidelines supplemented by the associated Guidelines and Principles prepared by REMPEC, in order to facilitate the decision making when designating a place of refuge for ships in need of assistance	Appropriate action by the maritime administration	Nil
	b) all Mediterranean coastal States have drawn up plans to deal with ships in distress, including, appropriate equipment and means, as required, and have defined the modalities of the response according to its nature and to the risk incurred	Appropriate action by the maritime administration	Nil
	c) Continuous assistance provided to countries, which so request, to define procedures and draw up plans as specified in sub-objectives a) and b) above, and to raise funds, <i>inter alia</i> , from the IMO's Integrated Technical Cooperation Programme	Staff time External consultancy assistance	Nil 15,000

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
<p>15 To examine the possibility of designating the Mediterranean Sea or parts thereof as a SOx emission control area under MARPOL Annex VI and effectively implement the existing energy efficiency measures.</p>	<p>a) [to examine, with <i>high priority</i>, if it is appropriate] <u>[to establish a technical committee of experts from the European Union and south Mediterranean coastal States to carry out a technical and economic feasibility study to examine if it is appropriate at the current stage]</u> to designate as a SOx Emission Control Area (ECA) certain areas of the Mediterranean Sea identified for that purpose, as well as, to explore the possibility to designate the whole of the Mediterranean Sea as a SOx ECA</p>	<p>Appropriate action by the maritime administration and the Secretariat</p>	<p>Nil</p>
	<p>b) once a decision is made and having ratified MARPOL Annex VI, a proposal to designate as a SOx ECA the area or areas of the Mediterranean Sea identified under sub-paragraph a) above is submitted to IMO, with <i>medium priority</i></p>	<p>Ditto.</p>	<p>Nil</p>
	<p>c) participation in relevant debates at the IMO on possible future further measures for enhancing the energy efficiency of international shipping, in particular, the development of a data collection system for fuel consumption of ships, <i>inter alia</i> by informing the Secretariat of the existence of data collection and reporting systems for fuel consumption of ships</p>	<p>Ditto.</p>	<p>Nil</p>
	<p>d) Preparation, with <i>high priority</i>, of a study based on the input of Contracting Parties, aimed at assessing the feasibility of the alternatives referred to in sub-paragraph a) above</p>	<p>Staff time External consultancy assistance</p>	<p>Nil 15,000</p>
	<p>e) Assistance provided to the Mediterranean coastal States which so request, either individually or collectively, to prepare a submission to IMO proposing the designation as a SOx ECA of the area or areas of the Mediterranean Sea identified under sub-paragraph a) above</p>	<p>Staff time Regional seminar</p>	<p>Nil 60,000³⁴</p>
	<p>f) Relevant information provided to Contracting Parties, which so request, on possible future further measures for enhancing the energy efficiency of international shipping</p>	<p>Staff time</p>	<p>Nil</p>

³⁴ Estimated cost of a two-day seminar held in Malta, with two participants per country in attendance.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	g) Assessment of existing data collection and reporting systems for fuel consumption of ships in the Mediterranean region and pilot studies on voluntary “Data Collection and Reporting” carried out	Staff time	Nil
	h) Possibility of obtaining assistance for the above purposes under the IMO’s Integrated Technical Cooperation Programme explored	Staff time	Nil
16 To ensure that adequate emergency towing capacity is available throughout the Mediterranean to assist vessels, including tankers, in distress.	a) Agreements with neighbouring coastal States considered, with <i>high priority</i> , if appropriate action has not been already taken, to enable them to share emergency towing equipment and arrangements to assist ships in distress in the Mediterranean, using as appropriate the Mediterranean guidelines on emergency towing	Staff time	Nil
	a) Assistance provided to Contracting Parties that so request in preparing and implementing the agreements referred to in sub-paragraph a) above	Staff time	Nil
	b) Assessment of the capability of the Mediterranean coastal States in terms of emergency towing equipment, and support provided to those Contracting Parties, which so request	Staff time	Nil
17 To enhance the levels of pre-positioned spill response equipment under the direct control of Mediterranean coastal States.	a) Information concerning national practices for financing the acquisition of spill response equipment, shared or exchanged, with <i>high priority</i> , with a view to assist Mediterranean Coastal States in determining all feasible methods to finance spill response equipment	Appropriate action by the maritime administration	Nil
	b) Establishment, with <i>medium priority</i> , of national stockpiles of State controlled and private pre-positioned oil and HNS spill response equipment and the related inventory at national level and regional level is kept updated through REMPEC	Ditto	Nil
	c) Assistance provided to the States which so request in identifying the minimum required level of pre-positioned State-controlled spill response equipment	Staff time and external consultancy	210,000 ³⁵
	d) dissemination to the Contracting Parties of information concerning the applicable ways of financing the acquisition of such equipment and continuous assistance provided in this regard, as necessary	Staff time	Nil
SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED

³⁵ A technical support budget amounting to 10,000 euro per country has been estimated.

			ADDITIONAL COST (EURO)
	e) Maintenance of the regional information system and updated inventory of pre-positioned spill response equipment	IT maintenance	6,000 ³⁶
	f) Possible synergies to interconnect the Regional Information System (RIS) with CECIS to facilitate the access to the information at any time and in particular in case of emergency, and facilitate the update of these databases through an interconnected system, is envisaged	Staff time	Nil
18 To encourage the participation of the regional scientific and technical institutions in research and development activities and to facilitate transfer of technology.	a) Scientific and technical institutions, as well as the industry, actively participate in R&D activities and programmes related to accidental marine pollution prevention, preparedness and response	Appropriate action by the maritime administration	Nil
	b) National institutions and industry presents the results of their R&D activities and programmes at international fora	Ditto.	Nil
	c) National R&D activities are presented using the page created by REMPEC within the Country Profiles website	Ditto.	Nil
	d) Continuous assistance provided to regional institutions and industry in identifying fields of research in which there is a need for enhancement of the state-of-the-art of spill preparedness and response technologies and techniques	Staff time	Nil
	e) Continuous assistance provided in the dissemination and exchange of results of national R&D activities and programmes within and outside the Mediterranean region	Staff time	Nil
	f) Participation of national and regional research institutions and industry in the relevant international fora is facilitated with a view to making better known the results of R&D activities undertaken in the Mediterranean region	Staff time and travel ³⁷	See footnote 16

³⁶ An IT maintenance budget of 2,000 euro per biennium for six years (2016-2021) has been estimated.

³⁷ A travel budget for the Secretariat to implement the Regional Strategy amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	g) Cooperation with other Regional Agreements, in carrying out the above requests.	Staff time	Nil
19 To improve the quality, speed and effectiveness of decision-making process in case of marine pollution incidents through the development and introduction of technical and decision support tools.	a) The development and improvement of specific regional decision support tools are stimulated by promoting active participation of national scientific institutions and programmes, and through providing REMPEC with relevant data-sets and other information that might be available in the respective countries	Appropriate action by the maritime administration	Nil
	b) Active participation, through a country lead approach in the implementation of the programme of work of the MTWG as defined by the Meetings of Focal Points of REMPEC	Ditto.	Nil
	c) National oceano-meteorological institutes have joined the Mediterranean Operational Network for the Global Ocean Observing System and contributed to the maintenance of the above Mediterranean tools through regular data update	Ditto.	Nil
	d) Contribution to the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme	Ditto.	Nil
	e) Continuous revision and upgrade of the existing IT based decision support tools, and development of new IT based decision support tools available to the competent national authorities of the Contracting Parties , taking into account national or regional initiatives in this field	Staff time Regional seminar plus external consultancy IT development	Nil 75,000 ³⁸ 150,000 ³⁹
	f) Coordination and the implementation of the programme of work of the Mediterranean Technical Working Group facilitated	Staff time	

³⁸ Estimated cost of a two-day seminar held in Malta, with two participants per country in attendance plus the help of an external expert consultant.

³⁹ Estimated cost of IT developments

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	g) Coordination and the implementation of the programme of work of the Mediterranean Technical Working Group facilitated	Staff time	Nil
	h) Support provided for the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme	Staff time in connection with activity e) above	Nil
	i) Integration of any developments on decision support tools under Specific Objectives 20, 21 and 22	Staff time	Nil
20 To increase as much as practical, the level of knowledge in the field of preparedness and response to accidental marine pollution by oil and other harmful substances.	a) Establishment, with <i>high priority</i> , if appropriate action has not been already taken, of national training programmes for response to incidents involving oil and other HNS, based <i>inter alia</i> on IMO Model training courses Levels 1 and 2, for training national operating level and supervisory personnel respectively, with a view to ensuring a continuous education of such personnel	Appropriate action by the maritime administration, including training	Nil
	b) Dissemination of the knowledge acquired through train the trainer courses and replication of the training courses at local and national level	Ditto.	Nil
	c) Regular exercises carried out to test national response capacity in cooperation with all relevant stakeholders and to the possible extent involving neighbour coastal states to enhance bilateral and sub-regional cooperation	Appropriate action by the maritime administration	Cost of regular exercises ⁴⁰
	d) Assistance provided to Contracting Parties which so request in the development and implementation of their national training programme	Staff time	Nil
	e) Continuous delivery of “Training of Trainers” courses, based in particular on the work developed under POSOW Projects	Two regional training courses plus external consultancy support	150,000 ⁴¹

⁴⁰ The cost of regular exercises to test response capacity could not be quantified, as they involve several State departments and administrations.

⁴¹ Estimated cost of two two-day training courses held in Malta, with two participants per country in attendance plus the help of an external expert consultant.

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	f) Regional training courses on specific, highly specialised issues, identified at regular basis by the Meetings of REMPEC Focal Points	Three regional training courses	180,000 ⁴²
	g) The relevant model training courses updated by the IMO Sub-Committee on Pollution Prevention and Response (PPR); other Regional Agreements, and EMSA under its relevant Action Plans are taken into account, when preparing and supporting the implementation of national training programmes	Staff time	Nil
	h) Promotion of the organisation of regular exercises to test national and sub-regional response capacity in cooperation with all relevant stakeholders	Staff time and travel ⁴³	See footnote 22
	i) The possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme is explored and external resources and means <i>inter alia</i> from external donors, the private sector and the Union Civil Protection Mechanism are mobilised	Staff time	Nil
21 To revise the existing recommendations, principles and guidelines, and to develop new ones aimed at facilitating international cooperation and mutual assistance within the framework of the Prevention and Emergency Protocol.	a) Revision, with <i>high priority</i> if appropriate action has not been already taken, of the existing recommendations, principles and guidelines concerning accidental marine pollution preparedness, response and mutual assistance, as well as prevention of pollution from ships, that were adopted since 1987, paying particular attention to those that aim at removing possible obstacles which might hinder mutual assistance	Appropriate action by the maritime administration and the Secretariat	Nil
	b) Identification, with <i>high priority</i> if appropriate action has not been already taken, of all such recommendations, principles and guidelines that need to be revised, updated and/or amended	Ditto.	Nil

⁴² Estimated cost of three two-day Regional training held in Malta, with two participants per country in attendance

⁴³ A travel budget for the Secretariat to implement the Regional Strategy amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	c) Indication, with <i>high priority</i> if appropriate action has not been already taken, of additional recommendations, principles and guidelines which should be adopted at the regional level with a view to facilitating the implementation of the Prevention and Emergency Protocol in the field of international cooperation and mutual assistance	Ditto.	Nil
	d) Indication, with <i>high priority</i> if appropriate action has not been already taken, of additional recommendations, principles and guidelines which should be adopted at the regional level with a view to facilitating the implementation of the Prevention and Emergency Protocol in the field of international cooperation and mutual assistance	Ditto.	Nil
	e) The use of the CECIS Marine Pollution is considered in order to enhance coordination of requests and offers of international assistance	Staff time External resources	Nil
	f) Compilation, as soon as the necessary information is in hand, of an inventory of the applicable national procedures governing the entry into, movement within and exit from their territory of specialised personnel and equipment that might be provided as mutual assistance in case of emergency, and preparation of recommendations for improving those national procedures that could seriously hamper providing such assistance	Staff time External consultancy assistance, to cover activities e), f), g) in two separate but related missions	Nil 30,000
	g) Preparation, with <i>high priority</i> , in cooperation with REMPEC national Focal Points revised, updated and/or amended texts of the relevant regional recommendations, principles and guidelines to be propose for adoption to the Meetings of the Contracting Parties	Ditto.	See above
	h) Development, as the need arises and in cooperation with REMPEC national Focal Points, , new recommendations, principles and guidelines, as necessary, and to be propose for adoption to the Meetings of the Contracting Parties	Ditto.	See above

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	i) in carrying out the above requests, cooperation with IMO, other Regional Agreements, EMSA under its relevant Action Plans and the Union Civil Protection Mechanism, taking into account any new developments on international cooperation and mutual assistance	Staff time	Nil
	j) Possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme is explored and external resources and means <i>inter alia</i> from external donors, the private sector and the Union Civil Protection Mechanism are mobilised	Staff time	Nil
22 To strengthen the capacity of individual coastal States to respond efficiently to marine pollution incidents through development of sub-regional operational agreements and contingency plans.	a) Assessment, preparation, or revision and adoption, with high priority if appropriate action has not been already taken, of national contingency plans and establishments of national systems for preparedness for and response to oil and HNS spills from ships, sea ports and oil handling facilities, with a view to creating the necessary conditions for the development of sub-regional agreements	Appropriate action by the maritime administration and the Secretariat	Nil
	b) Sub-regional agreements covering the entire Mediterranean region negotiated, concluded and implemented including the relevant sub-regional contingency plans	Ditto.	Nil
	c) Continuous assistance provided to the Contracting Parties that have not yet adopted their national contingency plans or need to review their national contingency plans to integrate HNS and/or offshore components, in the development or update and implementation of national preparedness and response systems	Staff time	Nil

SPECIFIC OBJECTIVE	OUTPUT	MEANS REQUIRED	INDICATIVE ESTIMATED ADDITIONAL COST (EURO)
	d) Assessment of national contingency plans and national response systems, facilitated through self-assessment or peer reviews to commensurate national response capacities with the existing oil and HNS spill risks from ships, sea ports and oil handling facilities and to evaluate gaps between national plans in order to define appropriate actions to ensure the compatibility of operational arrangements in view of the conclusion of bilateral and/or sub-regional agreements	Staff time and travel ⁴⁴	See footnote 23
	e) Continuous assistance provided to Contracting Parties, which so request, in preparing or reviewing sub-regional contingency plans and in drafting agreements on their implementation	Ditto.	Ditto.
	f) Advice and material which may be made available by other Regional Agreements utilised in carrying out the above requests	Staff time	Nil
	g) The possibility of obtaining assistance for the above purposes under the IMO's Integrated Technical Cooperation Programme is explored and external resources and means <i>inter alia</i> from external donors, the private sector and the Union Civil Protection Mechanism are mobilised	Staff time	Nil

⁴⁴A travel budget for the Secretariat to implement the Regional Strategy amounting to 15,000 euro per year for six years (2016-2021) has been estimated, as reflected at the end of the table.

SUMMARY OF INDICATIVE COSTS OF IMPLEMENTATION OF THE REGIONAL STRATEGY 2016-2021, ADDITIONAL TO THE COST OF ENGAGING ONE DEDICATED OFFICER FOR EACH ADMINISTRATION			
Travel budget for the Secretariat 2016-2021	Travel required, <i>inter alia</i> , under activities 3 d) to f); 4 c) to e); 7 d); 8 e); 10 d); 18 f); 20 h) and 22 d) and e)		90,000
External consultancy support	Approximate cost of external consultants engaged under activities 3 d) to g); 5 h) and i); 6 c); 9 c); 12 c); 14 c); 15 d); 17 c) and e); 19 e); 20 e) and 21 e) to g)		600,000
Seminars and training activities	Approximate cost of holding regional seminars and training under activities 3 a) to c); 5 h); 9 c); 15 e); 19 e); and 20 a) and b) and e) to f), including external support where appropriate		675,000
IT Maintenance	Approximate cost for IT development and maintenance under activities 8 d) and 19 e)		162,000
TOTAL			1,527,000

Draft Decision IG.22/5

Regional Action Plan on Sustainable Consumption and Production in the Mediterranean

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as the Barcelona Convention,

Recalling that, at the Rio+20 Summit, Heads of State and Government reaffirmed that promoting sustainable consumption and production (SCP) patterns was an overarching objective of, and essential requirement for, sustainable development and that, accordingly they strengthened their commitment to accelerate the shift towards SCP patterns with the adoption of the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns;

Recalling Article 4 of the Barcelona Convention, the MSSD, and Decision IG.21/10 of COP 18 (Istanbul, Turkey, December 2013) which mandated the Secretariat to prepare a Mediterranean SCP Action Plan and a Roadmap for its implementation;

Recalling that at the UfM Ministerial Meeting on Environment and Climate Change (Athens, May 2014), Ministers expressed support for the development by UNEP/MAP of a Regional SCP Action Plan and Roadmap;

Fully aware that the SCP tools are called for, *inter alia*, in articles 5.4 and 9(c) of the LBS Protocol; Article 5.2 of the Hazardous Wastes Protocol; and Article 9 of the IZCM Protocol;

Adopts the Action Plan on Sustainable Consumption and Production in the Mediterranean (herein after referred to as “Action Plan”) contained in the Annex to this Decision including the corresponding Roadmap for implementation, as a substantive contribution to the implementation of the 2030 Agenda for Sustainable Development;

Strongly encourages the Contracting Parties to mainstream SCP in national and local development policies, according to national laws in order to implement the Action Plan at the national and local levels, ensuring enabling conditions, policy coherence and promotion of synergies among national stakeholders and understanding the need to support member countries in the implementation through capacity building and technology transfer;

Requests the Coordinating Unit and the MAP components, to ensure the coordinated delivery of regional actions in support of the countries’ efforts, including through technical assistance, capacity building and transfer of know-how and technology programme, upon request and subject to availability of funds;

Requests UNEP/MAP in cooperation with relevant international and regional organisations, to prepare specific SCP guidelines, taking into account as appropriate existing guidelines, to support and facilitate the implementation of the actions provided for in the Action Plan that fall under the competences and scope of action of the MAP/Barcelona Convention;

Encourages relevant international organizations and in particular UfM, intergovernmental organizations, donor agencies, industry, non-governmental organizations, business organizations and academic institutions to support the implementation of the Regional Action Plan and streamline its priorities in their work;

Encourages the Contracting Parties to also include information on measures taken implementing the Action Plan in the relevant sections of their reporting under the Barcelona Convention and its Protocols;

Requests the Coordinating Unit in coordination with SCP/RAC to undertake in 2020 an indicator-based midterm evaluation of the Action Plan implementation for submission to COP 21.

ANNEX

Regional Action Plan on Sustainable Consumption and Production in the Mediterranean

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1. Background

1.1 Rationale for the regional plan

Since its adoption, the Mediterranean Action Plan – Barcelona Convention (UNEP/MAP) has been pioneer among the UNEP Regional Seas programmes in integrating Sustainable Consumption and Production (SCP) in its regional strategic framework. This forefront position has been confirmed by the assignment of a SCP mandate by the Contracting Parties to one of the Regional Activity Centre, the Regional Activity Centre for Sustainable Consumption and Production, and by the establishment of SCP as a thematic pillar of the Strategic Action Programme of the UNEP/MAP and as an overarching objective and a cross-cutting theme of the Mediterranean Strategy for Sustainable Development (MSSD).

Despite the priority given to SCP in the regional and national policy agendas of the Mediterranean region, varying challenges continue to hinder the shift towards more sustainable patterns of production and consumption. They are linked to: (i) legislation and regulatory frameworks and means of their implementation (e.g. lack of policy coherence with a proper mix of policy instruments and insufficient implementation owing to appropriate means), (ii) business competitiveness and related economic instruments (e.g. lack in technical skills, financial support, investment, and incentives), (iii) eco-innovation for products and services (e.g. insufficient innovation policy to foster both technological and non-technological innovations for more sustainable patterns of consumption and production, and limited innovation partnerships to facilitate the development of innovative solutions and knowledge in SCP-related areas), (iv) lifestyle and education (e.g. contrasting lifestyles and consumption rates: rich countries with greater consumption but more current investment in environmental protection, developing ones with more dependence on natural resources use and less effective environmental policies), as well as (v) civil society empowerment and means for increased awareness (e.g. limited awareness of civil society of the added value of sustainable goods and services in terms of economic, environmental, health and social positive impacts, and their limited ability to influence both government policies and private sector).

In the context of the recent developments in the global and regional processes, particularly after the Rio+20 Summit with the adoption of the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10-YFP) and the negotiations on the Post – 2015 Agenda with the development of the Sustainable Development Goals (SDGs), the moment has come to strengthen UNEP/MAP's role in facilitating the implementation of the Barcelona Convention, its Protocols and MSSD, including through concrete regional and national actions to foster the adoption of more sustainable patterns of consumption and production in key economic sectors, of great relevance to UNEP/MAP's mission.

The SCP Action Plan for the Mediterranean is thus developed as a forward-looking framework, to complement and work in full synergy with existing national and regional policy frameworks in general, and to support the implementation of the Barcelona Convention and its Protocols in particular.

1.2 Mandate to prepare the SCP Action Plan for the Mediterranean

The absence of a common regional action framework identifying SCP priorities and tools has contributed to the dispersion of the different actions undertaken to foster the shift towards SCP in the Mediterranean, with scarce coordination and communication between the different actors. The duplication of efforts, lack of synergies and insufficient dissemination and replication of the results and outputs obtained in the projects developed were some of the shortcomings.

The mandate to develop the SCP Action Plan for the Mediterranean is given by the Contracting Parties to the Barcelona Convention, through the adoption of the Decision IG. 21/10¹, at their 18th Ordinary Meeting (COP 18) in Istanbul, December 2013. Key statements of this Decision read as follows (excerpts):

- **Request** the Secretariat to prepare, with the support of the SCP/RAC and timely and constant involvement of relevant National Focal Points, **a Mediterranean SCP Action Plan including the corresponding Roadmap**, addressing the Region's common priorities for sustainable development, including pollution reduction; and identifying SCP actions and tools to effectively implement the obligations under the Barcelona Convention and its Protocols;
- **Further request** that the Action Plan be designed as a **dynamic and forward-looking framework, integrating the potential of the different policy instruments and measures addressing targeted human activities** which have a particular impact on the marine and coastal environment and related transversal/cross-cutting issues;
- **Urge** the Secretariat to ensure that the Action Plan proposes a set of actions to **work in synergy with and complement existing regional and national policy frameworks** addressing the shift to sustainable patterns of consumption and production and in particular the Mediterranean Strategy for Sustainable Development.

In addition, the Istanbul Declaration, adopted at COP 18, states the need for the Contracting Parties to “strengthen their commitment to accelerate the shift towards sustainable consumption and production patterns by adopting an Action Plan on SCP, which is in line with the commitments adopted at Rio+20 and which aims to reduce the impacts of human activities in the marine and coastal ecosystems”.

1.3 SCP in the Global and Mediterranean Policy Agendas for Sustainable Development

The elaboration of the SCP Action Plan for the Mediterranean was undertaken in a global and regional policy environment, with ongoing and upcoming initiatives and activities for sustainable development, setting the framework in which the Action Plan will be adopted and implemented. These initiatives and activities are taken into account in the design of the Action Plan in order to ensure the alignment with global processes and the streamlining of implementation at the regional and national levels. The most relevant initiatives are briefly described below.

The global policy framework

Sustainable consumption and production has gained a central role in the global processes for sustainable development. In 1992, the World Summit on the Environment and Development stressed the need to reduce and eliminate unsustainable patterns of production and consumption, and in 2012, the World Summit Rio+20 reaffirmed the need to change the unsustainable way societies consume and produce as an overarching objective for sustainable development.

At the Rio+20 Summit, the Heads of State and Government reaffirmed that promoting SCP as an essential requirement for sustainable development and strengthened their commitment to accelerate the shift towards SCP patterns with the adoption of the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP), as stated in paragraph 226 of the Rio+20 Outcome Document “The Future We Want”.

In the framework of the United Nations process on the Post-2015 Development Agenda, a key outcome of the Rio+20 Summit, the 2014 proposal from the United Nations Open Working Group on Sustainable Development Goals (SDGs), submitted for consideration by the United Nations General Assembly at its 69th Session in 2014, recognized the importance of shifting towards sustainable

¹ Full text of the decision available at:

https://www.dropbox.com/s/6tlhr7wlf70qhc6/Decision%20COP%20Istanbul_SCP%20Action%20Plan.pdf?dl=0

patterns of consumption and production by integrating SCP as an underlying principle in SDGs 8 and 9 and particularly by affirming SCP as central priority, as evidenced by the SDG 12 “Ensure Sustainable Consumption and Production patterns”.

The Mediterranean Action Plan – Barcelona Convention

The 22 Contracting Parties to the Barcelona Convention have progressively made SCP a priority in their national and regional policy agendas, integrating SCP within the regular implementation programmes of the Convention and defining biennial SCP programmes of work. The main milestones and integrations are listed in the table below:

Table 1: Milestones for the recognition of SCP by the Contracting Parties to the Barcelona Convention

2005	Approval of the Mediterranean Strategy for Sustainable Development (MSSD) which establishes SCP as a major cross-cutting objective to attain sustainable development
2008	1st Mediterranean Roundtable on SCP held in Barcelona
2009	SCP identified as one of the six thematic priorities of MAP’s Five-Year Programme 2010-2014
2012	Reaffirmation of the commitment of the Barcelona Convention to “ <i>support, at Mediterranean level, capacity building and other activities associated with green economy as means to achieve sustainable development, such as the promotion of sustainable production and consumption patterns</i> ” (COP 17, Paris Declaration)
2013	Decision by the Contracting Parties for the preparation of a specific Mediterranean SCP Action Plan (COP 18)
2014-2015	“Transition towards a green and blue economy, including Sustainable Production and Consumption” is one of the 6 thematic areas of the revised MSSD, and the proposed SCP Action Plan identified as a pillar for the MSSD implementation
2015	Development of the MAP Mid-Term Strategy for 2016-2021 , with SCP as a transversal issue to the three thematic areas.

The above mentioned milestones clearly reflect the world’s forefront position of the Mediterranean region in addressing SCP. Since 2005 many actions have been developed through the main programmes for regional cooperation (e.g. MAP, Horizon 2020, MedPartnership) to raise awareness on SCP and to provide capacity building and technical assistance to the countries of the region.

Moreover, the Contracting Parties to the Barcelona Convention acknowledged that SCP tools and instruments (Decision IG. 21/10) are well anchored in the articles of the LBS Protocol, such as Article 5.4, which provides for the implementation of Best Available Techniques (BAT) and Best Environmental Practices (BEP); relevant for the implementation of Article 5.2 of the Hazardous Wastes Protocol according to which Parties shall take all appropriate measures to reduce to a minimum, and where possible eliminate, the generation of hazardous wastes; and central to the implementation of Article 9 of the ICZM Protocol on the sustainable development of economic activities in the immediate proximity to, or within, the coastal zones.

In parallel, the Contracting Parties have adopted two important and complementary strategic initiatives: the ecosystem approach (EcAp) and the Mediterranean strategy for sustainable development (MSSD). The latter has been reviewed in 2015 to take into account emerging challenges related to the interface environment-development and reflect the priorities identified within the global processes for sustainable development.

With EcAp, the Contracting Parties affirmed their commitment to apply the ecosystem-based approach to the management of the human activities as an integrated approach for a successful implementation of the Barcelona Convention and its Protocols while enhancing sustainable

development in the region, including through enabling a sustainable use of marine goods and services with the view to achieving or maintaining good environmental status of the Mediterranean sea and its coastal region and preventing their deterioration. To do so, the shift to sustainable patterns of consumption and production is essential.

The MSSD has been designed as a framework strategy aiming at adapting international commitments to the regional conditions and guiding national sustainable development strategies. The current version identifies SCP as a major cross-cutting objective to attain sustainable development. After Rio+20 and the recent development in the sustainable development global policy agenda, the Contracting Parties decided during COP18 to review the MSSD, in close relation with the process of developing the SCP Action Plan for the Mediterranean. The two processes are to be interlinked, since the reviewed MSSD has a strong focus on Green Economy and will integrate by request of the Contracting Parties *the strategic orientations of the SCP Action Plan and other relevant policies*, while the SCP Action Plan is to *propose a set of actions to work in synergy with and complement [...] the Mediterranean Strategy for Sustainable Development*. The two processes will thus feed each other.

Last but not least, the countries have agreed to identify SCP, together with ICZM and Climate Change, as main crosscutting approach, to address the main environmental challenges that are to be defined in the new MAP's Mid-Term Strategy for the period 2016-2021.

The strategic and operational objectives as well as the actions contained in this Action Plan will guide the development of the SCP actions and related expected outputs under the new MAP's Mid-Term Strategy covering the period 2016-2021 and on which base the next MAP Programmes of Work for the biennium 2016-2017, 2018-2019 and 2020-2021 will be developed.

The Union for the Mediterranean

Within the May 2014 UfM Ministerial Declaration on Environment and Climate Change, Sustainable Consumption and Production is marked – along with de-pollution and pollution prevention of the Mediterranean Sea and Climate Change - as a priority axis for action. The 43 countries of the Union for the Mediterranean affirmed their commitment to accelerate the shift towards sustainable consumption and production patterns and the transition to a green and low- emissions economy, emphasizing their strong support to the complementary efforts to promote SCP in the Mediterranean region, including through:

- the development of the SCP Action Plan for the Mediterranean in the framework of the Barcelona Convention; and
- the actions of the EU funded SwitchMed programme and the UfM labelled Post Rio+21 -Med RESCP project. Both initiatives are recognised to be an important support to the transition to sustainable consumption and production and to the implementation of the Barcelona Convention and its protocols.

These initiatives and the Action Plan will constitute effective means for the implementation of the UfM-UNEP/MAP Memorandum of Understanding, which has identified the SCP as a central theme for collaborative actions and synergy.

European Union – SCP/SIP Action Plan

The European Commission has been playing a leading role in the field of policy for sustainable patterns of consumption and production, namely through: the 2008 Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan, the Roadmap to a Resource

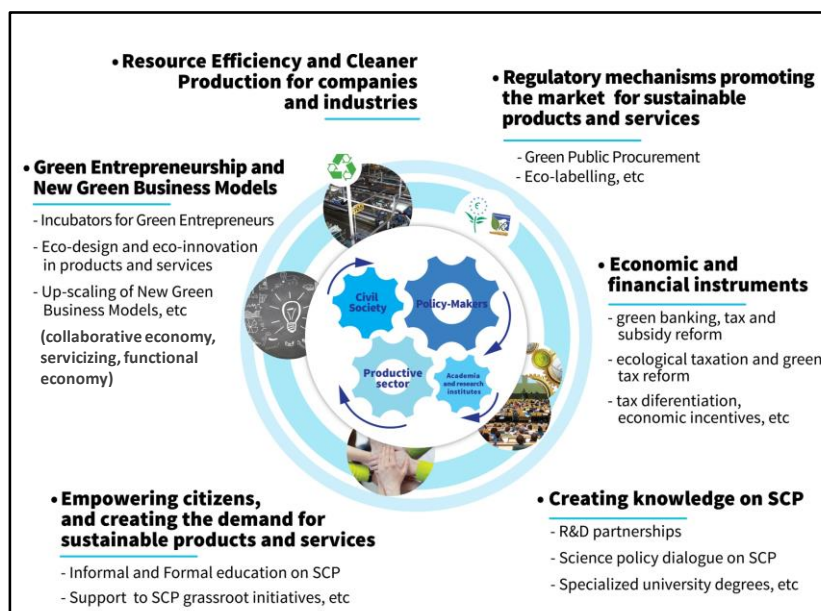
Efficient Europe², the Single Market for Green Products Initiative³ and the Communication on the circular economy⁴. These initiatives include a series of policy actions and proposals on SCP, resource efficiency and circular economy that will contribute to improving the environmental performance of products and organisations and increase the demand for more sustainable goods and production technologies. The SCP Action Plan for the Mediterranean is aligned with the orientations of these initiatives with which it intends to create synergies and work complementarily, whenever it applies.

1.4 SCP Tools

The Mediterranean Region has been facing common environmental problems and challenges, mainly related to the way human activities have developed over the years, and the associated unsustainable patterns of production and consumption. Addressing these challenges requires the transition to a green, non-pollutant and socially inclusive economy through the adoption of sustainable consumption and production patterns, thus decoupling development from environmental degradation and resource depletion.

Sustainable Consumption and Production is achieved through the combined implementation of diverse actions, involving policy makers, businesses, retailers, academia, civil society and consumers in order to redesign the way in which goods and services are produced and consumed and to drive the revitalization of industrial and socio-economic development towards **non-pollutant, no-waste, low-carbon, resource efficient, socially inclusive, green and circular economies**. The main mechanisms and stakeholders involved in this process are summarized in Figure 1.

Figure 1: SCP tools and key stakeholders⁵



2. General Provisions

2.1 Scope and focus of the SCP Action Plan: priority areas of Consumption and Production

²<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0571&from=EN>

³http://eur-lex.europa.eu/resource.html?uri=cellar:aa88c66d-4553-11e4-a0cb-01aa75ed71a1.0022.03/DOC_1&format=PDF

⁴ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013DC0196&from=EN>

⁵ SCP/RAC, 2014

The SCP Action Plan for the Mediterranean is aimed at supporting the implementation of SCP actions at the regional level to support SCP common objectives. It addresses key *human activities which have a particular impact on the marine and coastal environment and related transversal and cross-cutting issues*. It defines common objectives and identifies actions guiding the implementation of the SCP at the national level.

The SCP Action Plan for the Mediterranean aims at achieving as a first step the shift to sustainable patterns in four priority areas of consumption and production, namely Food, fisheries and agriculture; Goods manufacturing; Tourism and Housing and construction, according to:

- i. Their relevance in the main framework of the Barcelona Convention and its Protocols
- ii. Their contribution as mainstream drivers of pollution generation and environmental pressures on the marine and coastal ecosystems;
- iii. Their contribution to the Mediterranean economies and to social well-being,

(i) Relevance of the priority areas for the Barcelona Convention and its Protocols

The *food, fisheries and agriculture* areas are listed as key sector of activity in Annex I of the LBS Protocol (fertilizer production, production and formulation of biocides, agriculture, animal husbandry, food processing, and aquaculture). Similarly, Annex I of the Hazardous Waste Protocol identifies as category of wastes subject to its measures the waste from the production, formulation and use of biocides and phytopharmaceuticals. Finally the Article 9 of ICZM Protocol identified Agriculture, Industry, Fishing and Aquaculture as key economic activities for which planning and management require an appropriate mix of regulatory, technical, economic, and market oriented measures.

The *goods manufacturing* consumption and production area embraces a number of sectors of activity listed in Annex I of the LBS Protocol, such as the paper and paper-pulp industry, the tanning industry, the metal industry, the textile industry, the electronic industry, organic chemical industry, inorganic chemical industry, mining, transport and the recycling industry. Furthermore several of the hazardous waste categories related to the production and consumption of goods are listed in Annex I of the Hazardous Waste Protocol which calls, among others, for appropriate measures to reduce to a minimum, and where possible eliminate, the generation of hazardous wastes.

Tourism is of utmost importance for the ICZM Protocol as most of the tourism activities are taking place in coastal areas. Article 9 identifies tourism, sporting and recreational activities as key economic activity in the framework of the Protocol. Annex I of the LBS Protocol also lists tourism and shipbuilding and repairing industry as sectors of activity to be primarily considered. Furthermore, sustainable tourism is of special relevance for achieving the sustainable use of coastal and marine areas of interest for the SPA/BD Protocol.

Finally, *housing and construction* activities are also targeted in Annex I of the LBS Protocol with focus on cement production, metal industry, mining, waste management industry, treatment and disposal of domestic wastewater, and transport. In addition, Annex IV of the LBS protocol defines Best Environmental Practices (including energy efficiency measures) that should be applied to the existing buildings as more than 80% of the energy consumption and greenhouse gas emissions of that sector are related to the use phase (heating, lighting and appliances). Likewise, this priority area is of utmost importance for ICZM Protocol as one of its objectives, under Article 5, is to facilitate, through the rational planning of activities, the sustainable development of coastal zones by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development. Finally the deconstruction of building entails the generation of hazardous waste to be carefully managed in the framework of the Hazardous Waste Protocol.

(ii) Impacts of the priority areas on coastal and marine environment

The four consumption and production priority areas are main upstream drivers of pollution generation and environmental pressures on the ecosystems in the Mediterranean.

Food, fisheries and agriculture - Current agriculture practices affect heavily natural resources, especially water and land resources, and exert great pressure on the local biodiversity. For instance, the nutrient load from intensive agriculture and/or large consumption of chemicals are linked to nutrient over-enrichment of the sea and the introduction of heavy metals, oils and POPs into the marine and coastal environment. The food processing industry is also characterized by high levels of freshwater and energy consumption, the production of wastewater with excessive organic load and contaminants and the generation of by-products and residues that end up polluting the coasts and the sea. Moreover, food distribution related to consumption habits impacts negatively on climate change, as globalised transport of food generates green-house gas emissions. As regards to fisheries, current consumption and production patterns have in many cases increased the pressure on fish stock, altering fish populations and destroying sensitive habitats while aquaculture still faces a number of important environmental challenges (degradation of the sea-floor, release of metabolic waste, chemical pollution, eutrophication etc.).

Goods manufacturing - The manufacturing of goods in a context of strong industrial growth is directly linked to the release of polluting substances in the air, soil and water, contributing to the chemical contamination and eutrophication of the Mediterranean Sea and coasts. It involves processes that are resource intensive (water, energy and raw materials) and are highly pollutant. Consumption habits and the treatment of goods in their end of life are the major source of marine litter with plastic amounting up to 83% of marine litter floating on the sea and deposited on shorelines. Yet, current consumption and production patterns tend to increase the rate in which people consume products which have shorter lifespan. Moreover, the globalized production and consumption of goods make the transportation operations very impacting, in terms of resource and energy consumption, as well as green-house gas emissions.

Tourism - The diversity and fragility of the coastal and marine ecosystems suffer greatly from tourism-related impacts. Coastal tourism induces a rise in the coastal population, which increases demand for resources such as water, food, energy and construction material, and also worsens waste and wastewater generation. It also contributes to coastal land consumption and coastal landscape degradation (destruction of natural soil; deterioration of sensitive habitats - sand, dunes and wetlands -, and loss of fragile natural habitats). Tourists' activities and behaviours (e.g. yachting, diving, recreational fishing) may also cause damage to habitats and species while the transport of passengers contributes to greenhouse gas emissions.

Housing and construction - The urbanisation rate in the Mediterranean coastal areas is expected to grow to 72% by 2025⁶, increasing significantly the pressure in the environment. The extraction of raw material and production of construction material (cement, bricks, etc.) are directly associated with the deterioration of the natural landscape, with atmospheric emissions (dust, NO_x, SO₂, CO₂, COV, etc.), as well as noise and vibrations. They involve considerable energy and water consumption and are responsible for huge wastewater and solid waste production. The growth in the coastal population increases demand for domestic water, food, energy and construction material, leading to further challenges in terms of atmospheric pollution and treatment and disposal of solid waste and effluent. Housing and construction is seen as the consumption and production area with high potential for delivering significant and cost-effective GHG emission reductions (UNEP/SBCI, 2009).

(iii) Contribution of the priority areas to the Mediterranean economies and to social well-being

The four consumption and production priority areas are major socio-economic contributors in the Mediterranean region, namely in terms of employment and wealth generation. For instance, with regard to employment opportunities, Agriculture is one of the largest sources of jobs, and tourism is contributing an overall 13% of total employment in the Mediterranean economies. Regarding

⁶Plan Bleu, 2009

Mediterranean economies, while the manufacturing sector accounts for 20 to 33% GDP, the construction, renovation and maintenance of buildings sector contributes 10 to 40% global GDP.

The promotion of SCP patterns within the different consumption and production priority areas entails a number of benefits for the populations of the region, improving social well-being and quality of life in terms of health, employment, respect to local culture and traditions, valorisation of traditional practices, new jobs creation, etc. The transition of food systems towards more sustainable models such as the Mediterranean Diet offers a range of new economic and employment opportunities while it contributing to food and nutrition security and healthier lifestyles. Making tourism businesses more sustainable benefits local communities and can create stronger linkages with the local economy, increasing local development potential. Investments related to the integration of SCP patterns in production are shaped by key principles of social justice, social protection and decent job creation.

2.2 The Transversal Issues

With the ‘life cycle thinking’ at its core, the SCP approach entails taking into account the environmental and social impacts a product or a service causes at each stage of its life cycle.

The above section shows how each selected consumption and production priority area has impacts on the environmental degradation. Some of these impacts can be seen as sustainability issues to address (e.g. energy efficiency, water management, waste reduction) or as important human activities to develop (e.g. water, waste and energy sectors). In this Action Plan, proposed actions under each priority area are designed in order to address these environmental degradation challenges, which are transversal in nature and scale, to all the above mentioned priority areas. The transversal issues are:

- Land use;
- Water efficiency;
- Resource efficiency;
- Energy efficiency; and
- Pollution (generated by waste water, chemicals, solid waste, etc.).
- Transportation & Mobility and
- Consumer Behaviour.

For instance, “transportation and mobility” is centrally connected with *agricultural* production, produce transportation, and logistics for the provision of the food industry and outlets, and equally central to *goods manufacturing operations*, to *tourism* activities, as well as to the *housing and construction* sector operations. Accordingly actions to integrate SCP in the consumption and production priority areas of this Action Plan are to have a direct impact in the sound management of the mentioned transversal issues.

3. Vision, Objectives and Actions

The SCP Action Plan is based on a **common vision** that translates into **strategic objectives** and it identifies **operational objectives** and **specific actions** for each of the four consumption and production priority areas. In addition **cross-cutting actions** relevant to all **four consumption and production priority areas** are identified.

3.1 Vision

Shared vision for the SCP Action Plan for the Mediterranean

The SCP Action Plan for the Mediterranean is built around the following vision:

“By 2027 a prosperous Mediterranean region is established, with non-pollutant, circular, socially inclusive economies based on sustainable consumption and production patterns, preserving natural resources and energy, ensuring the well-being of societies and contributing to clean environment and healthy ecosystems that provide goods and services for present and future generations.”

3.2 Strategic objectives

The above vision translates into the following strategic objectives:

- **Strategic objective 1:** Establish a regional SCP framework to ensure coherence, coordination and implementation of SCP activities at the regional and national levels, and thus translate the global commitments on SCP to the Mediterranean Region.
- **Strategic objective 2:** Develop and implement SCP Operational Objectives in the Mediterranean in order to promote and strengthen circular and green economy and support the Barcelona Convention, its Protocols and Regional Plans, the Mediterranean Strategy for Sustainable Development (MSSD), and other regional policy frameworks for sustainable development.
- **Strategic objective 3:** Engage key stakeholders (international organisations, national and local public authorities, business sector, consumers, civil society, universities and research institutions) in Sustainable Consumption and Production models and circular economy measures leading to high resource efficiency and preservation, reduced pollution, and decoupling the development process from environmental degradation and promoting sustainable lifestyles.

3.3 Operational objectives and actions by consumption and production priority area

3.3.1 Food, Fisheries and Agriculture (FFA)

Operational Objective 1.1: Promoting Innovation and Knowledge in the implementation of Best Environmental Practices and Technologies in the growing, harvesting, processing and consumption phases, allowing efficient management of resources, minimizing environmental impacts of the FFA sector in all its life cycle.

Suggested actions to reach operational objective 1.1:

- 1) Adopt Good Agricultural Practices (GAP) schemes for optimizing the use of different resources needed (water, land, energy, fertilisers, pesticides and Plant Protection Products) in agricultural areas and in line with the EcAp ecological objectives and ICZM guidelines.
- 2) Adopt “Sustainable Fishing Practices”, including in the Industrial/semi-Industrial Fisheries sector and reduce the conflict between coastal resources users; such as over-regulated small-scale fisheries versus non-regulated recreational fisheries and in line with the EcAp ecological objectives and ICZM guidelines. Inform consumers regarding “Sustainable Fishing Practices” and associated sustainable purchases.

- 3) Adopt new and innovative technologies based on the Life Cycle Approach, including control of flows of material, extended producer responsibility and eco-design in the food and fisheries processing and packaging.
- 4) Prevent and minimize resource waste and food wastage in all the life cycle of the food; promote the production and use of energy and compost from food waste coming from the selectively collected fraction of the municipal waste and agricultural organic waste.

Operational Objective 1.2: Develop the policy and legal framework to promote sustainable agriculture, fisheries and food production and consumption, with special focus on the “Mediterranean Diet”⁷, engaging local communities and small-medium scale producers, distributors & retailers of sustainable Food, Fisheries and Agriculture products.

Suggested actions to reach operational objective 1.2:

- 5) Adopt rural development policies including the development of sustainable value chains with high market potential to maximize employment and income generation, address rural migration and respond to Food Security challenges (e.g. National Organic Strategy, Sustainable Farming Strategy).
- 6) Promote “Green Financing” for the food, agriculture and fisheries consumption and production areas by facilitating access to loans and grants for farmers and fishermen to start sustainable agriculture and fishing activities, introducing fiscal instruments favouring sustainable agriculture and fisheries practices, like elimination or reduction of deemed “harmful” subsidies on water and energy consumption, and providing incentives for good environmental practices like Integrated Pest Management (IPM) and organic farming”
- 7) Establish quality control, traceability, standards harmonization and certification schemes that confirm the sustainable production of food and fisheries products.
- 8) Promote Sustainable Public Procurement (SPP) schemes for food and fisheries products and promoting the “Mediterranean Diet” as a basis for sustainable and healthy consumption patterns.

Operational Objective 1.3: Sensitize and educate food producers, retailers and consumers, and support the development of appropriate market tools and information, to promote sustainability throughout the value chains of agriculture and fisheries management, as well as food processing and food distribution.

Suggested actions to reach operational objective 1.3:

- 9) Support the development of regional value chains integrating SCP principles in the Food, Fisheries and Agriculture priority area, and with high market potential, ensuring the transition towards a more sustainable production while maximizing the employment and income generation gains for local producers
- 10) Promote the labelling and branding of the sustainable locally produced food (including organic food and zero-kilometre products) and fair trade products and provide needed support for market access of the “Mediterranean Diet”

⁷ See definition in Annex 2

- 11) Improve the knowledge base and build a shared Mediterranean Knowledge System on the “Mediterranean Diet” for concerned research organizations, producers, certification bodies and governments and increase visibility and impact
- 12) Implement information and education campaigns to promote the concept of the “Mediterranean Diet” and ensure public engagement in production and consumption of sustainable food and local agriculture and fisheries products, along with reduction of food waste. Increase consumer awareness regarding best practices to prevent food wastage (quantity, storage, expiry dates, etc.)

3.3.2 Goods Manufacturing

Operational Objective 2.1: Promote sustainability-driven innovation⁸ and knowledge and the integration of Best Available Techniques (BATs) and Best Environmental Practices (BEPs) through the entire value chain of goods production, including the upstream and downstream flows of resources and waste, paying particular attention to the life-cycle of manufactured goods. Suggested actions to achieve operational objective 2.1:

- 13) Promote innovation and use BATs and BEPs including (but not limited to) environmental performance; human protection (toxic free products and manufacturing processes), resource efficiency, renewable energy, in the manufacturing of goods and the provision of alternative services
- 14) Promote innovation and use BATs and BEPs to implement the waste management hierarchy⁹ and encourage closed loop material cycles. This should consider toxics elimination, product durability, reparability and dematerialization and should include the encouragement of green sector value chains by the establishment of industrial recycling and remanufacturing networks connecting companies generating wastes with those recycling it.
- 15) Promote, use and develop tools such as eco-design, Life Cycle Management, risk assessment of chemicals, substitution of hazardous chemicals, and Cradle to Cradle to facilitate the sustainable design and production of manufactured goods. This should include the formulation and promotion of a related research and development agenda and the compilation of best practice cases¹⁰.
- 16) Create green businesses and jobs in sustainable goods manufacturing and recycling/refurbishment and alternative services such as switching from a product ownership to a Service Systems and lease based economy ("servicizing"), social businesses and other innovative business approaches.

Operational Objective 2.2: Develop integrated policy making and the legal framework to promote sustainable consumption, production and recovery in the goods manufacturing sector with the aim to move towards a circular economy.

Suggested actions to achieve operational objective 2.2:

- 17) Develop an institutional framework to encourage integrated national and local decision making through the involvement, collaboration and coordination of relevant stakeholders including governmental bodies, industries and civil society for improved integrated policy making (national and local) using life cycle thinking and forward looking decision making for

⁸ See definition in Annex 2

⁹ To minimise, reuse/repair/refurbishment, recycle, recover and dispose considering LCA.

¹⁰ Best practice cases should consider eco-innovations and sustainable local approaches.

the sustainable production, consumption and recovery of manufactured goods including an enforcement and assessment system.

- 18) Create at regional level an effective policy and regulatory framework for the reuse, repair, recycling and recovery of manufactured goods (waste management¹¹ hierarchy) based on life cycle techniques and the promotion of extended producer responsibility. This should include the set-up of a frame for decent jobs in repair, refurbishment, recycling and waste management considering the role of the formal and informal sectors along with their respective needs for training, health and safety and livelihood.
- 19) Promote full cost accounting¹² and market base instruments (MBI) which favour sustainable goods and alternative services taking account of renewable energy use; eco-innovation; and support of green entrepreneurs and green jobs. This would also include financial and tax based mechanisms to encourage relative sustainable goods production¹³ and practices, and discourage unsustainable goods consumption¹⁴.
- 20) Promote and adopt Sustainable Public Procurement (SPP) schemes for manufactured goods based on agreed standards.
- 21) Support existing institutions or create new ones that can help enterprises to implement Environmental Management Systems (EMS) and Ecolabels, facilitate hazardous chemicals substitution, sustainability reports, and support the creation of the necessary accreditation and certification bodies.

Operational Objective 2.3: Educate and raise awareness of consumers and other stakeholders and support the development of market structures, increasing the visibility and market share of sustainably manufactured, used and disposed-of goods and alternative services.

Suggested actions to achieve operational objective 2.3:

- 22) Establish and promote certification schemes (eco-labels) for manufactured goods and alternative services in the country; promote related activities like voluntary agreements between retailers and public authorities to promote sustainable products.
- 23) Educate and inform stakeholders (consumers, policy and decision makers, producers, retailers, academia) about sustainable production and consumption of manufactured goods and alternative services including information relating to Ecolabels, local/regional products, waste hierarchy, ecological footprint accounting, Life Cycle Assessment, external cost, corporate sustainability reporting and other approaches.
- 24) Demonstrate and publicize the economic, environmental and social benefits of sustainably manufactured goods and alternative services using appropriate media outlets. Particular emphasis should be given to promoting the economic and business case for individual categories of manufactured goods (or alternative service provision), emphasizing the benefits to consumers, the private sector and the environment.
- 25) Improve education on sustainable production and consumption of manufactured goods and alternative services by reviewing and updating primary, secondary and tertiary educational curricula in relation to issues such as engineering processes, design, marketing, advertising,

¹¹ Considering the Barcelona Convention and the protocols particularly related to Land Based Sources and Sea Dumping

¹² to take account of and, so far as possible, to internalize external environmental costs.

¹³ E.g. recycled goods; repairable products, long warranty.

¹⁴ E.g. including hazardous chemicals (e.g. REACH SVHC or CMR substances) or disposable goods.

economy (including business schools), chemistry, health, education, social and environmental impacts of products and services.

3.3.3 Tourism

Operational Objective 3.1: Develop and promote practices and solutions to ensure efficient use of natural resources and reduce environmental impacts of tourism, respecting spatial, ecological, and socio-cultural carrying capacities of the destination.

Suggested actions to achieve operational objective 3.1:

- 26) Promote the sharing of relevant knowledge on SCP applied to tourism (e.g. best environmental practice (BEP) and best available techniques (BAT)) to optimise the eco-efficiency of tourism activities and the use of environmental management systems (e.g. ISO 14001);
- 27) Develop a destination management model to promote sustainable tourism and create a network of sustainable destinations;
- 28) Promote local sustainable tourism training to enhance local capacities and upgrade the existing ones;
- 29) Promote the diversification of the tourism offer from mass tourism to alternative forms of tourism (e.g. ecotourism, cultural tourism, rural tourism, off-season tourism) to reduce the impacts of seasonality and to reduce environmental pressures on coastal areas.

Operational Objective 3.2: Promote regulatory, legislative and financial measures to mainstream SCP in the tourism consumption and production area, to reduce tourism seasonality creating green and decent jobs and to promote local community engagement and empowerment.

Suggested actions to achieve operational objective 3.2:

- 30) Revise current tourism legislation at the national level to facilitate the integration of SCP principles and measures in the tourism sector;
- 31) Create eco-taxes, eco-charges or fees as an effective instrument to internalize externalities (e.g. tax relief of tourism activities during the low season) creating a fund exclusively earmarked for the improvement of the environmental quality of the destination and for the creation of green jobs;
- 32) Promote the Tourism Carrying Capacity Assessment (TCCA) approach as a mandatory analysis for the preparation of national and local tourism planning and for the approval of new tourism investment;
- 33) Develop policies and actions to minimize the physical impact of tourist activity.

Operational Objective 3.3: Raise awareness, capacities and technical skills to support sustainable destinations and green tourism services, and promote the development of appropriate marketing and communication tools to ensure a competitive sustainable Mediterranean Tourism.

Suggested actions to achieve operational objective 3.3:

- 34) Promote tourism eco-labels with robust environmental criteria based on a standards scheme verified by an independent organization (e.g. EU Ecolabel, Green Key, Nordic Swan, etc.);

- 35) Develop and implement capacity building activities for tourism private operators to improve capacities and awareness on the importance of adopting sustainable consumption and production strategies;
- 36) Encourage marketing and communication activities focused on promoting the Mediterranean sustainable destinations and enhancing the visibility of Mediterranean sustainable tourism service providers in the international and national markets (e.g. flagship events; participation to international fairs, exhibitions and major public events; agreements with online tour operators and other intermediaries; web-marketing and thematic publishing).

3.3.4 Housing and Construction

Operational Objective 4.1: Promote innovation and knowledge and the integration of Best Available Techniques (BATs) and Best Environmental Practices (BEPs) that enhance resource efficiency throughout the entire planning and construction process and life cycle of a building.

Suggested actions to achieve operational objective 4.1:

- 37) Promote knowledge and innovative approaches that support the adoption of a holistic and integrated approach (integrating social, environmental, and economic dimensions) in city planning, urban renewal and housing design and construction, as well as in the surrounding built environment, and the implementation of sustainable urban development policies in cities that drive economic activities and revitalize the economy by opening new opportunities for economic activities and businesses, investments, and employment;
- 38) Promote innovation and knowledge through the integration of Best Available Techniques (BATs) and Best Environmental Practices (BEPs) that promote eco-design and the planning and construction of sustainable and affordable housing and high quality of urban environment that caters for the needs of the all social income groups, particularly medium and low income families, and introduce sustainable solutions for slums and downgraded neighbourhoods;
- 39) Develop, in collaboration with planning, engineering and construction professional bodies, building and urban development codes for the provision of mix uses, compact urban development, space for pedestrians and cyclers, green roofs, as well as public space and green areas in residential areas for communal use, as means to promote social integration and cohesion, while at the same contributing to a clean, healthy, and productive environment;
- 40) Promote innovative planning and construction models leading to smart cities that secure sustainable housing easily accessible from and to work place, commercial, social, recreation and cultural services in order to reduce commuting, congestion, emissions, and air and noise pollution, as well as to reduce and separate waste from households and public administration buildings, retail buildings in order to develop model for PP buildings.

Operational objective 4.2: Develop and strengthen the regulatory and legal framework to enhance the contribution of the housing and construction sector to sustainable economic development, social integration and cohesion, and environmental integrity.

Suggested actions to achieve operational objective 4.2:

- 41) Develop and encourage regulatory and incentive policies and measures that support:
 - Sustainable coastal urban development and green construction throughout the entire planning and construction process and the life cycle of buildings, for the achievement of a more efficient use of natural resources and energy, and the protection of coastal and marine ecosystems;

- Sustainable practices in housing and construction through the use of local building materials, traditional knowledge, environmental friendly technologies and materials, sustainable and conscious purchasing practices, and sustainable waste management practices such as the recycling, recovery and reuse of construction-related waste, including demolition waste; and
 - Proper maintenance and operational efficiency of the existing housing stock;
 - Develop specific tools/guidelines for assessment of buildings prior to demolition and renovation with a view to optimal use of Construction and Demolition Waste.
- 42) Promote sustainable public procurement (SPP) in the public housing and construction sector, including subcontracting and services;
- 43) Introduce efficient monitoring, enforcement and assessment systems that ensure compliance with and adherence to sustainability principles in physical and urban planning and development (notably through implementing Sustainable Energy Action Plans); green and sustainable building regulations; codes of practice and standards; and the contribution of housing and construction to resource and energy efficiency, SCP, economic development, job creation, improved environment and human welfare.

Operational Objective 4.3: Sensitize and raise awareness of all stakeholders involved in urban planning, housing and construction, including consumers, professionals of the sectors and institutions and develop capacities for mainstreaming sustainable urban development.

Suggested actions to achieve operational objective 4.3:

- 44) Provide an institutional set up that ensures public participation, involvement of relevant stakeholders (including the private sector and civil society), transparency, accountability, collaboration and coordination between various government entities and between the public and private sector - through Public-Private-Partnership (PPP) -, exchange of information on BATs and BEPs on sustainable physical and urban development, and green housing design and construction;
- 45) Prepare communication packages specifically targeting relevant stakeholders, including policy- and decision- makers, the general public, academia, Civil Society Organisations, businesses, builders and contractors, clearly identifying the benefits of adopting SCP patterns in green and sustainable housing design, construction, energy efficiency and sustainable urban planning;
- 46) Build capacities, educate and sensitize professionals, consumers, policy makers, and the public on concepts and tools that support the transition towards sustainable housing and construction, such as integrated assessment, life cycle assessment, green economy, and circular economy.

3.3.5 Actions applicable to all priority areas

Beyond the **operational objectives** and **specific actions** of each of the four consumption and production priority areas, several actions apply to all priority areas:

- 47) Enable the policy and regulatory conditions for mainstreaming SCP in national development policies
- 48) Establish financial mechanisms facilitating the implementation of SCP solutions

- 49) Ensure the exchange of knowledge and information on SCP and the upscaling of successful SCP solutions
- 50) Create and develop new business models integrating SCP approach as business strategy
- 51) Promote the generation and upscaling of civil society led initiatives promoting SCP

4. Implementation and Monitoring mechanisms

4.1 Major stakeholders for the implementation of the Action Plan

The implementation of the Action Plan requires a concerted effort among various stakeholders at the national and regional levels. UNEP/MAP, under the overall leadership of the Coordinating Unit, the technical direction by SCP/RAC and the collaboration of all MAP components, will ensure coordination for the delivery of regional actions in support of the countries' effort, including through technical assistance and capacity building (roadmap for implementation). In this regard, SCP/RAC will play a central role in coordinating the delivery of the Action Plan's regional activities.

The Contracting Parties will be responsible for effecting the proposed actions at the national and local levels, including through the set-up of enabling conditions to achieve the operational objectives of the Action Plan, along with policy coherence and promotion of synergies among national stakeholders, to avoid overlap with other SCP and green economy initiatives.

Moreover, the implementation of the Action Plan will be full and effective thanks to the active involvement of relevant national and international SCP stakeholders, which will have a central role in putting in place national SCP measures and instruments, as well as implementing them in the productive, service and consumption areas. These key stakeholders are:

- a) Policy-makers from all relevant ministries (planning, environment, industry, trade, economy, education, labour, social affairs), who set the regulatory institutional framework that incentivises the shift to SCP;
- b) National, regional and local administrations, in charge of insuring the implementation of the strategies and making the necessary adaptations;
- c) Private sector, including local small, medium and big enterprises, multinationals, entrepreneurs, manufacturers, producers, retailers and sellers, for they are responsible of the production processes and bringing to market products and services, and hence are in a unique position to advance SCP in the region;
- d) Civil Society, including unions, NGOs, citizens-led initiatives, social economy associations, consumers groups for their key role in mainstreaming sustainable consumption habits and ensuring the different stakeholders meet their commitments;
- e) Schools, Academia and Research Institutions who have a major role in educating on SCP at all levels and in driving innovation in sustainable processes, products and services;
- f) Financial institutions who give the financial means that make possible the shift to SCP;
- g) Regional and international Organizations for their role in committing and bringing support to the different stakeholders, through the exchange of information and knowledge and building the capacities of all the above mentioned stakeholders, enabling them to play their role in the shift to SCP.

4.2 Budget and resources

Substantial funding partnership, beyond that of the UNEP/MAP, is needed for the implementation of the Action Plan, regionally and nationally. The nature and scope of the proposed actions require mobilization of other financial resources than those from the traditional donors.

Effort will therefore be required at the regional and national levels to attract external funding from established sources/donors such as GEF, World Bank and EU, through regional organisation facilitating contacts with potential donors and fundraising (i.e. UfM Secretariat), as well as from other stakeholders having common agenda and shared interest in shifting towards more sustainable patterns of consumption and production, namely: business organizations, international and local financial institutions. Particular attention should be given to this Action Plan in the MAP resource mobilisation strategy that will seek for funding sources required, identification of potential donor organisations, partners and country contributions. In particular, the strategy should identify those complementary aspects of the Roadmap that can be “bundled” into packages more attractive to funding sources.

The roadmap for implementation, annex 1, provides estimates for the regional activities to be undertaken under each operational objective of the Action Plan. For each proposed action of the Action Plan, the Roadmap suggests regional activities along with their corresponding estimated cost, progress indicators, related flagship initiatives and key partners.

4.3 Support to implementation

UNEP/MAP in cooperation with relevant international and regional organisations shall prepare specific guidelines, taking into account appropriate existing guidelines, to support and facilitate the implementation of the actions proposed in the Action Plan that fall under the competences and scope of action of the Barcelona Convention. Likewise technical assistance, transfer of knowhow and technology shall be provided, including capacity building, by the Secretariat to the Contracting Parties in need of assistance.

A special attention will be also put in insuring the alignment between the regional activities included in the Roadmap and the SCP national planning processes (e.g. Sustainable Development Strategies, National Green Economy Strategies, SCP National Action Plans).

The strategic partnership EU-UNEP/MAP-UfM is crucial for the success in the implementation of the SCP Action Plan. In this context, the following EU funded initiatives in the Mediterranean region offer the appropriate collaborative mechanisms and platforms for a coordinated and synergetic execution of the regional actions proposed in the Action Plan’s roadmap:

- The complementary SCP initiatives SWITCH-Med Programme and Med RESCP Project; and
- The upcoming second phase of the Horizon 2020 initiative to de-pollute the Mediterranean, for the development of which the SCP Action Plan for the Mediterranean will constitute a strategic action-oriented document as SCP actions are essential for the prevention and for addressing the drivers of the industrial emissions

Furthermore, special attention should be drawn to the Mediterranean Strategy on Education for Sustainable Development (MSESD), which has been endorsed by the 43 Ministers of Environment of the UfM including the EU and the Mediterranean non-EU countries, on 13 May 2014. Activities related to education for SCP will feed both the implementation of the MSESD and the SCP Action Plan.

4.4 Reporting

Recalling the Decision IG.21/7 approved by the Contracting Parties in their COP of Istanbul in which they acknowledged that the implementation of SCP tools are necessary for the implementation of Article 5.4 of the LBS, Article 9 of the ICZM Protocol and Article 5.2 of the Hazardous Waste Protocol, countries shall report on a biennial basis on the measures adopted to support the above actions, following the reporting obligations referred to by Article 26 of the Barcelona Convention, Article 13.2(d) of the LBS Protocol and Article 31 ICZM Protocol.

The reporting on the Action Plan implementation will build on the existing MAP reporting system under the Barcelona Convention and its protocols. To this effect a specific section on SCP measures will be integrated in the MAP reporting system.

4.5 Timeframe and evaluation

The timeframe for this Action Plan is the 1st January 2016 to the 31st December 2027. Accordingly the Action Plan will be subject to a mid-term evaluation and a review, coinciding with the end of the corresponding MAP 6-year Mid Term Strategies for the periods 2016-2021 and 2022-2027, respectively. Likewise, the activities of the Action Plan's Roadmap for implementation will be reviewed and adjusted every two years in full integration and synergy with the MAP biennial Programme of Work. Furthermore, the evaluation criteria will consider whether synergies have been created with other relevant initiatives and regional frameworks addressing the shift towards sustainable patterns of consumption and production. Also, new emergent consumption and production areas will also be identified and assessed periodically in order to propose when needed their integration as Priority Areas in the action plan.

The evaluation will be done on the basis of the accomplishment of the strategic and operational objectives of the Action Plan, using appropriated indicators measuring progress on SCP mainstreaming and streamlining at the regional level. To this end, the definition of a set of regional indicators will be required and will build on existing SCP indicators frameworks (UNEP, OECD, EEA, etc.). In this regards, and as suggested during the Extraordinary Meeting of the SCP/RAC Focal Points (November 2014, Barcelona), a Technical Working Group on SCP Indicators for the Regional Action Plan will be put in place by the Contracting Parties. Its specific mandate will be subject of a proposal to be submitted for consideration and approval by the Contracting Parties; it should include the establishment of a baseline against which progress will be measured.

4.6 Communicating and advocating SCP: public awareness, visibility and stakeholders' involvement

A communication plan will be established on a 2-year basis and will detail the activities planned to communicate and disseminate the SCP Action Plan in order to reach and engage relevant stakeholders and their respective communication channels and platforms. Synergies with existing initiatives will be carefully considered.

UNEP/MAP and SCP/RAC will take the lead in designing and delivering the communication plan, in close collaboration of the SCP/RAC National Focal Points. To this end, the Mediterranean HUB for knowledge exchange and networking on SCP and the SCP Social Action Network coordinated by SCP/RAC will be a strong mechanism to target policy-makers, start-ups and entrepreneurs, civil society organizations, industry service providers, big companies and impact investors. In addition, other actions will be undertaken to ensure the highest engagement of relevant SCP stakeholders.

Raising awareness among some key SCP Stakeholders, such as the private sector, the Parliamentarians, the development agencies and the financial institutions, needs a specific approach for a targeted communication of SCP. Influencing them and ensuring their effective engagement for mainstreaming SCP in their decision-making require the involvement of committed key opinion

leaders, experts in SCP, who can effectively communicate SCP and its benefits, promote engagement and nourish productive partnerships.

Accordingly setting a sort of enabling mechanisms through the establishment of an informal task force of implementation facilitators with experience and network in SCP areas and concerned stakeholders is crucial for the application of the Action Plan and the implementation of its Roadmap. Those implementation facilitators shall be tasked with the mission of reaching, lobbying and engaging key stakeholders from governments, businesses, financial agents, civil society and academia to participate actively and support the implementation of the actions and activities identified in the Action Plan and Roadmap. The “SCP task force” shall also ensure the coherence and alignment between the activities developed under the roadmap at the regional level and SCP national processes. The “SCP task force” will also provide SCP/RAC with the necessary support to properly take on the technical direction of the SCP AP implementation. The mandate and mission of these facilitators will be subject of a proposal to be submitted to the attention of the Contracting Parties for their consideration and approval.

Appendix 1
Roadmap for Implementation

The following roadmap has been designed to provide concrete support and guidance for the implementation of the actions suggested under chapter 3.3. The roadmap has set the year of 2021 as target, corresponding with the 6-year Mid Term Strategies of the MAP for the period of 2016-2021. After this period, a new version of roadmap will be elaborated for the following period of 2022-2027. For each action, a series of regional activities are suggested, associated with estimated cost and corresponding progress indicators with baseline and target. The roadmap will serve as a framework for creating a broad partnership for the promotion and implementation of SCP in the Mediterranean region and aims to be implemented by all SCP key actors and partners of the region. In this respect, the roadmap also proposes related flagship initiatives and key partners as an indication for what role the key actors and partners are to play. When implementing the suggested regional actions, a special attention will be given to align them with the efforts for the implementation of SCP/green economy national policies.

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
FOOD, FISHERIES AND AGRICULTURE						
Operational Objective 1.1: Promoting Innovation and Knowledge in the implementation of Best Environmental Practices and Technologies in the growing, harvesting, processing and consumption phases, allowing efficient management of resources, minimizing environmental impacts of the FFA sector in all its life cycle.						
1	Adopt Good Agricultural Practices (GAP) schemes for optimizing the use of different resources needed (water, land, energy, fertilisers, pesticides and Plant Protection Products) in agricultural areas; and in line with the EcAp ecological objectives and ICZM guidelines.	<p>Establish a working group of the main institutions and NGOs in the Mediterranean region active in the field of sustainable agricultural practices to promote GAP schemes, including the elimination of hazardous material and POPs.</p> <p>Integrate and implement SCP concepts related to sustainable agricultural practices taking into account innovative use of water and biomass resources in key on-going programmes and initiatives.</p>	100	<p>Number of key regional institutions that have developed programmes specifically oriented to promote and implement GAP schemes: T:10</p> <p>Number of countries that have implemented new GAP schemes through these programmes. T:10</p>	<p>IFAD's Adaptation for Smallholder Agriculture Programme</p> <p>WWF's Sustainable Agriculture Programme</p> <p>EU Horizon 2020</p>	<p>IFAD</p> <p>FAO</p> <p>WWF</p> <p>EU</p>
2	Adopt "Sustainable Fishing Practices", including in the Industrial/semi-Industrial Fisheries sector and reduce the conflict between coastal resources users; such as over-regulated small-scale fisheries versus non-regulated recreational fisheries and in line with the EcAp ecological objectives and ICZM guidelines.	<p>Establish a working group of main institutions and NGOs in the Mediterranean region active in the field of sustainable fishing practices.</p> <p>Integrate SCP concepts related to sustainable fishing practices in key on-going programmes and initiatives.</p>	100	<p>Number of key regional institutions that have developed programmes specifically oriented to promote and implement GAP schemes: T:10</p> <p>Number of countries that have implemented new GAP schemes through the programmes. T:10</p>	<p>EU's ECOSAFIMED project</p>	<p>FAO</p> <p>WWF</p> <p>Marine Stewardship Council</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
3	Adopt new and innovative technologies based on the Life Cycle Approach, including control of flows of material, extended producer responsibility and eco-design in the food and fisheries processing and packaging.	Implement pilot projects to demonstrate innovative technologies based on the Life Cycle Approach in food and fisheries processing and packaging. Upscale pilot projects' findings at regional level through appropriate tools.	500	Number of pilot projects implemented that adopt innovative technologies based on the LCA in food and fisheries processing and packaging. BL: 0 / T: at least 5 Number of advocacy initiatives to upscale pilot projects' findings at regional level. . BL: 0 / T: at least 2	WWF's Water Stewardship Programme	IFAD FAO WWF
4	Prevent and minimize resource waste and food wastage in all the life cycle of the food; promote the production and use of energy and compost from food waste coming from the selectively collected fraction of the municipal waste and agricultural organic waste.	Compilation of publications and dissemination of best practices and lessons learned in the Mediterranean countries related to minimizing and reuse of waste resources in the FFA sector, specifically biowaste, as a means for improving soil ecology and reducing GHG emissions. Implementing pilot projects and upscaling project's findings at regional level , including promotion of home composting.	500	Number of agriculture Ministries that benefit from capacity building on resource waste and food wastage. T: 10 Number of pilot projects implemented that adopt the prevention of resource and food waste. BL: 0 / T: at least 5 Number of dissemination events at regional level for upscaling the findings. LB: 0 / T: 2 regional events	SWEEP-Net Spain's National Strategy for Food Waste	IFAD FAO WWF

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
Operational Objective 1.2: Develop the policy and legal framework to promote sustainable agriculture, fisheries and food production and consumption, with special focus on the Mediterranean Diet, engaging local communities and small-medium scale producers, distributors & retailers of sustainable Food, Fisheries and Agriculture products						
5	Adopt rural development policies including the development of sustainable value chains with high market potential to maximize employment and income generation, address rural migration and respond to Food Security challenges (e.g. National Organic Strategy, Sustainable Farming Strategy).	<p>Assessment of policy gaps for the adoption of rural development policies based on sustainable agriculture and fisheries development in the Mediterranean region.</p> <p>Identify regulatory procedures related to minimizing and reuse of waste resources in the FFA sector.</p> <p>Design and implement a toolkit on sustainable agriculture and fisheries development for policy makers based on the assessment.</p>	150	<p>Number of countries in which the toolkit for policy makers on sustainable agriculture and fisheries development is presented and implemented BL:0 / T: at least 6 countries</p> <p>Number of countries which national legislation has been reviewed to integrate sustainable agriculture and fisheries. T: at least 6 countries</p>	ISWA (Recycling & Recovery SWEEP-Net)	IFAD FAO WFP CIHEAM
6	Promote “Green Financing” for the food, agriculture and fisheries consumption and production areas by facilitating access to loans and grants for farmers and fishermen to start sustainable agriculture and fishing activities, introducing fiscal instruments favouring sustainable agriculture and fisheries practices, like elimination or reduction of deemed “harmful” subsidies on water and energy consumption, and providing incentives for good environmental practices like Integrated Pest Management (IPM) and organic farming”.	<p>Conduct a regional study on fiscal instruments for promoting sustainable agriculture and fisheries development.</p> <p>Develop guidelines for promoting fiscal instruments related to sustainable agriculture and fisheries development, including Payment for Ecosystem Services (PES) and supporting the creation of green jobs.</p> <p>Identify and promote innovative financial mechanisms and sources of funding for sustainable FFA initiatives.</p>	150	<p>Number of countries that where a capacity programme on fiscal instruments related to sustainable agriculture and fisheries development is presented and implemented BL:0 / T: at least 6</p> <p>Number of countries that have modified their fiscal legislation to integrate fiscal and financial incentives for sustainable agriculture and fisheries. T: at least 6 countries</p>		<p>African Development Bank</p> <p>Islamic Development Bank</p> <p>European Investment Bank</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
7	Establish quality control, traceability, standards harmonization and certification schemes that confirm the sustainable production of food and fisheries products.	<p>Conduct a regional assessment to review existing eco-labels to define minimum common standards.</p> <p>Define a common framework and procedures for the coordination and the recognition of eco-labels, focusing on food and fisheries at an initial phase given its importance to the promotion of the “Mediterranean Diet”.</p> <p>Advocate for the approval of a common framework for the recognition of eco-labels in the FFA sector by key regional actors.</p>	250	<p>Approval of a common framework for the recognition of eco-labels in the FFA sector by key regional institutions</p> <p>Number of countries that have endorsed the common framework. BL: 0 / T: 15</p>	<p>Avalon Network (http://www.avalon.nl/network)</p> <p>IFOAM (http://www.ifoam.com)</p>	<p>UNEP CIHEAM ICLEI UNESCO European Authority for Food Security</p>
8	Promote Sustainable Public Procurement (SPP) schemes for food and fisheries products and promoting the “Mediterranean Diet” as a basis for sustainable and healthy consumption patterns.	<p>Develop guidelines for the adoption of SPP in the FFA sector.</p> <p>Sub-regional workshops on SPP related to sustainable agriculture and fisheries and promoting the Mediterranean Diet.</p>	300	<p>Number of Sub-regional workshops organized on SPP for the promotion of sustainable agriculture and fisheries and Mediterranean Diet. T: 10</p> <p>Number of SPP schemes adopted at national level in the FFA sector. T: 10</p>	UNEP Sustainable Public Procurement Programme	<p>UNEP European Authority for Food Security</p>
<p>Operational Objective 1.3: Sensitize and educate food producers, retailers and consumers, and support the development of appropriate market tools and information, to promote sustainability throughout the value chains of agriculture and fisheries management, as well as food processing and food distribution</p>						

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
9	Support the development of regional value chains integrating SCP principles in the Food, Fisheries and Agriculture priority area, and with high market potential, ensuring the transition towards a more sustainable production while maximizing the employment and income generation gains for local producers.	Develop a Regional Green Export Review (RGER) to identify products with high market potential (using UNCTAD's "Green Product Space" methodology) in the FFA sector.	400	Number of green product value chains involving the participation of producing firms from developing countries in the region, in cooperation with final market value chain distributors, retailers, consumers and possible recycling/waste management firms established in the region: BL: 0 / T: At least 3	UNCTAD's "Green Product Space"	UNCTAD
10	Promote the labelling and branding of the sustainable locally produced food (including organic food and zero-kilometre products) and fair trade products and provideneeded support for market access of the "Mediterranean Diet".	Develop guidelines for product specifications with the label "Mediterranean Diet" including considerations related to Sustainable Food Products. Provide needed training on quality control, traceability, certification and increase market integration and access particularly for small local producers.	300	A label for the "Mediterranean Diet", including the criteria of Sustainable Food Products, is established in the region Percentage of increase of labelled sustainable locally produced products. T: 25%	UNESCO's nomination of the "Mediterranean Diet" as an Intangible Cultural Heritage Fairtrade network EU's MedDiet project	UNESCO CIHEAM WWF Fairtrade Government of Spain
11	Improve the knowledge base and build a shared Mediterranean Knowledge System on the "Mediterranean Diet" for concerned research organizations, producers, certification bodies and governments and increase visibility and impact.	Identify existing sources of gene pools and geographical indicators in the sector for Mediterranean countries. Elaborate a Knowledge Management Platform related to the "Mediterranean Diet" providing a basis for mainstreaming the concept in the region. Identify specific support for promoting regional collaboration platforms for fisheries management.	150	Number of regional partners that entered and are active in the Knowledge Management Platform related to the "Mediterranean Diet". BL:0 / T: 40	GenmedOc (http://www.genmedoc.org/) Mediterranean Platform of Artisanal Fishers (MedArtNet)	CIHEAM WWF Fundacion Dieta Mediterranea

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
12	Implement information and education campaigns to promote the concept of the “Mediterranean Diet” and ensure public engagement in the production and consumption of sustainable food and local agriculture and fisheries products, along with reduction of food waste.	<p>Conceive and implement a regional competition related to the “Mediterranean Diet”.</p> <p>Organize regional workshops and trainings to support producers and consumers in adopting the concept of the “Mediterranean Diet” across the Mediterranean countries.</p>	400	<p>Number of countries that participate to the competition. BL:0 / T: 12</p> <p>Number of regional workshops and trainings organized to support producers and consumers in adopting the concept of the “Mediterranean Diet” BL:0 / T: 5</p>	Forum on Mediterranean Food Cultures	<p>UNEP</p> <p>FAO</p> <p>UNESCO</p> <p>CIHEAM</p> <p>WWF</p> <p>Fundacion Dieta Mediterranea</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
GOODS MANUFACTURING						
Operational Objective 2.1: Promote sustainability-driven innovation and knowledge and the integration of Best Available Techniques (BATs) and Best Environmental Practices (BEPs) through the entire value chain of goods production, including the upstream and downstream flows of resources and waste, paying particular attention to the life-cycle of manufactured goods						
13	Promote innovation and use BATs and BEPs including (but not limited to) environmental performance; human protection (toxic free products and manufacturing processes), resource efficiency, renewable energy, in the manufacturing of goods and the provision of alternative services.	<p>Compilation and communication of best practice case studies on sustainable production in goods manufacturing and the provision of alternative services (emphasize on environmental performance; human protection resource efficiency, renewable energy).</p> <p>Dissemination and provision of information of best practice case studies on sustainable production in goods manufacturing and the provision of alternative services through workshops and Webinars.</p> <p>Implementation of pilot projects on sustainable production in goods manufacturing sector (integrating resource efficiency, renewable energy, environmental performance and human protection).</p>	<p>Compilation of best practice case studies 150</p> <p>Pilot projects 500</p>	<p>Number of workshops and webinars conducted to communicate best practice case studies on sustainable production in goods manufacturing and the provision of alternative services BL: 0 /T: 6 Workshops, 12 Webinars)</p> <p>Number of pilot projects on sustainable production in goods manufacturing sector implemented. BL: 0 /T: 5 Pilot projects completed by 12/2021.</p>	Horizon 2020 Initiative SwitchMed (Green Entrepreneur) UNEP Green Economy EU BREFs Projects facilitated by IRENA	UNIDO UNEP (DTIE) UNEP (MAP) EU IPPC JRC IRENA – International Renewable Energy Agency (www.irena.org)

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
14	Promote innovation and use BATs and BEPs to implement the waste management hierarchy and encourage closed loop material cycles. This should consider toxics elimination, product durability, reparability and dematerialization and should include the encouragement of green sector value chains by the establishment of industrial recycling and remanufacturing networks connecting companies generating wastes with those recycling it.	<p>Compilation and dissemination of best practice case studies for improving manufactured goods towards supporting the waste hierarchy (toxics elimination, product durability programmed obsolescence, reparability and dematerialisation) and promoting green sector value chains.</p> <p>Dissemination and provision of information of best practice cases for improving manufactured goods towards supporting the waste hierarchy through workshops and Webinars.</p> <p>Development of a national/regional networks (and platform) to enhance collaboration between stakeholders along the value chain (connect the companies generating wastes with those recycling it) to create highly efficient reverse logistics.</p>	<p>Compilation of best practice case studies 50</p> <p>Workshops and Webinars 300</p> <p>Development of waste/resource networks (platform) 100</p>	<p>Number of workshops and webinars conducted to communicate best practice case studies BL: 0 /T: 15 workshops and 20 Webinars conducted.</p> <p>Number of countries that have developed National networks (platforms) to enhance collaboration between stakeholders along the value chain for waste/resource recovery. BL: 0 / T: 10.</p>	Horizon 2020 initiative SWEEP-Net UNEP SCP Clearing House EU SUBSPORT project; Implementation of Stockholm/Chemical Conventions	UNEP/MAP SWEEP-Net ACR+ ISWA (Recycling & Recovery) SUPSPORT-Institutions

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
15	<p>Promote, use and develop tools such as eco-design, Life Cycle Management, risk assessment of chemicals, substitution of hazardous chemicals, and Cradle to Cradle to facilitate the sustainable design and production of manufactured goods. This should include the formulation and promotion of a related research and development agenda and the compilation of best practice cases.</p>	<p>Compilation and dissemination of best practice case studies of SCP tools facilitating sustainable design of manufactured goods.</p> <p>Conducting pilot projects (substitution of hazardous chemicals, Cradle to Cradle; LCA) in selected non-EU Mediterranean countries.</p> <p>Formulation of a regional research and development agenda on sustainable design and promotion of such agenda to be included within the national research and development programmes.</p>	<p>Budget for compilation of best practice case studies 150</p> <p>Pilot projects 750</p> <p>Budget for formulation and dissemination of a R&D agenda 200</p>	<p>Compilation document of Best practice case studies by 12/2017.</p> <p>Number of workshops and webinars conducted to communicate best practice case studies of SCP tools facilitating sustainable design of manufactured goods BL:0/T: 6 workshops 12 Webinar conducted by 12/2021.</p> <p>Number of pilot projects conducted on selected tools in non-EU Mediterranean countries BL: 0 / T: At least 3 pilot projects conducted by 12/2021, including documentation and communication.</p> <p>R&D Regional Agenda on sustainable designed by 12/2018</p> <p>Number of national universities/institutes that have included sustainable design in their programmes. T: At least 5 Universities or institutes.</p>	<p>SwitchMed ReSCP SUBSPORT Implementation of Chemical Conventions EC (product environmental footprint and organization environmental footprint pilots)</p>	<p>UNIDO UNEP/MAP UfM</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
16	Create green businesses and jobs in sustainable goods manufacturing and recycling/refurbishment and alternative services such as switching from a product ownership to a Service Systems and lease based economy ("servicizing") and other innovative business approaches.	<p>Education to generate jobs in refurbishment and recycling of manufactured goods in the region.</p> <p>Creation of awareness and dissemination of information on job creation and social business models</p> <p>Provision of support for implementing servicizing businesses models and other innovative business approaches in the regions (e.g. chemical leasing, car sharing, social business models, etc).</p>	<p>Education and job creation in refurbishment and recycling of manufactured goods 500</p> <p>Support servicing and other innovative business models 300</p>	<p>Number of jobs created in refurbishment and recycling of manufactured goods generated in the region (by 12/2021). T: 10,000</p> <p>Number of projects in which Servicing business models and other innovative business approaches have been successfully tested. BL:0 / T: at least 2 pilot projects (by 12/2021).</p>	SwitchMed (Green Entrepreneur) SWEEP-Net Country initiatives (UNEP/MAP UNIDO SCP/RAC
Operational Objective 2.2: Develop integrated policy making and the legal framework to promote sustainable consumption, production and recovery in the goods manufacturing sector with the aim to move towards a circular economy						

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
17	Develop an institutional framework to encourage integrated national and local decision making through the involvement, collaboration and coordination of relevant stakeholders including governmental bodies, industries and civil society for improved integrated policy making (national and local) using life cycle thinking and forward looking decision making for the sustainable production, consumption and recovery of manufactured goods including an enforcement and assessment system.	<p>Compilation, elaboration and dissemination of individual life cycle thinking tools (e.g. material flow analysis, substance flow analysis, LCM, circular economy concept, external costs, ecosystem services) for policy making demonstrating their practical usefulness for forward looking decision making.</p> <p>Development of models for an inter-ministerial committee/body responsible for consideration of inclusion of life cycle thinking for sustainable production, consumption and recovery in all the relevant sectoral policies. The committee should also incorporate representatives of civil society and business associations.</p>	<p>Compilation and dissemination 250</p> <p>Models for an inter-ministerial committees and introduction to pilot countries 200</p>	<p>Number of workshops and webinars conducted to communicate individual life cycle thinking tools for policy making to responsible governmental bodies in non-EU Mediterranean countries by 12/2017). BL: 0 / T: 20</p> <p>Number of Models for an inter-ministerial committee/ body responsible for consideration of inclusion of life cycle thinking tools for sustainable production & consumption developed BL: 0 / T:5</p> <p>Number of countries that have introduced models for an inter-ministerial committee/ body responsible for consideration of inclusion of life cycle thinking tools for sustainable production & consumption BL: 0 / T: at least 3 pilot countries.</p>	EU beyond GDP EU Forward looking decision making	UNEP/MAP SCP/RAC UfM EU institutions

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
18	<p>Create at regional level an effective policy and regulatory framework for the reuse, repair, recycling and recovery of manufactured goods (waste management hierarchy) based on life cycle techniques and the promotion of extended producer responsibility at national and local levels. This should include the set-up of a frame for decent jobs in repair, refurbishment, recycling and waste management considering the role of the formal and informal sectors along with their respective needs for training, health and safety and livelihood.</p>	<p>Outline a policy and regulatory framework promoting the prevention, reuse, repair, recycling and recovery of manufactured goods (waste management hierarchy) and the promotion of extended producer responsibility at national and local level</p> <p>Compilation of best practice case studies and dissemination for a) implementing the waste hierarchy for selected waste categories at city and regional level and b) establishing decent jobs in repair, refurbishment, recycling and waste management considering the role of the formal and informal sectors along with their respective needs for training, health and safety and livelihood.</p> <p>Implementation of pilot projects at city and/or national level for establishing decent jobs in recycling and waste management, considering also the role and necessities of informal sectors.</p>	<p>Outline of a policy and regulatory framework 100</p> <p>Compilation of best practice cases 150</p> <p>Pilot projects 500</p>	<p>Draft proposal for a policy and regulatory framework by (12/2017)</p> <p>Compilation document of best practice case studies by 12/2017</p> <p>Number of workshops and webinars conducted to communicate best practices in implementation of the waste hierarchy for selected waste categories at city and regional level and for establishing decent jobs in repair, refurbishment, recycling and waste management BL: 0 /T: 6 workshops -12 Webinars by 12/2019</p> <p>Number of countries that have implemented pilot projects on developing jobs in recycling and waste management BL: 0 /T: At least 3 pilot projects (12/2021).</p> <p>Number of jobs created. T: 10,000</p>	<p>SWEEP-Net (the regional solid waste exchange of information and expertise Network)</p> <p>Waste management of marine litter (Within the Barcelona Convention Marine Litter action plan)</p> <p>IPLA International Partnership for Expanding Waste Management Services of Local Authorities</p>	<p>UNEP/MAP UfM SWEEP-Net ACR+ IPLA</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
19	<p>Promote full cost accounting and market base instruments (MBI) which favour sustainable goods and alternative services taking account of renewable energy use; eco-innovation; and support of green entrepreneurs and green jobs. This would also include financial and tax based mechanisms to encourage relative sustainable goods production and practices, and discourage unsustainable goods consumption.</p>	<p>Compilation of tools and success stories of full cost accounting (external costs; LCA), extended producer responsibility models and other market base instruments for supporting sustainable production in goods manufacturing sector.</p> <p>Implementation of Pilot projects in selected countries to prove best practice tools and market based instruments.</p>	<p>Compilation of tools and success stories 150</p> <p>Pilot projects in selected countries to implement the tools and market based instruments 300</p>	<p>Compilation document of tools and success stories of full cost accounting (external costs; LCA), extended producer responsibility models and other market base instruments by 2017.</p> <p>Number of workshops and webinars conducted to disseminate success stories of full cost accounting (external costs; LCA), extended producer responsibility models and other market base instruments for supporting sustainable production in goods manufacturing sector BL: 0 / T: 6 workshops and 10 Webinars by 12/2018.</p> <p>Number of countries that have implemented pilot projects to prove best practice tools and market based instruments. BL: 0 / T: At least 3 pilot projects.</p>	<p>UNEP E-RISC: Environmental Risk Integration in Sovereign Credit Analysis (report) UNEP Valuing Plastic (report) EU ExternE Project European Environmental Agency external cost activities Global Footprint Accounting</p>	<p>UNEP/MAP UNEP Finance Initiative SCP/RAC Global Footprint Network Plan Bleu</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
20	Promote and adopt Sustainable Public Procurement (SPP) schemes for manufactured goods based on agreed standards.	<p>Organization of regional workshops and webinars to communicate the experience and best practice studies from UN and EU activities on Sustainable/Green Public Procurement and supporting the implementation of SPP in the region.</p> <p>Implementation of Pilot projects on Sustainable/Green Public Procurement in the Goods Manufacturing sector (includes training and capacity building on how to develop national SPP)</p>	<p>Regional workshops and webinars on SPP 120</p> <p>Pilot projects 500</p>	<p>Number of regional workshops and webinars conducted to disseminate the experience and best practice studies from UN and EU activities on Sustainable/Green Public Procurement and supporting the implementation of SPP in the region. BL: 0 / T: 4 Regional workshops and 15 webinars conducted by 12/2017.</p> <p>Number of countries that have implemented pilot projects on Sustainable/Green Public Procurement in the Goods Manufacturing sector. . BL: 0 / T: At least 3 pilot projects on Sustainable/Green Public Procurement in the Goods Manufacturing sector conducted by 2021.</p>	<p>UNEP current SPP activity in 10 YFP</p> <p>EU Procura+ (http://www.procuraplus.org/)</p>	<p>UNEP/DTIE</p> <p>EU Local Governments for Sustainability (ICLEI) and institutions in Med Region</p> <p>SCP/RAC</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
21	Assist enterprises to implement Environment Management Systems (EMS) and Ecolabels, facilitate hazardous chemicals substitution, sustainability reports, and support the creation of the necessary accreditation and certification bodies.	<p>Evaluation of the current status and the need to enhance the necessary education, accreditation and certification bodies in the region and institution which support enterprises in the accreditation process.</p> <p>Supporting existing and new institutions that can help enterprises to facilitate the implementation of EMS (ISO 14001, EMAS), Ecolabels, hazardous chemicals substitution and preparation of sustainability reports.</p> <p>Provision of Training (workshops and webinars) for the different accreditation bodies in the region.</p>	<p>Evaluation of the current status and of needs to enhance and/or create the necessary education, accreditation and certification bodies 100</p> <p>Support to institutions and accreditation bodies 500</p> <p>Training 200</p>	<p>Evaluation document of the status and need for education, accreditation and certification bodies in the region (by 12/2017).</p> <p>Number of existing institutions supported to help enterprises to facilitate the implementation of EMS, Ecolabels, hazardous chemicals substitution and preparation of sustainability reports BL: 0 / T: 10</p> <p>Number of institutions offering a new service of support for enterprises to facilitate the implement EMS, eco-labels, facilitate hazardous chemicals substitution, preparation of sustainability reports (by 12/2019). T:20</p> <p>Number of workshops and webinars conducted to train on accreditation tools in the region. BL: 0 / T: 10 workshops and 30 webinars by 12/2021.</p>	CSR initiative AFED Corporate Environmental responsibility (CER)	UNEP/MAP UNEP SCP/RAC Arab Forum for Environment and Development EEB & BEUC

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
Operational Objective 2.3: Educate and raise awareness of consumers and other stakeholders and support the development of market structures, increasing the visibility and market share of sustainably manufactured, used and disposed-of goods and alternative services.						
22	Establish and promote certification schemes (eco-labels), for manufactured goods and alternatives services in the country; promote related activities like voluntary agreements between retailers and public authorities to promote sustainable products.	<p>Development and dissemination of a strategy and guidance for promoting the use and visibility of environmental certification schemes (eco-labels) in the non-EU Mediterranean countries.</p> <p>Support companies in the region to get environmental certifications (EU Ecolabels)</p> <p>Promotion of sustainable goods (with eco-label, fair labels or being otherwise sustainable) by voluntary agreements between retailers and public authorities.</p>	<p>Strategy and guidance 100</p> <p>Support Ecolabel awarding 500</p> <p>Negotiation and development of voluntary agreements with retailers 50</p>	<p>Strategy and guidance document to promote certification (eco-labels) in the region by 12/2017.</p> <p>Number of workshops and webinars conducted to disseminate strategy and guidance document to promote certification (eco-labels) in the region. BL: 0 / T: 6 workshops and 10 Webinars.</p> <p>Percentage of increase of awarded (EU/regional) ecolabel manufactured goods from companies of the region in the EU ecolabeled production categories. T : 30%</p> <p>Number of companies supported in the region to get EU Ecolabels awarded. T: 300</p> <p>Number of products newly awarded with the Ecolabel. T:500</p> <p>Percentage of products in retail that are awarded eco-labels. T: 20%</p>	EU Ecolabel Regional labels	UNIDO UfM JRC Seville SCP/RAC EEB & BEUC

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
23	<p>Educate and inform stakeholders (consumers, policy and decision makers, producers, retailers, academia) about sustainable production and consumption of manufactured goods and alternative services including information relating to ecolabels, local/regional products, waste hierarchy, ecological footprint accounting, Life Cycle Assessment, external cost, corporate sustainability reporting and other approaches.</p>	<p>Compilation and dissemination of best practice materials for the different stakeholder groups (consumers, policy and decision makers, producers, retailers, academia).</p> <p>Implementation of Pilot projects for raising awareness on SCP of individual stakeholder groups in different countries (2021).</p>	<p>Best practice case studies 300</p> <p>Pilot projects 500</p>	<p>Compilation document of tailor made best practice information material on SCP of manufactured goods and alternative services for different stakeholder groups in languages of the region by 12/2017.</p> <p>Number of workshops and webinars and film festivals conducted to disseminate compilation of best practice materials for the different stakeholder groups (consumers, policy and decision makers, producers, retailers, academia) T: 6 workshops; 10 Webinars, 3 Film Festivals</p> <p>Number of countries that have implemented pilot projects for raising awareness on SCP of individual stakeholder groups BL: 0 / T: at least 3 pilot projects for testing of awareness materials & approaches in selected countries and modification and adaptation based on experiences gained.</p>	<p>UNEP 10YFP SCP Clearing House http://www.scpclaringhouse.org/ UNESCO – Education for Sustainable Development YouthXchange http://www.youthxchange.net/ Consumpedia The Partnership for Education and Research about Responsible Living www.perlprojects.org</p>	<p>UNEP/DTIE; UNEP/MAP SCP/RAC IUCN, UNESCO Bibliotheca Alexandrina http://www.bibliothecaalex.org/aboutus/overview_en.aspx</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
24	<p>Demonstrate and publicize the economic, environmental and social benefits of sustainably manufactured goods and alternative services using appropriate media outlets. Particular emphasis should be given to promoting the economic and business case for individual categories of manufactured goods (or alternative service provision), emphasizing the benefits to consumers, the private sector and the environment.</p>	<p>Compilation of the economic and business cases for individual categories of manufactured goods, demonstrating the economic, environmental and social benefits of sustainably manufactured goods and alternative services.</p> <p>Dissemination of the economic, environmental and social benefits of sustainably manufactured goods and alternative services through an appropriate mix of media outlets (e.g. national TV, Webpage, Web 2.0).</p>	<p>Compiling business cases 100</p> <p>Communication via media outlets 300</p>	<p>Document compilation of information of the economic and business cases for 20 individual categories of manufactured goods by 12/2017.</p> <p>Number of workshops and webinars conducted to disseminate the economic, environmental and social benefits of sustainably manufactured goods and alternative services. T: 3 workshops; 10 Webinars; possibly TV</p> <p>Number of TV channels that disseminate the economic, environmental and social benefits of sustainably manufactured goods and alternative services. T: 10</p>	<p>UNEP SCP Clearing House</p> <p>Web 2.0 (Smartphone Apps Toxfox)</p> <p>Consumpedia</p>	<p>SCP/RAC UNEP TV Stations NGOs developing APPs & Webinars</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
25	Improve education on sustainable production and consumption of manufactured goods and alternative services by reviewing and updating primary, secondary and tertiary educational curricula in relation to issues such as engineering processes, design, marketing, advertising, economy (including business schools), chemistry, health, education, social and environmental impacts of products and services.	<p>Compile and develop best practice education modules on sustainable production and consumption of manufactured goods and alternative services for primary, secondary and tertiary educational curricula, with special focus on business school.</p> <p>Support or initiate national efforts to update primary, secondary and tertiary educational curricula in respect to sustainable production and consumption for manufacturing goods in the MENA and Easter countries including e.g. engineering, design, marketing, advertising, economy, chemistry, health, education, social and environmental education curricula.</p>	<p>Compiling and developing education modules on SCP 200</p> <p>Support to integrate SCP education in curricula in non-EU Mediterranean countries 250</p>	<p>Number of education modules on SCP of manufactured goods developed for primary, secondary and tertiary educational curricula by 12/2019</p> <p>Number of countries supported to update primary, secondary and tertiary educational curricula in respect to SCP for manufacturing goods BL: 0 / T: at least 5 countries supported (Manufactured Goods component).</p>	<p>UNEP SCP Clearing House The Partnership for Education and Research about Responsible Living www.perlprojects.org / EU ERASMUS+ Program (Lifelong learning)</p>	<p>UNESCO, The Partnership for Education and Research about Responsible Living www.perlprojects.org/ EU UNEP/DTIE; UNEP/MAP SCP/RAC</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
TOURISM						
Operational Objective 3.1: Develop and promote practices and solutions to ensure efficient use of natural resources and reduce environmental impacts of tourism, respecting spatial, ecological, and socio-cultural carrying capacities of the destination						
26	Promote the sharing of relevant knowledge on SCP applied to tourism (e.g. best environmental practice (BEP) and best available techniques (BAT) to optimise the eco-efficiency of tourism activities and the use of environmental management systems (e.g. ISO 14001).	Development of a guidelines document that sets best practice information material for different tourism sectors (e.g. hotel management, transportation, harbours, tourism real estate development, etc.) compiled in the languages of the region. Establish a web platform to disseminate the guidelines on SCP applied to tourism sector.	compilation of best practice guidelines 75 web platform 70	Number of destination managers informed and aware of the best practice Guidelines through the web platform. BL: 0 / T: 10,000	P.H.A.R.O.S. - (LIFE ENV) MED-COASTS S-T (LIFE ENV) SUTOUREELM (LIFE ENV) 10YFP Sustainable Tourism Program	SCP/RAC JRC Seville
27	Develop a destination management model to promote sustainable tourism and create a network of sustainable destinations.	Development of a Sustainable Destination Management Organization (SDMO) model building on previous work done in the region (hand book). Implementation of SDMO in pilot coastal destinations. Development of a Mediterranean network of coastal destinations which have implemented the SDMO (online platform).	Hand Book on SDMO 90 Pilot projects 400 Network 120	Number of coastal destinations that have adopted the SDMO. BL: 0 T: 24 Number of countries of the Mediterranean network of coastal destinations that have implemented the SDMO BL: 0 / T: 8 Number of coastal destinations part of the network B: 0 / T : 20	S&T MED (ENPI-CBC-MED) EDEN	Ministries or other Institutions responsible for Tourism in the Contracting Parties Plan Bleu TSG - Tourism sustainability Group UNESCO - WHC

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
28	Promote local sustainable tourism training to enhance local capacities and upgrade the existing ones.	<p>Prepare and implement a Programme to integrate the concept of sustainable tourism in schools and training centres at the local level.</p> <p>Compile and develop education modules on sustainable tourism for primary, secondary and tertiary educational schools.</p>	<p>Preparation of the Programme 25</p> <p>Preparation of education modules 60</p>	<p>Number of schools and training centres that have integrated the concept of sustainable tourism in their curriculum BL: 0 / T: 3 schools in each participatory country</p> <p>Number of schools of primary, secondary and tertiary education that use the developed education module BL: 0 / T: 50</p>	Coast Project S&T MED (ENPI CBC MED) 10YFP Sustainable Tourism Program	UNESCO - WHC UNWTO

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
29	Promote the diversification of the tourism offer from mass tourism to alternative forms of tourism (e.g. ecotourism, cultural tourism, rural tourism, off-season tourism) to reduce the impacts of seasonality and to reduce environmental pressures on coastal areas.	<p>Development of a Handbook compiling cases demonstrating the economic, environmental and social benefits of the diversification of the tourism offer, and dissemination of the guide.</p> <p>Preparation of a communication plan to publicise the economic, environmental and social benefits of best practices for diversification of tourism offer.</p> <p>Dissemination activities including seminars to inform about opportunities of alternative form of tourism to reduce seasonality; brochures; Website.</p> <p>Implementation of a pilot case of alternative tourism offer in a Mediterranean Country.</p>	<p>Handbook with best practices 75</p> <p>Communication Plan 50</p> <p>Communication activities 300</p>	<p>Number of handbooks distributed to destination managers. BL: 0 / T: 1,000 (2020)</p> <p>Number of public institutions and stakeholders informed and aware of the Handbook. BL: 0 / T:300 (2020)</p> <p>Number of participants in dissemination seminars about alternative tourism. BL: 0 / T: 6,000 (2020)</p> <p>Number of brochures about diversified tourism offer distributed. T: 15,000 (2020)</p> <p>Number of visitors to the dedicated website. BL: 0 / T 500,000 (2020)</p>	EU CALYPSO INITIATIVE MED COASTS (LIFE) F.O.P. (ENPI CVC MED) 10YFP Sustainable Tourism Program	UN WTO TSG - Tourism sustainability Group
Operational Objective 3.2: Promote regulatory, legislative and financial measures to mainstream SCP in the tourism consumption and production area, to reduce tourism seasonality creating green and decent jobs and to promote local community engagement and empowerment						

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
30	Revise current tourism legislation at the national level to facilitate the integration of SCP principles and measures in the tourism sector.	<p>Promotion of the creation of regional committee formed of relevant ministries (e.g. Tourism, Environment, Economy, Finance etc.) in charge of mainstreaming SCP in the tourism sector in each Mediterranean country.</p> <p>Preparation of a study reviewing the national legislation of the Mediterranean countries providing recommendation on how to integrate SCP in the tourism sector (to be submitted for consideration to the regional committee).</p>	Study reviewing national tourism legislation of Mediterranean countries 200	<p>Number of measures to integrate SCP in the tourism sector in the national legislation proposed by the regional committee BL: 0 / T: 10</p> <p>Number of Mediterranean countries which national legislation has been reviewed to integrate SCP in the tourism sector. BL: 0 / T: 8 (2017)</p>	SUTOUREELM (LIFE ENV) 10YFP Sustainable Tourism Program	SCP/RAC UN WTO and UNEP/DTIE
31	Create eco-taxes, eco-charges or fees as an effective instrument to internalize externalities (e.g. tax relief of tourism activities during the low season) creating a fund exclusively earmarked for the improvement of the environmental quality of the destination and for the creation of green jobs.	<p>Compilation and dissemination of Guidelines on eco-taxes, eco-charges and other environmental fees applied to the tourism sector (including success stories).</p> <p>Tailored support for the implementation of eco-taxes/eco-charges to pilot coastal destinations.</p>	Guidelines 40 Support to implement eco-taxes/eco-charges 100	<p>Number of Guidelines on eco-taxes, eco-charges and other environmental fees distributed to destination managers. BL: 0 / T: 500 (2019)</p> <p>Number of destination managers informed and aware of the Guidelines. BL: 0 / T: 100 (2019)</p> <p>Eco-taxes/eco-charges initiative implemented. BL: 0 / T: 9</p> <p>Creation of green jobs related to the introduction of eco-taxes/eco-charges : BL: 0 / T: 1,500</p>	ECOTAX LANZAROTE (LIFE ENV)	PAP/RAC TSG - Tourism sustainability Group

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
32	Promote the Tourism Carrying Capacity Assessment (TCCA) approach as a mandatory analysis for the preparation of national and local tourism planning and for the approval of new tourism investment.	Preparation and dissemination of a TCCA guide based on the previous work developed by PAP/RAC and by the EU DG ENV. Implementation of Pilot projects in selected countries for the application of TCCA to coastal destinations.	Preparation of TCCA Guide 75 Pilot Projects 300	Number of Guides distributed to destination managers. T: 1,000 Number of destination managers informed and aware of the Guides T: 200 Number of countries that have implemented pilot projects for the application of TCCA to coastal destinations T=5	DESTINATIONS (Life Third Countries)	PAP/RAC
33	Develop policies and actions to minimize the physical impact of tourist activity.	Preparation and dissemination of Guidelines on how to apply policies and actions to minimize the physical impact of tourism activity (e.g. codes of conduct, visitor management measures, education activities, voluntary agreements). Implementation of Guidelines through pilot projects (e.g. visitor management measures for parks and marine protected areas to reduce pressures and deflect activities to more robust sites, voluntary agreements).	Preparation of guidelines 50 Training activities 90 Pilot Projects 100 per destination	Number of guidelines distributed to destination managers. BL: 0 / T: 500 (2018) Number of destination managers trained on the Guidelines. BL: 0 / T:150 (2020); Number of countries that have implemented pilot projects based on the Guidelines BL: 0 / T:150	EDEN – European Destination of Excellence MEET (ENPI CBC MED) 10YFP Sustainable Tourism Program	PAP/RAC SPA/RAC Other players to involve: TSG – (Tourism sustainability Group) and UNESCO WHC
Operational Objective 3.3: Raise awareness, capacities and technical skills to support sustainable destinations and green tourism services, and promote the development of appropriate marketing and communication tools to ensure a competitive sustainable Mediterranean Tourism						

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
34	Promote tourism eco-labels, environmental certification and rating schemes with robust environmental criteria based on a standard scheme verified by an independent organization (e.g. EU Ecolabel, Green Key, Nordic Swan, etc.).	<p>Undertake a regional assessment study to review existing eco-labels, environmental certification and rating schemes to define minimum common standards.</p> <p>Define a shared framework and procedures for the coordination and the recognition of the standard scheme.</p> <p>Elaboration of a communication plan to raise the number of certificated tourism enterprises.</p>	<p>Assessment study 80</p> <p>Shared framework 60</p>	<p>Number of Mediterranean countries that have defined and adopted a shared framework to integrate existing eco-labels (e.g. EU Ecolabel, Green Key, etc.). BL: 0 / T: 6 (2019)</p> <p>Percentage increase of tourism eco-labels certifications in the Mediterranean by 2021. BL: / T: 100%</p>	<p>Shmle 2 (ENPI CBC MED) TOTEM (Plan Bleu) SUTOUREELM (LIFE ENV) 10YFP Sustainable Tourism Program</p>	<p>Plan Bleu SCP/RAC UN WTO EU - DG ENV</p>
35	Develop and implement capacity building activities for tourism private operators to improve capacities and awareness on the importance of adopting sustainable consumption and production strategies.	<p>Preparation of toolkits on SCP in tourism for the private sector.</p> <p>Disseminate the results of “successful” green tourism business cases among operators through Workshops and Webinars.</p>	<p>Toolkit 100</p> <p>Training Workshops and Webinars 150</p>	<p>Number hotels’ employees trained with the SCP toolkit. BL: 0 / T: 1,500</p> <p>Number of young professionals and senior professionals trained on the implementation of SCP in the hotel sector: BL: 0 / T. young professionals: 500 T. senior professionals: 500 (2020)</p>	<p>UNESCO Sustainable Tourism Toolkit MEET and S&T MED (ENPI CBC MD) COAST Project 10YFP Sustainable Tourism Program</p>	<p>SCP/RAC UNESCO</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
36	Encourage marketing and communication activities focused on promoting the Mediterranean sustainable destinations and enhancing the visibility of Mediterranean sustainable tourism service providers in the international and national markets (e.g. flagship events; participation to international fairs, exhibitions and major public events; agreements with online tour operators and other intermediaries; web-marketing and thematic publishing).	<p>Promote a Mediterranean fair dedicated to sustainable tourism destinations and green tourism operators in the region.</p> <p>Develop a Sustainable Trip Advisor to market Mediterranean sustainable destination and green hotels and other green tourism services.</p>	<p>Fair 500</p> <p>Sustainable Trip Advisor Web Site 150</p>	<p>Biannual Mediterranean fair for Sustainable Tourism held in autumn 2019 and in autumn 2021</p> <p>Number of monthly visitors of the Sustainable Trip Advisor webpage. BL: 0 / T: 100,000</p> <p>Number of reviews and opinions covering more than 5 thousands accommodations, restaurants, and attractions. BL: 0 / T: 50,000</p>	<p>EU CALYPSO INITIATIVE Reise Pavillon, Falacosagiusta (Fairs) Green Leaders Programme of Trip Advisor 10YFP Sustainable Tourism Program</p>	<p>SCP/RAC</p> <p>Other players to involve: UN WTO, TOI, ASCAME</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
HOUSING AND CONSTRUCTION						
Operational Objective 4.1: Promote innovation and knowledge and the integration of Best Available Techniques (BATs) and Best Environmental Practices (BEPs) that enhance resource efficiency throughout the entire planning and construction process and life cycle of a building						
37	Promote knowledge and innovative approaches that support the adoption of a holistic and integrated approach (integrating social, environmental, and economic dimensions) in city planning, urban renewal and housing design and construction, as well as in the surrounding built environment, and the implementation of sustainable urban development policies in cities that drive economic activities and revitalize the economy by opening new opportunities for economic activities and businesses, investments, and employment.	<p>Develop a Regional Framework for the adoption of a holistic and integrated approach that ensures the integration of social, environmental, and economic dimensions in city planning, urban renewal and housing design and construction (including energy efficiency) as well as in the surrounding built environment (coastal, rural, urban and desert areas), identification of barriers, and the development of sustainable coastal carbon negative cities that drive economic activities.</p> <p>Develop and initiate the implementation a set of pilot demonstration projects for implementation at the national level, following an integrated approach that will emphasize adopting innovative approaches to overcome financial risks, using of life cycle cost methodology, adopting a bioclimatic approach to housing design, using of energy efficiency and renewable energy, and involving users throughout the process.</p>	200 500	<p>Regional Framework approved and in place</p> <p>Number of pilot demonstration projects formulated. BL: 0 / T:5</p> <p>Number of Mediterranean countries that have implemented pilot demonstration projects BL: 0 / T: 5</p>	Eco Cities Forum	<p>UN HABITAT, UNECE, UNEP/DTIE, UfM, UNEP/MAP</p> <p>UN HABITAT, UNECE, UNEP/DTIE, UfM, UNEP/MAP</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
38	Promote innovation and knowledge through the integration of Best Available Techniques(BATs) and Best Environmental Practices (BEPs) that promote eco-design and the planning and construction of sustainable and affordable housing and high quality of urban environment that caters for the needs of the all social income groups, particularly medium and low income families, and introduce sustainable solutions for slums and downgraded neighbourhoods.	Elaborate and disseminate a compendium of BATs and BEPs for eco-design and the planning and construction of sustainable and affordable housing and high quality of urban environment.	100	<p>Compilation of BATs and BEPs by the end of 2017</p> <p>Number of dissemination activities of the BATs and BEPs: BL: 0 / T: 15</p> <p>Percentage of increase of use of BATs on eco design and the planning and construction of sustainable and affordable housing and high quality of urban environment and BEPs. T: 20%</p>	Eco Cities Forum	UN HABITAT, UNECE, UNEP/DTIE, UNEP/MAP
39	Develop, in collaboration with planning, engineering and construction professional bodies, building and urban development codes for the provision of mix uses, compact urban development, space for pedestrians and cyclers, green roofs, as well as public space and green areas in residential areas for communal use, as means to promote social integration and cohesion, while at the same contributing to a clean, healthy, and productive environment.	Design, disseminate and strengthen capacities for adaptation, at the national level, of building and urban development codes appropriate for the Mediterranean coastal areas.	100	<p>Number of countries that have implemented capacity building activities to adapt and apply the codes: BL: 0 / T: 10</p> <p>Number of countries that have introduced and applied the codes that promote sustainable urban development, housing and construction. T: 5</p>	Eco Cities Forum	UN HABITAT, UNECE, UNEP/DTIE, WHO, UNEP/MAP

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
40	Promote innovative planning and construction models leading to smart cities that secure sustainable housing easily accessible from and to work place, commercial, social, recreation and cultural services in order to reduce commuting, congestion, emissions, and air and noise pollution as well as to reduce and separate waste from households and public administration buildings, retail buildings in order to develop model for PP buildings.	Develop models for green building and smart cities within a sustainable built environment guaranteeing energy efficiency in different geographic areas and climatic conditions.	400	Number of green buildings and smart cities models introduced and implemented in different geographic areas and climatic conditions in the Mediterranean region. LB: 0 / T: 4-6 models	Euro Mediterranean Strategy for sustainable urban development UfM Guidance Framework for sustainable Euro Mediterranean Cities and Territories Covenant of Mayors Initiative	UN HABITAT, UNECE, UNEP, UfM, UNEP/DTIE, UNEP/MAP
Operational objective 4.2: Develop and strengthen the regulatory and legal framework to enhance the contribution of the housing and construction sector to sustainable economic development, social integration and cohesion, and environmental integrity						

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
41	<p>Develop and encourage regulatory and incentive policies and measures that support:</p> <ul style="list-style-type: none"> - Sustainable coastal urban development and green construction throughout the entire planning and construction process and the life cycle of buildings, for the achievement of a more efficient use of natural resources and energy, and the protection of coastal and marine ecosystems; - Sustainable practices in housing and construction through the use of local building materials, traditional knowledge, environmental friendly technologies and materials, sustainable and conscious purchasing practices, and sustainable waste management practices such as the recycling, recovery and reuse of construction-related waste, including demolition waste; and - Proper maintenance and operational efficiency of the existing housing stock. - Develop specific tools/guidelines for assessment of buildings prior to demolition and renovation with a view to optimal use of Construction and Demolition Waste. 	<p>Elaborate and disseminate a regional assessment study to review existing regulatory and incentive measures and assess their impacts on the environment and resource efficiency.</p> <p>Introduce a regulatory and incentive package in the Mediterranean region that encourages SCP in the housing and construction sector.</p> <p>Launch a labelling and certification scheme for green and sustainable housing in the Mediterranean region.</p>	350	<p>Number of countries that have introduced a regulatory and incentive package that encourages SCP in the housing and construction sector. BL: 0 / T: 10</p> <p>Number of countries that have adopted a labelling and certification scheme for green and sustainable housing. BL: 0 / T: 10</p>	<p>ELIH-Med – Energy Efficiency in Low-Income Housing in the Mediterranean http://www.elih-med.eu/</p> <p>The Energy Efficiency Directive (EED) 2012/27/UE.</p> <p>The co-generation directive 2004/8/EC (framework to promote and facilitate the installation of cogeneration facilities).</p> <p>Directive 2006/32/EC on energy end-use efficiency and energy services</p> <p>German DGNB certification scheme</p>	<p>UN HABITAT, UNEP (Green Economy) UNECE UNEP UNEP/MAP</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
42	Promote sustainable public procurement (SPP) in the public housing and construction sector, including subcontracting and services.	<p>Develop and disseminate SPP guidelines document that sets the standards and procedures, including subcontracting, services and maintenance of public housing and construction.</p> <p>Develop a joint SPP approach (including an assessment system for all building energy renovation projects and measures).</p>	100	<p>Number of countries that have disseminated the SPP guidelines document: BL: 0 / T: 22</p> <p>Percentage of increase of the number of countries that have adopted SPP practices in the public housing and construction sector. T: 25%</p>		<p>UN HABITAT, UNEP/DTIE, UfM, UNEP/MAP UNEP/MAP</p>

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
43	Introduce efficient monitoring, enforcement and assessment systems that ensure compliance with and adherence to sustainability principles in physical and urban planning and development; green and sustainable building regulations; codes of practice and standards; and the contribution of housing and construction to resource and energy efficiency, SCP, economic development, job creation, improved environment and human welfare.	Develop, for adaptation at the national level, a framework for the efficient monitoring, enforcement and assessment system that ensures compliance and adherence to sustainability principles in physical and urban planning and development, green and sustainable building regulations, codes of practice and standards. The framework would also include the creation of a coordination mechanism to coordinate initiatives, programmes, and funding related to green and sustainable housing and construction, as well as the creation of cooperatives to facilitate access to funds of sustainable and smart housing and construction.	200	<p>A monitoring, enforcement and assessment system framework is set to ensure compliance and adherence to sustainability principles in the sector</p> <p>A mechanism is created to coordinate initiatives, programmes, and funding related to green and sustainable housing and construction</p> <p>Number of new cooperatives created to facilitate access to funds for sustainable and smart housing and construction. T: 20</p>	Declaration of Ljubljana calls on public actors to undertake actions in order to promote better renovation in Mediterranean buildings and commits partners of three projects: ELIH-Med, MARIE, and PROFORBIOME D to contribute to creating a new model of multi-level governance for the implementation of policies for energy renovation and renewable energy in buildings; and adopting regional strategies; Covenant of Mayors Initiative	UN HABITAT, UNECE, UNEP/DTIE, UfM, UNEP/MAP

Operational Objective 4.3: Sensitize and raise awareness of all stakeholders involved in urban planning, housing and construction, including consumers, professionals of the sectors and institutions and develop capacities for mainstreaming sustainable urban development						
44	Provide an institutional set up that ensures public participation, involvement of relevant stakeholders (including the private sector and civil society), transparency, accountability, collaboration and coordination between various government entities and between the public and private sector - through Public-Private-Partnership (PPP) - , exchange of information on BATs and BPs on sustainable physical and urban development, and green housing design and construction.	Develop guidelines outlining different approaches based on BEPs for effective public participation and disseminate them through capacity building programmes.	100	Number of countries where the guidelines are published and disseminated. BL: 0 / T: 20 Number of countries that benefit from capacity building programmes. BL: 0 / T: 20		UN HABITAT, UNECE, UNEP/DTIE, UNEP/MAP
45	Prepare communication packages specifically targeting relevant stakeholders, including policy and decision makers, the general public, academia, Civil Society Organisations, businesses, builders and contractors, clearly identifying the benefits of adopting SCP patterns in green and sustainable housing design, construction, energy efficiency and sustainable urban planning.	Develop and disseminate, for adaptation at the national level, a communication and outreach package for different stakeholders.	150	Number of communication packages targeting relevant stakeholders developed and published Number of countries that have adapted and implemented the communication packages to enhance awareness on the benefits of adopting SCP patterns in the housing and construction sector. BL: 0 / T: 15		UN HABITAT, UNECE, UNEP/DTIE, UfM, UNEP/MAP

46	Build capacities, educate and sensitize professionals, consumers, policy makers, and the public on concepts and tools that support the transition towards sustainable planning, housing and construction, such as integrated assessment, life cycle assessment, green economy, and circular economy.	<p>Formulate and initiate the implementation of a programme integrating capacity building, education, research and technology development in the region to support the transition towards sustainable planning, housing and construction.</p> <p>Create a forum for the exchange of experience, expertise, and innovative approaches and technologies for energy efficiency and the use of renewable sources of energy in the building and construction sector.</p> <p>Development of a common Mediterranean research programme on energy consumption behaviors.</p>	1,000 500	<p>Number of relevant stakeholders that have increased their capacities on sustainable housing and construction. T: 45 Participation rate in the forum for the exchange of experience, expertise, and innovative approaches and technologies for energy efficiency and the use of renewable sources of energy in the building and construction sector</p> <p>Publication of Mediterranean research programme on energy consumption behaviors by the end of 2018</p>	MARIE – Build a new Energy Renovation Strategy around the Mediterranean. www.marie-medstrategic.eu	UN HABITAT, UNECE, ILO, UNESCO, UNEP/DTIE, UfM, UNEP/MAP
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N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
ACTIONS APPLICABLE TO ALL PRIORITY AREAS						
47	Enable the policy and regulatory conditions for mainstreaming SCP in national development policies.	<p>Study and identify the appropriate legislation items in EU / regional / national legislation in which appropriate wording needs to be introduced to ensure SCP mainstreaming.</p> <p>Work with Civil Society to drive the message in EU / regional / national legislation to secure SCP is mainstreamed in legal background.</p>	<p>National / Regional Study 20</p> <p>National studies 15 (x countries)</p>	<p>EU / Regional study completed by end 2017</p> <p>National studies completed by end 2017</p> <p>Campaign launched to promote changes in EU/Regional/National (at least EU & 5 non-EU countries) legislation</p>		SCP/RAC
48	Establish financial mechanisms facilitating the implementation of SCP solutions.	<p>Catalyse a partnership of regional/national development institutions to propose a common platform of financing mechanisms promoting SCP in the Mediterranean region.</p> <p>Develop a joint guide of the partnership to provide decision-makers and entrepreneurs with easier access to SCP financing, including practical methodology for development of activities and criteria.</p>	<p>Policy work and contacts with the agencies 50</p>	<p>Coalition/partnership is established by end of 2017</p> <p>Guide is developed and distributed/online by end of 2018</p> <p>At least €500M are pledged by participating agencies for SCP actions in the Mediterranean for the period 2018-2027</p>		<p>SCP/RAC and UfM (leading)</p> <p>EU DevCo EIB EBRD GiZ AFD National organizations DG DevCo</p>
49	Ensure the exchange of knowledge and information on SCP and the upscaling of successful SCP solutions.	<p>Upscale and extend the SCP/RAC - SwitchMed website and develop a web reference also using social media for all SCP matters in the Mediterranean.</p> <p>Design and implement dissemination and information campaign on SCP in the region.</p>	<p>Website and social media outreach 20</p> <p>Campaign design 15</p> <p>Kick-off of</p>	<p>SCP/RAC – SwitchMed website becomes a reference for SCP in the Mediterranean by 2016.</p> <p>A campaign is designed by mid-2016, and starts immediately implementation also attracting funds and support from all key partners</p>		SCP/RAC

N°	Actions	Proposed regional activities (2021)	Estimated cost (thousand €) (2021)	Progress indicators including baseline (BL) and Target (T) by 2021	Related flagship initiatives	Key Partners
			campaign 100			
50	Create and develop new business models integrating SCP approach as business strategy.	Propose the creation of appropriate SCP Business Councils in the key sectors of the Action Plan with the participation of business representatives at regional and national levels, to study, propose and promote integration of SCP in respective sectors.	Seed funding to mobilize industry participation 30	Four SCP Business Councils established by the end of 2016		SCP/RAC
51	Promote the generation and upscaling of civil society led initiatives promoting SCP.	Involve Civil Society in Regional and National level campaigning for mainstreaming SCP in legislation Involve Civil Society in the design and implementation of the campaign		A campaign is designed by mid-2016, with immediate implementation, as well as attracting funds and support from all key partners		SCP/RAC

Appendix 2
Definition of Terms

For the purpose of this Action Plan:

A Circular Economy is an economy that balances economic development with environmental and resource conservation. It puts emphasis on environmental protection and the most efficient use of and recycling of resources. A Circular Economy features low consumption of energy, low emission of pollutants and high efficiency. It involves applying Cleaner Production in companies, eco-industrial park development and integrated resource-based planning for development in industry, agriculture and urban areas (UNEP).

Cradle to Cradle promotes the principle that products can be designed from the outset so that, after their useful lives, they will provide nourishment for something new. This could be either as a biological nutrient that will easily re-enter the water or soil without depositing synthetic materials and toxins or as technical nutrients that will continually circulate as pure and valuable material within a closed loop industrial cycle (William McDonough & Michael Braungart).

Eco-design aims at reducing the environmental impact of products (including energy consumption) throughout their entire life cycle (European Commission).

Eco-innovation provides a win-win solution to improving economic competitiveness and sustainability as it starts at the company strategy level and extends influence beyond the company gates to the supply chain. Eco-innovation aims at reducing impacts on the environment, enhancing resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources. The growing market, reputational and regulatory pressures in response to rising resource scarcity and environmental degradation reinforce therefore the business case for eco-innovation (UNEP)

Eco-labelling is a voluntary method of environmental performance certification and labelling that is practised around the world. An "ecolabel" is a label which identifies overall, proven environmental preference of a product or service within a specific product/service category (Global Ecolabelling Network).

Ecological Footprint is a measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices. The ecological footprint is usually measured in global hectares (a common unit that encompasses the average productivity of all the biologically productive land and sea area in the world in a given year). Because trade is global, an individual or country's footprint includes land or sea from all over the world (Global Footprint Network)

Electronic Waste / E-waste/ Waste Electrical and Electronic Equipment (WEEE) is a generic term encompassing various forms of electrical and electronic equipment that are old, end-of-life appliances and have ceased to be of any value to their owners. A practical definition of e-waste is "any electrically powered appliance that fails to satisfy the current owner for its originally intended purpose" (UNEP/DTIE).

An Environmental Management System (EMS) is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency (United States Environmental Protection Agency). The most widely used standard on which an EMS is based is International Organization for Standardization (ISO) 14001, alternatives include the EMAS.

Extended Producer Responsibility means that the producers take responsibility for their products from cradle to grave, and therefore, should develop products that have improved performance throughout all stages of the product life cycle. At each stage of the life cycle, opportunities for improved performance exist (UNEP Life Cycle Initiative).

Good Agricultural Practices are "practices that address environmental, economic and social sustainability for on-farm processes, and result in safe and quality food and non-food agricultural products" (FAO COAG).

Goods are a commodity, or a physical, tangible item that satisfies some human want or need. Goods are tangible objects, like bread or books, whereas services are intangibles, like TV broadcasting or teaching (Business Dictionary).

Green building focuses on ecological aspects. It is designed, specified and constructed with energy and water efficiency in mind, and minimising any adverse impact of the building on its inhabitants as well as the environment (Global expert working group of the Marrakech Task Force on Sustainable Buildings and Construction).

A Green entrepreneur (i) is a visionary who integrates environmental, economic and social axis in core business; (ii) Provides innovative solutions to the way good and services are produced and consumed; (iii) Proposes a business model whose scaling-up contributes to the transition towards green and circular economies; (iv) Identifies challenges and market opportunities based on new citizens' needs such as the spreading of collaborative consumption model; (v) Facilitates a shift to sustainable consumption patterns and lifestyles (SCP/RAC).

Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms (FAO).

An integrated product policy is an approach that begins by asking how the environmental performance of products can be improved most cost-effectively. It is founded on the consideration of the impacts of products throughout their life-cycle, from the natural resources from which they come, through their use and marketing, to their eventual disposal as waste. It is also a relatively new approach to environmental Policy (EEA).

A Life cycle approach reflects the incorporation of life cycle thinking Approach/ in decision-making or development processes.

The **Life Cycle Assessment (LCA)** is a tool to evaluate the environmental Assessment and social performance of products or services along their life (LCA) cycle.

Life cycle management (LCM) is a product management system aimed at minimising the environmental and socio-economic burdens associated with an organisation's product or product portfolio during its entire life cycle and value chain. LCM supports the business assimilation of product policies adopted by governments. This is done by making life cycle approaches operational and through the continuous improvement of product systems (UNEP/SETAC Life Cycle Initiative).

Life cycle thinking expands the traditional focus on the production site and manufacturing processes and incorporates various aspects over a product's entire life cycle from cradle to cradle (i.e. from the extraction of resources, through the manufacture and use of the product, to the final processing of the disposed product) (UNEP/SETAC Life Cycle Initiative).

Market-based instruments seek to address the market failure of "environmental externalities" either by incorporating the external cost of production or consumption activities through taxes or charges on processes or products, or by creating property rights and facilitating the establishment of a proxy market for the use of environmental services (OECD).

Material Flow Analysis (MFA): in order to function, the global economy depends on a flow of materials that are extracted from the earth, processed via production and consumption processes to meet human needs, and then disbursed as wastes generated by the extraction, production and consumption processes. The most important materials extracted for use are biomass, fossil fuels, ores, industrial minerals and construction minerals. These material flows, which are referred to as the metabolic rate, are measured in tonnes per capita or per unit of GDP (tonnes/\$1 billion of GDP). Material Flow Analysis (MFA) is the methodology or accounting framework that has emerged to calculate these material flows (International Panel on Sustainable Resource Management United Nations).

Mediterranean diet: Inscribed in 2013 (8.COM) on the Representative List of the Intangible Cultural Heritage of Humanity, it involves a set of skills, knowledge, rituals, symbols and traditions concerning crops, harvesting, fishing, animal husbandry, conservation, processing, cooking, and particularly the sharing and consumption of food. Eating together is the foundation of the cultural identity and continuity of communities throughout the Mediterranean basin. It is a moment of social exchange and communication, an affirmation and renewal of family, group or community identity. The Mediterranean diet emphasizes values of hospitality, neighbourliness, intercultural dialogue and creativity, and a way of life guided by respect for diversity. It plays a vital role in cultural spaces, festivals and celebrations, bringing together people of all ages, conditions and social classes. It includes the craftsmanship and production of traditional receptacles for the transport, preservation and consumption of food, including ceramic plates and glasses. Women play an important role in transmitting knowledge of the Mediterranean diet: they safeguard its techniques, respect seasonal rhythms and festive events, and transmit the values of the element to new generations. Markets also play a key role as spaces for cultivating and transmitting the Mediterranean diet during the daily practice of exchange, agreement and mutual respect. (UNESCO)

Planned obsolescence is a business strategy in which the obsolescence (the process of becoming obsolete—that is, unfashionable or no longer usable) of a product is planned and built into it from its conception. This is done so that in future the consumer feels a need to purchase new products and services that the manufacturer brings out as replacements for the old ones (The Economist).

Products, also called “goods and services”, are the result of production. They are exchanged and used for various purposes: as inputs in the production of other goods and services, for final consumption or for investment (Encyclopaedia of the Earth).

A Product-Service System (Servicizing) can be defined as the result of an innovation strategy, shifting the business focus from designing and selling physical products only, to selling a system of products and services which are jointly capable of fulfilling specific client demands (UNEP/DTIE).

Resource efficiency is about ensuring that natural resources are produced, processed, and consumed in a more sustainable way, reducing the environmental impact from the consumption and production of products over their full life cycles. By producing more wellbeing with less material consumption, resource efficiency enhances the means to meet human needs while respecting the ecological carrying capacity of the earth (UNEP/DTIE).

A Retailer is anything and anybody that sells individual units or small quantities directly to the end-user for their personal use and consumption is a retailer. The sector also includes manufacturers who sell directly to end-customers via retail outlets (often franchised, like car manufacturers), and other channels such as mail order, TV channel shopping, or via the internet. Due to its unique position linking production (manufacturers/suppliers) and consumption (customers) aspects, the retail sector plays a key role in facilitating the shift towards sustainable consumption and production. Upstream, retailers can define environmentally oriented purchasing requirements to their suppliers. Downstream, they can educate consumers about sustainability issues. In addition to providing information on products produced in a sustainable manner, retailers are also well positioned to provide information on improving life-cycle impacts, for instance respecting the use-phase and end-of-life disposal of products. Moreover, this sector is a major driver for the global economy and employment (UNEP/DTIE).

Social innovations are innovations that are social in both their ends and their means – new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations. They are innovations that are not only good for society but also enhance society’s capacity to act. Social innovations take place across boundaries between the public sector, the private sector, the third sector and the household (European Commission).

Sustainability driven innovation: ‘the creation of new market space, products and services or processes driven by social, environmental or sustainability issues’ (Arthur D. Little, 2004). As with general innovation, there is an emerging recognition that sustainable innovation is not just about new concepts but is about commercialisation of technologies, products and services and about entrepreneurship. It can also be about the adoption of new processes and systems at societal level. Sustainable innovation is a process where sustainability considerations (environmental, social, financial) are integrated into company systems from idea generation through to research and

development (R&D) and commercialisation. This applies to products, services and technologies, as well as new business and organisation models (Charter, 2007).

Sustainable agriculture ensures that the basic nutritional requirements of present and future generations are met, while providing a range of economic, social and environmental benefits. It provides durable employment, sufficient income, and decent living and working conditions for all those engaged in agricultural production. It maintains and, where possible, enhances the productive capacity of the natural resource base as a whole, and the regenerative capacity of renewable resources, without disrupting the functioning of basic ecological cycles and natural balances, destroying the socio-cultural attributes of rural communities, or causing contamination of the environment (FAO).

Sustainable Buildings and Construction, the concept refers to the Buildings and sustainability performance of buildings along their entire life cycle, Construction including design, materials production, transport, construction, use and maintenance, renovation, deconstruction and recycling. The concept seeks to optimise the performance and reduce negative impacts with regard to use of materials, energy, water and land, as well as to indoor air quality and comfort, and generation of waste, wastewater and air emissions, including greenhouse gases, particulates and other pollutants. The concept applies to new and existing buildings regardless of their location (UNEP/DTIE).

A Sustainable product is a product that incorporates environmental and social factors and minimises its impact throughout the life cycle, throughout the supply chain and with respect to the socio-economic surroundings (UNEP/Wuppertal Institute Collaborating Centre on SCP).

Sustainable Procurement is a process whereby [public and private]organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment.

Sustainable Procurement seeks to achieve the appropriate balance between the three pillars of sustainable development i.e. economic, social and environmental (adapted from UK Sustainable Procurement Task Force).

Sustainable tourism (i) makes optimal use of environmental resources that constitute, a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity; (ii) Respects the socio-cultural authenticity of host communities, conserves their built and living cultural heritage and traditional values and contributes to inter-cultural understanding and tolerance; (iii) Ensures viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed. These include stable employment and income-earning opportunities, social services to host communities, and contributing to poverty alleviation (United Nations World Tourism Organisation)

Tourism Carrying Capacity is defined as the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction (World Tourism Organisation)

Draft Decision IG.22/6

**Regional Climate Change Adaptation
Framework for the Mediterranean Marine and Coastal Areas**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as the Barcelona Convention,

Recalling the Protocol on Integrated Coastal Zone Management in the Mediterranean and especially its provisions on the protection of the coastal zone, of related economic activities and of specific coastal ecosystems, on the prevention and response to natural hazards and on the prevention and mitigation of the effects of coastal erosion;

Welcoming the emphasis given in the Mediterranean Strategy for Sustainable Development 2016-2025 to climate change as a priority issue for the Region;

[Recalling that the 13th Meeting of the Mediterranean Commission on Sustainable Development (Cairo, 2009) encouraged “the development of an action oriented regional approach for adaptation” and called on Contracting Parties “to implement adaptation measures on an urgent basis with the view to strengthening the resilience of the Mediterranean region in the face of climate change”];

Recalling the Marrakesh Declaration (Marrakesh, Morocco, November 2009) by which the Parties agreed to “Promote Mediterranean cooperation to combat the effects of climate change in the region and enhance the institutional mechanisms” and to “Implement effective coordination to ensure the integration of climate change issues into development policies with the aim of achieving the Millennium Development Goals and the objectives of the MSSD, and ensure the strengthening of cooperation for the sharing of experience in the field of surveillance (early-warning systems) and the development and implementation of adaptation and risk-management strategies”;

Recalling the declaration of the UfM Ministerial meeting on Environment and CC made in Athens on 13 May 2014, herein after the “Athens Ministerial Declaration”;

Welcoming the outcome of the 21st CoP of the UNFCCC;

[Recalling the Decision IG.21/17 on Programme of Work and Budget of COP 18 (Istanbul, Turkey, December 2013), which includes the target “Climate Change Adaptation Framework prepared by the Secretariat, reviewed by MCSD and submitted for consideration by COP19” (Expected result 1.2.7);]

Engaged to contribute to the development of appropriate and integrated plans for coastal zone management pursuant to Article 4, paragraph 1(e), of the United Nations Framework Convention on Climate Change;

Concerned about the findings of the 5th Assessment Report of the Intergovernmental Panel on Climate Change;

Aware that the environmental and socioeconomic systems of the Mediterranean marine and coastal zones are threatened by multiple climate change-related risks and that increasing their resilience to the effects of climate change is crucial to their sustainable development;

Having considered the report of the 16th Meeting of the MCSD (Marrakesh, Morocco, June 2015), which acknowledged the quality and the relevance of the draft Regional Climate Change Adaptation Framework, and recognized its importance and the need for such an instrument;

[Adopts the Regional Climate Change Adaptation Framework (herein after referred to as “the Framework”), contained in the Annex to this decision;

Urges the Contracting Parties to take into account and address the Framework’s objectives and priority fields where action should be taken in their national climate change adaptation strategies and plans;

Urges the Contracting Parties to further discuss on how to translate the priorities identified in the Framework into actions coherently with the existing and new strategic instruments of the MAP system;

Encourages all relevant intergovernmental organizations, donor agencies, industry, non-governmental organizations and academic institutions to address the priority fields of action identified in the Framework by providing sufficient support, including funding as appropriate;

Requests the Secretariat to programme and implement actions within its mandate and align the implementation of the Framework with MSSD, relevant Protocols of the Barcelona Convention, and MAP strategies and action plans;

Requests the Secretariat to identify and mobilize external resources to support Contracting Parties in enhancing their capacity and effectively face the challenges of climate change adaptation in the marine and coastal environment.]

ANNEX

Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas

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List of Abbreviations

EcAp	Ecosystem Approach
EEA	European Environment Agency
GCOS	Global Climate Observing System
GEF	Global Environment Facility
GLOSS	Global Sea-Level Observing System
ICZM	Integrated Coastal Zone Management
IPCC	Intergovernmental Panel on Climate Change
JRC	Joint Research Centre
LAS	League of Arab States
MAP	Mediterranean Action Plan
MCSO	Mediterranean Commission on Sustainable Development
MedGOOS	Mediterranean Global Ocean Observing System
MOON	Mediterranean Operational Oceanography Network
MSSD	Mediterranean Strategy for Sustainable Development
PoW	Program of Work
RCP	Representative Concentration Pathways
SREX	IPCC’s Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
UfM	Union for the Mediterranean
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

Glossary of Terms

Adaptation¹:	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.
Climate change	Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use.
Climate variability¹:	Climate variability refers to variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability).
Disaster risk management¹:	Processes for designing, implementing, and evaluating strategies, policies, and measures to improve the understanding of disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, and sustainable development.
Ecosystem Approach	A strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. An ecosystem approach is based on the application of appropriate scientific methods, focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems
Exposure¹:	The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.
Hazard¹:	The potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources.
Integrated coastal zone management (ICZM)²:	A dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts.
Impacts¹:	Effects on natural and human systems of extreme weather and climate events and of climate change. Impacts generally refer to effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system.

¹ IPCC, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.*

² Protocol on Integrated Coastal Zone Management in the Mediterranean.

Low regret measures	Low cost activities that yield benefits even in the absence of climate change. The implementation of these actions often constitutes a very efficient first step in a long-term adaptation strategy
Maladaptation¹	Actions that may lead to increased risk of adverse climate-related outcomes, increased vulnerability to climate change, or diminished welfare, now or in the future.
Resilience¹:	The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.
Risk¹:	The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. Risk is often represented as probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard, following the IPCC AR5 WGII (2014).
Vulnerability¹:	The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

INTRODUCTION

Purpose and scope of the Framework

1. The development of the Framework is guided by the following vision:

By 2025 the Marine and Coastal Areas of the Mediterranean countries and their communities have increased their resilience to the adverse impacts of climate variability and change, in the context of Sustainable Development. This is achieved through common objectives, cooperation, solidarity, equity and participatory governance.

2. The Mediterranean has long been identified as a global climate change hotspot. Currently, responses to climate-related pressures and hazards are often limited to short-term and reactive local emergency measures. However, building environmental and socioeconomic resilience against climate change at the regional level is about pro-active, longer term and integrated planning that addresses the root causes of vulnerability and guides the economic development of the region in a more sustainable direction. The Mediterranean countries need to turn the challenges they face under a changing climate into opportunities to increase their resilience by addressing the reasons that have so far led many environmental parameters into almost critical status.
3. Climate risks extend well past territorial boundaries, and therefore so do the necessary measures to address them. A cross-border collaborative and coordinated approach to adaptation is in line with the UNFCCC's National Adaptation Plan process which among others urges countries to promote "*coordination and synergy at the regional level and with other multilateral environmental agreements*"³ and additionally with the EU Strategy on Adaptation to Climate Change, which encourages EU countries to "*establish contact with neighbouring countries to inform about the adaptation process and areas of concern with regard to cross-border impacts and identify approaches for coordination over different political, legal and institutional settings*"⁴.
4. The overall aim of the Framework is to provide a regional approach in coordinating and assisting policy makers and stakeholders at all levels across the Mediterranean in order to increase the resilience of the Mediterranean marine and coastal natural and socioeconomic systems to the impacts of climate change by identifying objectives and priority fields for action that:
 - promote the right enabling environment for mainstreaming adaptation in national and local planning;
 - promote and exchange best practices and low-regret measures;
 - promote leveraging of necessary funding; and
 - exchange and access best available data, knowledge, assessments and tools on adaptation,.
5. Its focus, coherently with the legal framework set by the Protocols of the Barcelona Convention, is on the marine and coastal environments of the Mediterranean. The geographical scope of the Framework is that of the Barcelona Convention, that is the Mediterranean Sea and the coastal zones of the 21 countries that border it. The Framework recognizes that climatic changes will have impacts that do not respect the boundaries of a coastal zone as it is usually defined and that coastal adaptation actions may be required further inland, in particular in inland watersheds.
6. The time scale of the Framework is in line with the MSSD 2.0, that is 2016-2025.
7. The Framework is structured around four Strategic Objectives. Each Strategic Objective includes separate Operational Objectives and suggested priority fields for action for their realization.

³UNFCCC Secretariat, Technical guidelines for the national adaptation plan process, December 2012.

⁴European Commission, Guidelines on developing adaptation strategies, April 2013.

8. UNEP/MAP Secretariat has prepared in parallel an analysis of the Protocols and the strategic instruments under the MAP system, and of how the Framework's objectives could be mainstreamed into them. The Framework, together with the results of this analysis, is expected to provide the basis for considering the need and appropriateness of a Regional Action Plan on Adaptation, which could inter alia describe in more detail steps and requirements for stakeholders' involvement, a plan for implementation of activities and actions at the regional and national levels, as well as a monitoring and evaluation plan.

Background – The Mediterranean Changing Climate

9. Climate change poses significant challenges to the Mediterranean countries and is expected to worsen already acute situations present in the region. Essential resources like fresh water, soil, agricultural production and fish provisions may become endangered while coastal communities, ecosystems and infrastructure will be challenged by increased physical risks. More importantly, human lives may become endangered, health risks increased and even stability compromised in a changing climate. A Mediterranean-wide response to these risks should reduce the vulnerability and exposure of the society and the ecosystems to climate-related hazards, and increase the overall resilience of the Mediterranean marine and coastal areas.

The Region's climate is already changing

10. Climate variability and change is becoming increasingly evident in the Mediterranean. According to observations and studies referenced in the recent IPCC Fifth Assessment Report (AR5)⁵ and in IPCC's SREX Report⁶, in recent decades, summer heat waves' intensity, number, and length have increased alongside extreme precipitation events and soil dryness. Major increases have been observed in warm temperature extremes. The shallow waters of the Mediterranean Sea have already warmed by almost 1°C since the 1980s. Trends of decreasing precipitation and discharge indicate a trend toward increased freshwater deficits. The Mediterranean also exhibits variability regarding the observed sea level rise. According to the latest EEA indicators assessment⁷, in the Mediterranean Sea there are areas with increases of more than 6 mm/year, and with decreases of more than -4 mm/year.

Projections for the future

11. The IPCC AR5 considers the Mediterranean Region as “*highly vulnerable to climate change*” and states that it “*will suffer multiple stresses and systemic failures due to climate changes*”. Different sub-regions of the Mediterranean will witness different changes to their climate. On average however for the whole Region, estimates mentioned in the IPCC AR5 for the medium-low emissions scenario (RCP 4.5) and for the period 2081-2100 compared to 1986-2005 include an increase in surface mean air temperature of 2-4°C, 10-20% decreases in mean annual precipitation, increased risk of desertification, soil degradation, an increase in duration and intensity of droughts, summer heat-waves and heavy precipitation events, changes in species composition, increase of alien species, habitat losses and agricultural and forests production losses.
12. Sea level rise in the Mediterranean Sea involves local as well as global contributions. Thus multi-decadal regional projections involve larger uncertainties than those for the global ocean. A rise of 0.4-0.5m is projected for most of the Mediterranean under IPCC AR5's medium-low emission scenario RCP 4.5. The effect of sea level rise due to global warming is more important in most of

⁵ Working Group I Contribution to the 5th IPCC Assessment Report, Climate Change 2013 - The Physical Science Basis, <http://www.ipcc.ch/report/ar5/wg1/>

⁶ IPCC, 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change

⁷ European Environment Agency, Global and European sea-level rise (CLIM 012) - Assessment published Sep 2014 <http://www.eea.europa.eu/data-and-maps/indicators/sea-level-rise-2/assessment>

the Mediterranean Sea where, due to the small tidal range, coastal infrastructure and coastal communities are located closer to mean sea level. In addition, vertical land movements caused by tectonic as well as other causes pose additional risks for such areas.

Overview of expected climate change-related risks

13. Climate change is expected to apply additional stresses on ecosystems and socioeconomic sectors and systems by modifying land degradation rates and the recurrence of droughts, floods and other extreme climate events, as well as through changes in temperatures, in the precipitation regime and in the level as well as the acidity of the sea.

14. *Environmental systems*: The Mediterranean region is among the richest in biodiversity of global importance. However, many of its ecosystems have already been weakened by pollution, overexploitation, fragmentation of habitats, and biological invasions. Such stresses are expected to be amplified under climate change. The composition of most of the present marine and coastal ecosystems will probably change and there will be a greater risk of extinction of species especially those with a restricted climatic distribution, those that need highly specific habitats and/or those small populations which are naturally more vulnerable to modifications in their habitats. Climate change is also expected to amplify biological invasions and proliferation of pathogens and diseases, fostered by the rise in temperature of the marine waters⁸. At the same time, sea acidification is currently occurring at an unprecedented rate, subjecting some marine organisms to an additional, and worsening, environmental stress⁹. Warming and reduced rainfall is expected to lead to a decrease in trees and plant growth while annual burned area due to forest and wildland fires is projected to significantly increase in many areas bordering the Mediterranean Sea. The region's coastal systems and low-lying areas would be subject to submergence and erosion due to increased sea-level rise and sea flood surges. Coastal aquifers, already overexploited, would become increasingly threatened by salt water intrusion due to rising sea levels and/or over-extraction.

15. *Socioeconomic systems*: The region's water resources are already subject to various interacting pressures such as rapid population growth, urbanization, tourism, alongside environmental degradation. These stresses would be multiplied under climate change because of projected declines in precipitation and runoff, and depletion of groundwater resources. Agriculture in the coastal zones will be affected by increased temperatures and land degradation, and reduced water availability, with significant decreases in some crop yields which could reach alarming levels under high emissions scenarios, threatening food security especially for poor communities. Changes in the geographical distribution of wild fish stocks can lead to possible decreased catch potential for some species. Climate change can also influence where aquaculture is possible, which species are raised, and the efficiency of the production. The coastal zones, which face high risks due to sea-level rise, host most of one third of the world tourism that visit Mediterranean countries. The crucial tourism industry could face negative consequences due to possible loss of beaches, natural attractions and tourism infrastructure, especially during the summer months because of heat waves, drought and the associated risk of fires. However, impacts on the sector will not be uniform across the region and occupancy rates may increase during spring and autumn. Urban communities will be affected in terms of heat stress, water security and quality, sea-level rise, storm surges and inland flooding. Wastewater systems and transport infrastructure will also be affected by sea level rise. Energy transmission infrastructure could be at risk; changes in water availability will affect hydropower generation and may lead to increased deployment of energy-intensive desalination options. Higher temperatures will increase the overall and peak demand for cooling in the summer months but at the same time reduce heating demand during the winter. Possible population movements or frictions regarding access to natural resources could bring additional stresses on the region's already fragile stability.

⁸UNEP-MAP-RAC/SPA, 2010. Impact of climate change on marine and coastal biodiversity in the Mediterranean Sea: Current state of knowledge

⁹Mediterranean Sea Acidification in a changing climate (MedSeA) Project

16. *Public health*: The overall health effects of a changing climate in the Mediterranean are likely to be negative. Extreme high air temperatures contribute directly (through heat stress) and indirectly (through raised levels of ozone and other secondary pollutants) to an increase of the number of heat-related illnesses and deaths from cardiovascular and respiratory disease, particularly among elderly people, but also children, people with medical conditions, and the poor. Extreme heat also raises pollen and other aeroallergen levels which trigger asthma. Rising sea levels and increasingly extreme weather events may destroy homes, medical facilities and other essential services therefore increasing risks to public health. Lack of safe water can compromise hygiene and increase the risk of diarrheal disease while floods can contaminate freshwater supplies, heighten the risk of water-borne diseases, and create breeding grounds for disease-carrying insects, threatening especially those with already limited access to water and sanitation. Decrease in the production of staple foods will increase the prevalence of malnutrition and under nutrition and food insecurity in general, especially among those on low incomes. Finally, changes in the climate are likely to lengthen the transmission seasons of important vector-borne diseases and to alter their geographic range, while some toxic marine species could expand their distribution range.

Other Relevant Policy and Institutional Frameworks and Initiatives

17. Alongside the activities ongoing under the auspices of UNEP/MAP-Barcelona Convention in relation to climate change adaptation, there exist various other regional initiatives, with which cooperation will be anecessity. For the purpose of this document, we mention the following ones.

18. The European Commission adopted in April 2013 the EU Strategy on Adaptation to Climate Change which identifies three priority areas: 1. Promoting action by Member States, through encouraging the adoption of comprehensive adaptation strategies and providing funding to help them build up their adaptation capacities. 2. 'Climate-proofing' action by further promoting adaptation in key vulnerable sectors and ensuring that Europe's infrastructure is made more resilient, and 3. Better informed decision-making by addressing gaps in knowledge about adaptation. The Commission states that priority will be given to adaptation flagship projects that address key cross-sectoral, trans-regional and/or cross-border issues. In order to support the development and implementation of climate change adaptation strategies and actions in Europe, the European Climate Adaptation Platform Climate-ADAPT¹⁰ has been launched since 2013.

19. The Union for the Mediterranean is a multilateral partnership created in July 2008, consisting of the 28 member states of the EU and 15 other Mediterranean partner countries. Its climate-related policy framework provides for the development of regional policy and action frameworks and projects in response to climate change challenges. The decisions of the UfM Ministerial Conference on Environment and Climate Change (13 May 2014, Athens) aim at enhancing coherence of and promoting joint action within a Mediterranean climate change agenda. In that context, the UfM Climate Change Expert Group and the UfM Working Group for Environment and Climate Change were established.

20. The Arab Framework Action Plan on Climate Change, 2010-2020 which was elaborated in the League of Arab States (LAS) framework, aims at enhancing the Arab countries' capacity to take appropriate measures for addressing climate change issues while achieving sustainable development targets and MDGs in the Arab Region. Its adaptation focus is on:

- Vulnerability assessments of climate change impacts on economic and social development;
- Adaptation strategies in a range of sectors;
- Preparation and implementation of strategies for disaster risk reduction.

Linkages have been secured with other relevant LAS strategies such as the Arab Strategy for Disaster Risk Reduction 2020 and the Arab Water Security Strategy 2010-2030.

¹⁰<http://climate-adapt.eea.europa.eu>

THE FRAMEWORK'S OBJECTIVES AND PRIORITY FIELDS FOR ACTION

21. The Framework is structured around four Strategic Objectives, each of them identifying several Operational Objectives with relevant priority fields where action should be taken. The Strategic and Operational Objectives are presented below and elaborated in the following section:

1. *Promote appropriate institutional and policy frameworks, increase awareness and stakeholder engagement and enhance capacity building and cooperation;*
 - 1.1. *To enhance awareness and engagement of key stakeholders on climate adaptation*
 - 1.2. *To enhance adequate institutional and policy frameworks*
 - 1.3. *To promote a regional approach on Disaster Risk Management*
 - 1.4. *To improve the implementation and effectiveness of adaptation policies through monitoring and reviewing progress*
2. *Identify, assess and implement best practices (including low regret measures) for effective and sustainable adaptation to climate change impacts.*
 - 2.1. *To identify adaptation needs and best practices*
 - 2.2. *To mainstream and adopt best practices*
3. *Leverage existing and emerging finance mechanisms relevant to climate change adaptation, including international and domestic instruments*
 - 3.1. *To overview and prioritize public spending relative to climate adaptation and mobilize national sources of climate finance*
 - 3.2. *To support access to international financing*
 - 3.3. *To promote and build alliances with banking and insurance sector*
4. *Better informed decision-making through research and scientific cooperation and improved availability and use of reliable data, information and tools.*
 - 4.1. *To enhance the understanding of the vulnerability of natural and socioeconomic systems and sectors and of possible impacts*
 - 4.2. *To build capacities for and promote use of vulnerability and risk assessment at regional to local levels*
 - 4.3. *To strengthen science-policy interface by channeling and making accessible adaptation related knowledge*
 - 4.4. *To strengthen regional climate information at a resolution suitable for adaptation planning*

Strategic Objective 1: Promote appropriate institutional and policy frameworks, increase awareness and stakeholder engagement and enhance capacity building and cooperation
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22. Climate change and its impacts are placing Mediterranean stakeholders in the position that requires maximum coordination, harmonization and integration of different sectoral policies. In order to reach results, institutional capacities, relationships, policies and practices to assess and manage climate change risks and opportunities and national development goals must be strengthened. Coordination within and between national institutions on climate change adaptation in the coastal and marine areas is a necessary prerequisite to create an enabling environment for the formulation and implementation of efficient solutions to such a complex and cross-cutting problem

Operational Objective 1.1: To enhance awareness and engagement of key stakeholders on climate adaptation

23. Public support and engagement is essential for the acceptance and implementation of adaptation activities. This will require an appreciation of the importance of the issues involved and the potential costs of inaction. Improving awareness on climate change, its impacts and adaptation options is something that must also permeate education, the business sector and local authorities.

Building awareness on the adaptation needs is a slow and complex process which requires immediate, sustained and well-resourced action. Competent civil society actors are valuable partners in this effort

24. In this context, priority fields where action should be taken include:

- i. Cross-party political interest, support and commitment.
- ii. Integrated awareness campaigns addressed to the general public, public bodies and the private sector, communicating a consistent and effective message about climate change risks and adaptation options.
- iii. Targeted awareness campaigns tailored for specific audiences, sectors or circumstances aiming to integrate adaptation measures in a most efficient way.
- iv. E-learning and massive open online course (MOOC) programmes on climate change impacts in the Mediterranean.
- v. Involvement of networks and organizations of stakeholders (including local authorities, civil society institutions, farmers, fishermen, tourism managers and coastal and marine protected areas managers) in order to promote awareness raising, provide salient information and enhance their ability to respond to hazard events.
- vi. Support to and involvement of journalists including through the establishment of a central information e-desk for the provision and communication of relevant information.

Operational Objective 1.2: To enhance adequate institutional and policy frameworks

25. Planning for adaptation to climate change and increased resilience to its impacts should not be considered as a separate policy field, disconnected from other aspects of sustainable development, but should rather be integrated across development and economic strategies and plans. Support is required to develop the countries' capacities to use the available knowledge base in the decision making processes and access the right tools.

26. In this context, priority fields where action should be taken include:

- i. Regional policy instruments to promote adaptation to the impacts of climate change. Assessment on how the Barcelona Convention can be a tool to assist countries build coastal resilience, and on the future implementation of its protocols and action plans in the light of climate change.
- ii. Identification and addressing of relevant institutional, legal and cultural barriers to adaptation policies, beginning with the transposition of the concepts of "adaptation", "resilience", "vulnerability" and "risk" into legislative procedures.
- iii. Support to countries to develop and adopt comprehensive national adaptation strategies and share them with neighboring countries.
- iv. Support and guidance on best practices and integrated approaches to mainstream climate change considerations in developmental and environmental plans and strategies. Coordination between sectoral plans in order to derive synergies and co-benefits and avoid maladaptation.
- v. Integrated approach for the reduction of non-climate related threats that have a strong influence on risk and undermine the capacities of communities and ecosystems to adapt to climate change (water pollution, overfishing, sand mining, damming)
- vi. Strategic Environmental Assessment, including the assessment of climatic factors and adaptation implications, for all major plans and strategies.
- vii. Risk and Impacts assessment in relation to climate change prior to major infrastructure investments in coastal and marine areas.
- viii. Maritime planning process, taking into account land-sea interactions, including climate change effects.

Operational Objective 1.3: To promote a regional approach on Disaster Risk Management

27. As climate change and socioeconomic trends boost the number of people exposed to hazards such as floods and heatwaves, improved early warning systems and greater coordination of disaster management activities will be needed to manage risks and protect lives and property.

28. In this context, priority fields where action should be taken include:

- i. Integration of regional climate related data into disaster risk management
- ii. Regional and transboundary cooperation and assistance to cope with climate-related extreme events and emergency situations.
- iii. Exchange of best practices on disaster risk management in the region.
- iv. Innovative climate services and products to inform Risk Management, tailored to the needs of key public and private stakeholders.
- v. National and regional contingency plans to handle crisis situations, incorporating environmental, social and economic aspects.

Operational Objective 1.4: To improve the implementation and effectiveness of adaptation policies through monitoring and reviewing progress

29. Appropriate measurement and reporting of the progress towards achieving the objectives of Adaptation policies and plans, at both the national and regional level, is essential for effectiveness, transparency and accountability. It is therefore necessary that adaptation policies are designed as a continuous and flexible process, including feedback through monitoring and evaluation, both in terms of the validity of the underlying scientific assumptions and of the appropriateness and effectiveness of projects and policies.

30. In this context, priority fields where action should be taken include:

- i. New and transparent reporting requirements for the Contracting Parties to the Barcelona Convention on the implementation of climate adaptation policies related to the coastal and the marine environment.
- ii. Identification of responsible institutions for monitoring progress. Adequate monitoring and review mechanisms in place at sectoral and local levels. Availability of good quality relevant data.
- iii. Development of a monitoring and evaluation framework including objectives, benchmarks, indicators and timescales for reviews to take place.
- iv. Dynamic updating and refining of adaptation plans as experience increases and more data on impacts becomes available.

Strategic Objective 2: Identify, assess and implement best practices (including low regret measures) for effective and sustainable adaptation to climate change impacts.

31. Improved knowledge and understanding is essential for more reliable forecasts of future conditions that would guide policy makers. However, uncertainty will remain inherent to adaptation decision making. But there exist low-regret measures with proven effectiveness and practically no negative side effects the implementation of which should not be delayed while waiting for more certain information and knowledge to be available. Many of these low-regret measures produce co-benefits, help address other development goals, and help minimize the scope for maladaptation.

Operational Objective 2.1: To identify adaptation needs and best practices.

32. In the face of identified key climate risks (and opportunities) for a country or a region, decision makers need to focus on the most pressing needs and the best available and most efficient options to manage these risks.

33. Priority fields where action should be taken include:

- i. Identification by countries of their adaptation needs for the coastal and marine environment and of relevant technology needs and inclusion in their National Adaptation Plans.
- ii. Criteria to identify, select and prioritize the most effective adaptation options in the coastal and marine environment.
- iii. Identification and addressing of challenges and constraints for the transfer and adoption of best practices (including low-regret measures) and technologies across the Mediterranean basin.

Operational Objective 2.2: To mainstream and adopt best practices.

34. Priority fields where action should be taken include:

- i. Mainstreaming and implementation of best practices into national adaptation planning processes.
- ii. Maximisation of synergies with relevant mitigation efforts (eg climate smart agriculture and forestry, energy efficiency in buildings, “blue carbon” policies etc) and minimization of possible conflicts.
- iii. Local authorities and communities to implement adaptation actions tailored effectively to localized impacts of climate change including innovative, grass root responses and applying participatory science to monitor progress.
- iv. Ecosystem based Adaptation approaches, the ICZM Protocol and the SAP/BIO as priority policy tools for encouraging adaptation efforts.

Strategic Objective 3: Leverage existing and emerging finance mechanisms relevant to climate change adaptation, including international and domestic instruments

35. In the face of a changing climate and related risks, the cost of inaction can be huge. The measures to increase the resilience of our natural and socioeconomic systems should therefore not be considered as economic costs but rather as investments that are even economically profitable as they reduce risks and expected damages and losses, while at the same time exploiting opportunities towards sustainable development. Even if global emissions are cut to the level required to keep global warming below 2°C thus avoiding the most catastrophic consequences of climate change, the total costs of adaptation could exceed \$250 billion per year by 2050, according to UNEP’s Adaptation Gap Report. Such financial resources should not be expected to come from only one or a few sources. For developing countries, international assistance could be the primary source but mobilizing public and private funds domestically is essential.

Operational Objective 3.1: To overview and prioritize public spending relative to climate adaptation and mobilize national sources of climate finance.

36. Country-led approaches are essential for a strategic allocation of funds to key areas, especially taking into account that national sources are expected to cover most of the costs of adaptation measures. Beyond public resources, the involvement of the private sector which could be essential for the sharing of investments costs, risks, rewards and responsibilities, needs to be fully tapped. Existing and emerging economic instruments can foster adaptation by providing funds as well as incentives for anticipating and reducing impacts. It should be noted that mainstreaming climate-related considerations into sectoral policies would also allow to pursue adaptation objectives partially relying on already available financial resources.

37. In this context, fields where action should be taken include:

- i. Review of the national portfolio of response options in order to efficiently and effectively allocate funds ,e.g. through a Climate Public Expenditure and Institutional Review.
- ii. Economic valuations of the costs of climate change as foundation for governments to allocate national funding on adaptation.
- iii. Avoidance of maladaptive actions and non-efficient “hard” infrastructures to low-regret measures that improve climate resilience.
- iv. Appropriate share of public spending to climate adaptation measures as part of an integrated sustainable development agenda.
- v. Socially sensitive and transparent public-private partnerships for adaptation action encouraging the involvement of the private sector in related schemes.

Operational Objective 3.2: To support access to international financing

38.The Contracting Parties to the UNFCCC have set up a number of funding mechanisms for channeling the international assistance envisaged in the Convention, such as the Adaptation Fund and the Green Climate Fund. Funds have also been set up through multilateral agencies such as the World Bank. On July 2015, UNEP was accredited as a partner institution to the Green Climate Fund, thus opening new opportunities and enhancing capacities for adaptation-related activities.

39.More specifically in the Mediterranean context, international financing for adaptation measures can be available through international banking institutions such as the European Investment Bank / Facility for Euro-Mediterranean Investment and Partnership, the European Bank for Regional Development, the Global Environment Facility, the African Development Bank and the Islamic Development Bank. However, many countries in the region are not yet fully prepared to take advantage of opportunities offered by existing and emerging financing instruments related to adaptation.

40.In this context, fields where action should be taken include:

- i. Supporting countries’ capacities to prepare schemes and proposals in order to effectively access and manage international and regional funding for climate change adaptation.
- ii. Maximization of multilateral funding for areas of common interest and concern.
- iii. Coordination mechanisms between donors and key actors in the Region and beyond in order to agree on an integrated funding strategy and priorities, for avoiding overlapping or duplication of efforts and activities.
- iv. Feasibility and potential of a regional approach to risk transfer mechanisms.
- v. Innovative financing mechanisms such as the issuance of Green Bonds, carbon markets, biodiversity offsets, etc.

Operational Objective 3.3: To promote and build alliances with banking and insurance sector.

41.Integrating risk management into business practices could be best achieved through pricing it. Communicating risks associated with climate change through pricing may impact on awareness better than any other communication tool. Therefore, alliances between government, banks and the insurance sector could result with smarter risk management and reduced future climate related costs for the society.

42.In this context, fields where action should be taken include:

- i. Integration of climate risk management into business and management practices.
- ii. Cooperation with the insurance (including re-insurance) and banking sectors in the Mediterranean countries.
- iii. Standardized international metrics related to climate risk and exposure.

- iv. Assessment of reinsurance and insurance practices in the Mediterranean countries, exchange of best practices and provision of targeted information for different coastal stakeholders.

Strategic Objective 4: Better informed decision-making through research and scientific cooperation and improved availability and use of reliable data, information and tools.

43. Decisions on adaptation policies should be informed by scientific research into the changes in the climate system, the impacts of climate change, the vulnerabilities of natural and socio-economic systems to those impacts and the effectiveness of adaptation options.

Operational Objective 4.1: To enhance the understanding of the vulnerability of natural and socioeconomic systems and sectors and of possible impacts

44. In order to formulate informed, effective and sustainable adaptation strategies and plans, it is vital that knowledge is developed and uncertainties are reduced, especially regarding the understanding of ecosystem-scale interactions and of socioeconomic consequences, including the socio-cultural specificities of the Mediterranean communities. Thematic and sectorial assessments have been carried out in the past years by various institutions and a significant body of knowledge exists that can be built upon. However, more coordination is needed, knowledge gaps still need to be addressed and socioeconomic trends and scenarios need to be assessed. Better approaches and methods to identify key vulnerabilities and major risks are required in order to prioritize the actions.

45. In this context, priority fields where action should be taken include:

- i. Sensitivity and adaptive capacity of marine species and ecosystem responses to changes and cumulative impacts in oceanic conditions, including the introduction of alien species.
- ii. Mapping of coastal and marine ecosystems and assessment of the role of services they provide to climate resilience.
- iii. Environmental and socio-economic vulnerability of Marine Protected Areas
- iv. Sea level rise and salt water intrusion affecting groundwater resources and wetlands.
- v. Current and wave patterns, and sediment movement affecting shoreline dynamics.
- vi. Subsidence of certain coasts.
- vii. Water resources and the water cycle
- viii. Vulnerability and interactions of socioeconomic systems and sectors such as:
 - Agriculture and forestry
 - Water resources management
 - Health
 - Tourism
 - Urbanization
 - Fisheries
 - Energy
 - Transport and trade
 - Key infrastructure
- ix. Combined effects and interactions of climate change and socioeconomic dimensions and trends and scenarios, taking into account the socio-cultural specificities of the Mediterranean communities, such as:
 - Migration
 - Demographics
 - Conflict and social stability
 - Gender
 - Vulnerable groups (eg children, older people, indigenous populations)
- x. Assessment of potential positive consequences and opportunities to different sectors from a changing climate.

Operational Objective 4.2: To build capacities for and promote use of vulnerability and risk assessment at regional to local levels

46. In order to support policy makers at the regional, national and local levels, capacities and tools need to be developed for a better understanding of climate change risks, of options for adaptation, and of how climate change adaptation links to national development goals. The risks, which compose of hazard, vulnerability and exposure, need to be assessed in all dimensions: environmental (biodiversity losses of marine and coastal ecosystems), social (health, mortality) and economic (potential losses in all sectors). Direct and indirect effects of climate forcing on natural hazards must be explored and disentangled. Special attention should be given to the vulnerability component of risk where the level of uncertainties is much higher.

47. Despite the fact that the Mediterranean is a global climate hotspot, the region has been rather under-investigated in terms of comprehensive analyses and assessments. Numerous sub-regional projects and initiatives exist whose results need to be brought together in a consistent way in order to move towards the development of a complete and integrated Risks and Vulnerability Assessment for the whole Mediterranean region.

48. In this context, priority fields where action should be taken include:

- i. Understanding of the drivers, interactions, impacts and responses within the socioeconomic and environmental nexus.
- ii. Integrated risk and vulnerability models introducing socioeconomic feedbacks.
- iii. Economic valuations of the costs of climate change impacts on vulnerable sectors and hotspots.
- iv. Development of easy-to-use risk assessment methods such as index-based methods to be applied at regional, national and local levels.
- v. Technical assistance and capacity building activities to competent local and national institutions and civil society organizations for the monitoring of climate change impacts and assessing the cost of adaptation options.
- vi. Geo referencing of the Mediterranean Sea and coasts and their resources and threats.
- vii. Auditing of strategically important coastal assets and assessment of their vulnerability.
- viii. University Departments, curricula and modules on climate change issues and exchange programmes for adaptation scientists.

Operational Objective 4.3: To strengthen science-policy interface by channeling and making accessible adaptation related knowledge

49. The strengthening of adaptive capacities requires an increasing systematization and communication of scientific and traditional knowledge, as well as their integration into public policies and programs. However, institutional and cultural barriers between researchers, policy-makers and the public that hinder the transformation of knowledge into plans and actions still remain a challenge in the Mediterranean. There is a need to pay more systematic attention to strengthening the science/policy interface, and to recognize the three way relationship between scientists, policymakers and the public, as well as the leveraging role that civil society plays.

50. In this context, priority fields where action should be taken include:

- i. Strategy for communicating scientific and other types of knowledge to policy makers at all levels as well as key stakeholders.
- ii. Process for science-policy-business-community-managers dialogues at and between all governance levels, both regionally and nationally.

- iii. Development of a Mediterranean Regional Network under the UNEP-facilitated Global Adaptation Network in order to share lessons, knowledge and information and highlight research and guidance needs and priorities.
- iv. Regional Clearinghouse / repository of best practices and relevant reports and publications.

Operational Objective 4.4: To strengthen regional climate information at a resolution suitable for adaptation planning

51. In order for scientists and stakeholders to be able to assess the impacts of climate change and develop adaptation plans it is essential that they have access to the best possible information from observation systems that monitor the climate system and detect and attribute climate change.

52. The countries of the Mediterranean have national observation and monitoring systems of varying data quality and availability, with northern countries enjoying more long-term and high-quality climate data than southern ones. Nevertheless, monitoring systems related to marine ecosystems (biotic and abiotic components) in the coastal and open waters are still lacking. Infrastructure, spatial coverage and data issues at the national level are challenges that need to be addressed. Crucial coordination issues, however, are also essential to be addressed at the regional level.

53. In this context, priority fields where action should be taken include:

- i. Availability of environmental and socioeconomic data required for adaptation, including the maintenance and modernization of monitoring programmes and networks in the region
- ii. Sharing and standardization of collection, quality and storage, of all data relevant to adaptation planning, following WMO Resolution 40¹¹.
- iii. Regional information platform that will contain information on climate change monitoring and research, interconnecting or harvesting information from relevant databases and platforms
- iv. Development of regional climate models integrating socioeconomic trends and threats.
- v. A strategic approach to climate adaptation research in the region involving academic, industry and government bodies and their partnerships.]

¹¹https://www.wmo.int/pages/about/Resolution40_en.html

Draft Decision IG.22/7

**Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast
and Related Assessment Criteria**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling Decision IG. 17/6 of the 15th Meeting of the Contracting Parties providing for “*A healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations*” and the 7 steps roadmap for the implementation of the ecosystem approach, including on monitoring;

Recalling Decision IG. 20/4 of the 17th Meeting of the Contracting Parties and Decision IG. 21/3 of the 18th Meeting of the Contracting Parties on the ecosystem approach;

Recalling Article 12 of the Barcelona Convention and relevant provisions from its Protocols such as Articles 8 and 13 of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities; Article 5 of the Protocol Concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea; Articles 3, 15 and 20 of the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean; and Article 16 of the Protocol on Integrated Coastal Zone Management in the Mediterranean;

Having considered the reports of the Correspondence Groups on Monitoring and on Good Environmental Status and Targets, as well as of the Ecosystem Approach Coordination Group Meetings;

Appreciating the support of donors and contribution of competent partner organizations in the development of the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria;

Adopts the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP), as presented in Annex to this decision;

Takes note of the Integrated Monitoring and Assessment Guidance as presented in UNEP(DEPI)/MED WG.421/Inf.9 and requests the Secretariat and the Correspondence Groups on Monitoring to work on its refinement, during the initial phase of IMAP, especially in relation to scales of assessment, specification and further quantification of GES, and further development of the candidate indicators;

Takes into account the different monitoring capacities of the Contracting Parties and the need for capacity building and technical assistance for implementation;

Urges the Contracting Parties, with the support of the Secretariat, to update their national monitoring programmes in light of the new elements of IMAP and report quality assured data on an annual basis;

Encourages the Contracting Parties to undertake, when appropriate, joint monitoring initiatives on a pilot basis, with the aim to exchange best practices, use harmonized methodologies, and ensure cost efficiency;

Encourages the Contracting Parties to support and take part in regional initiatives and projects lead by competent partner organizations that will contribute to the implementation of the initial phase of the IMAP in order to strengthen strategic and operational regional synergies;

Requests the Secretariat to work further with relevant partner organizations, to integrate in IMAP the Ecological Objectives that are not yet included in its initial phase and to coordinate and facilitate the implementation of IMAP.

Annex
Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast
and Related Assessment Criteria

Draft Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria

I. Introduction

Monitoring and assessment, based on scientific knowledge, of the sea and coast is the indispensable basis for the management of human activities, in view of promoting sustainable use of the seas and coasts and conserving marine ecosystems and their sustainable development. The Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) describes the strategy, themes, and products that the Barcelona Convention Contracting Parties are aiming to deliver, through collaborative efforts inside the UNEP/MAP Barcelona Convention, over the second cycle of the implementation of the Ecosystem Approach Process (EcAp process), i.e. over 2016-2021, in order to assess the status of the Mediterranean sea and coast, as a basis for further and/or strengthened measures.

Background

IMAP builds on the monitoring and assessment related provisions of the Barcelona Convention and its Protocols, previous Decisions of the Contracting Parties related to monitoring and assessment, and to the EcAp process, including on Decision IG. 21/3 and the expert level discussions mobilized based on this Decision, such as the ones taking place in the Correspondence Groups on Good Environmental Status (COR GEST) and Monitoring (CORMON), as well as the 4th and 5th EcAp Coordination Group.

In addition, the development of IMAP took due account of the Contracting Parties' existing monitoring and assessment programmes, practices of other Regional Sea Conventions and other Regional bodies.

Timeline

IMAP is aiming to deliver over 2016-2021 its objectives as described above. It is introduced first however in an initial phase (in line with Decision IG. 21/3, in between 2016-2019), during which the existing national monitoring and assessment programmes will be integrated, in line with the IMAP structure and principles and based on the agreed common indicators. This implies in practice that the existing national monitoring and assessment programmes will be reviewed and revised as appropriate so that national implementation of IMAP can be fulfilled in a sufficient manner.

The main outputs during the initial phase of IMAP will include the update of GES definitions, further refinement of assessment criteria and development of national level integrated monitoring and assessment programmes.

Furthermore, the Quality Status Report in 2017 and the State of Environment and Development Report in 2019 will build on the structure, objectives and data collected under IMAP.

The validity of the IMAP should be reviewed once at the end of every EcAp six year cycle, and in addition it should be updated and revised as necessary on a biennial basis, based on lessons learnt of the implementation of the IMAP and on new scientific and policy developments.

II. IMAP common principles and structure

1. Overarching principles¹ and the overall IMAP structure

The overarching principles guiding the development of the IMAP include (i) adequacy; (ii) coordination and coherence; (iii) data architecture and interoperability based on common parameters; (iv) concept of adaptive monitoring; (v) risk-based approach to monitoring and assessment, and (v) the precautionary principle, in addition to the overall aim of integration.

In line with the above overarching principles, data and information is gathered through integrated monitoring activities on the national level and shared in a manner that creates a compatible, shared regional pool of data, usable by each Contracting Party, as described under at point 4.

The IMAP information system will ensure the establishment of the regional pool of data based on SEIS principles that will allow the production of common indicator assessment reports in an integrated manner, following the monitoring specifics and data provided, which ensures comparability across the Mediterranean region.

In line with the above, integration is achieved through IMAP both at monitoring level, through an integrated monitoring system, following common principles and undertaken in a coordinated manner and at assessment level, with the overall aim to assess the overall status of the marine and coastal environment.

2. IMAP integrated monitoring

The IMAP monitoring requirements focus on, based on agreed common indicators, parameters that are indicative of the state of the environment, the prevailing anthropogenic pressures and their impacts, and the progress towards the good environmental status (ecological objectives and targets). The monitoring is carried out in such a way that an assessment with adequate confidence and precision is achieved.

The IMAP sets out the basis for how the Contracting Parties should design and carry out their national integrated monitoring programmes and work together in the framework of the UNEP/MAP Barcelona Convention to produce and update common indicator based regional assessments on the status of the Mediterranean Sea and coast.

During the initial phase of IMAP (2016-2019), Contracting Parties will:

- During 2016-2017, update their existing monitoring programmes in order to cover the IMAP areas, common indicators in line with the IMAP, and, based on the Integrated Monitoring and Assessment Guidance, Common Indicator Fact Sheets. It has to be noted that a number of Contracting Parties have already developed integrated national monitoring programmes ;
- Continue reporting based on their existing national monitoring programmes until they are updated into a national Integrated Monitoring Programme;
- Following the update of their existing monitoring programmes, report quality assured data following a common regional monitoring reporting template (please see more on this under point 4);

¹Clarification about the IMAP principles are provided in the Integrated Monitoring Guidance Document

During national implementation, the Contracting Parties are encouraged to coordinate within and between each other in order to use resources in an efficient way. Shared monitoring stations and activities, information, and data could be steps towards this direction.

3. IMAP integrated assessment

The IMAP assessment products, produced by the UNAP/MAP Secretariat, including the Common Indicator Assessment Fact Sheets, and the planned integrated assessments (2017 Status Quality Report, 2019 State of Environment and Development Report, 2023 State of Environment Report), should be mainly based on the common indicators and monitoring data provided by Contracting Parties.

In areas of scientific and/or data gaps, the assessment products can also build on relevant scientific projects, pilot outcomes, and comparable data of other regional organizations and in case these are not available, on scientific literature. In addition, they will analyze trends, drivers and will build on available socio-economic data.

The common indicator assessment fact sheets provide information on the status of the environment and information needed to evaluate the severity of environmental problems and distance from EcAp targets, ecological objectives and Good Environmental Status (GES) description.

The common indicator assessment fact sheets are linked to specific Ecological Objectives (EOs) and together they indicate whether the GES related to the specific EO is met or not. Following the EO level assessment, the integrated assessment takes place on the state of the Mediterranean Sea and Coast.

The 2017 Status Quality Report will be based on the common indicators, and common indicator assessment fact sheets established for them, following a model to be developed by the Secretariat in cooperation with the Contracting Parties through CORMONs by the end of 2016, and will consider the data from the most recent national monitoring and relevant scientific projects and pilots undertaken relevant to the IMAP.

During the development of the above an integrated approach for determining and assessing GES will be used, considering the Integrated Monitoring and Assessment Guidance, describing state-based common indicators and explicitly relating them to the pressure-based indicators.

4. UNEP/MAP Strategy towards an Integrated Data and Information System

Assessments arising from monitoring data are critically dependent upon practical mechanisms for handling data from different activities that ensure that documents, data, and products are managed consistently and are easily available to users. This will support integrated assessments, for example from integrated biological and chemical programmes, or linking the observed changes in spatial distribution and temporal trends in substances or their effects to inputs into the UNEP/MAP Barcelona Convention maritime area.

Data storage and handling processes are therefore central, and it is important that the role of the various components in this is clear and continuously developed and strengthened.

The IMAP thus requires an updated and integrated data and information system for UNEP/MAP Barcelona Convention with clear set roles for data handling and assessment for the various components and with a user-friendly reporting platform for Contracting Parties, based on the following strategic points:

- The UNEP/MAP Barcelona Convention data and information activities aim to achieve a reliable, quantitative assessment of the status of the Mediterranean Sea and Coast;

- The UNEP/MAP Barcelona Convention data and information activities should facilitate access and knowledge of the general public to environmental information.

Basic activities, core elements of the UNEP/MAP Barcelona Convention integrated data and information system should include:

- Based on the structure of the Common Indicator Fact Sheets, develop region-wide, electronic, common indicator based monitoring reporting formats and up-to-date tools for data exchange;
- implement relevant quality control and validation procedures;
- make assessment products available in an integrated manner, on a common platform;
- make data and information available using harmonized standards and practices, following the UNEP access-to-information policy (UNEP/EA. 1/INF/23).

5. Cooperation with other relevant regional bodies in the context of IMAP

The current IMAP covers with agreed common indicators the ecological objectives related to biodiversity (EO1), non-indigenous species (EO2), eutrophication (EO5), hydrography (EO7), coast (EO8), contaminants (EO9), and marine litter (EO10).

In addition, regarding marine noise (EO11), IMAP includes candidate common indicators, with the intention for these candidate common indicators to be further developed, based on pilot monitoring activities, additional expert knowledge, and scientific developments, during the initial phase of IMAP.

While some of the elements of fisheries (EO3) and marine food webs (EO4) are partly covered by the monitoring and assessment of EO1 and EO2 and the Contracting Parties have agreed on the GFCM developed list of common indicators, the monitoring and assessment specifics of EO3 are still being developed by the GFCM, in close cooperation with UNEP/MAP. During the initial phase of IMAP implementation, a clear roadmap will be developed by the Secretariat in collaboration with GFCM and other relevant partners on the monitoring programme and assessment for EO4 and EO6.

In light of the above, it is an absolute necessity for UNEP/MAP to strengthen its cooperation with the relevant regional bodies, especially in relation to:

- EO1, both with the General Fisheries Commission for the Mediterranean (GFCM) for commercial species of fish and shellfish and the Secretariat of the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS), noting that the ACCOBAMS Survey Initiative, to be undertaken during 2016-2019, will provide important inputs (in terms of monitoring methodologies, capacity building and reliable data on abundance and distribution of cetaceans);
- EO3, with the GFCM, noting that the EO3 related common indicators will be further developed and assessed by GFCM (with assessment results provided to UNEP/MAP in order to undertake the 2017 and following integrated assessments);
- EO11, with ACCOBAMS, noting that further development of the candidate common indicators will need to be carried out in a close cooperation between UNEP/MAP and ACCOBAMS in light of pilot monitoring activities, additional expert knowledge, and scientific developments, during the initial phase of IMAP, and considering that ACCOBAMS is undertaking an identification of noise hot spots in the Mediterranean.

In addition, cooperation with other regional and international bodies will be key for the successful implementation of IMAP, to ensure that no double obligation is created for those Contracting Parties, which are Parties to various Regional Seas Conventions and/or members of the European Union and undertake monitoring activities under other specific frames.

Cooperation with other regional and international bodies can also strengthen the cost-efficiency and scientific adequacy of IMAP. Exchange of best practices and information is encouraged during the IMAP implementation, both in between Contracting Parties participating in various monitoring programmes and in between UNEP/MAP and other relevant regional, international bodies.

III. Key elements of IMAP

1. Common Indicators

The common indicators are the backbone of IMAP.

In the context of the Barcelona Convention, a common indicator is an indicator that summarizes data into a simple, standardized, and communicable figure and is ideally applicable in the whole Mediterranean basin, or at least on the level of sub-regions, and is monitored by all Contracting Parties. A common indicator is able to give an indication of the degree of threat or change in the marine ecosystem and can deliver valuable information to decision makers.

Candidate indicators are indicators which still have many outstanding issues regarding their monitoring and assessment and therefore are recommended to be monitored in the initial phase of IMAP on a pilot and voluntary basis.

The Common and candidate indicators agreed upon, which are at the core of IMAP, include:

1. Habitat distributional range (EO1) to also consider habitat extent as a relevant attribute;
2. Condition of the habitat's typical species and communities (EO1);
3. Species distributional range (EO1 related to marine mammals, seabirds, marine reptiles);
4. Population abundance of selected species (EO1, related to marine mammals, seabirds, marine reptiles);
5. Population demographic characteristics (EO1, e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles);
6. Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (EO2, in relation to the main vectors and pathways of spreading of such species);
7. Spawning stock Biomass (EO3);
8. Total landings (EO3);
9. Fishing Mortality (EO3);
10. Fishing effort (EO3);
11. Catch per unit of effort (CPUE) or Landing per unit of effort (LPUE) as a *proxy* (EO3);
12. Bycatch of vulnerable and non-target species (EO1 and EO3)
13. Concentration of key nutrients in water column (EO5);
14. Chlorophyll-a concentration in water column (EO5);

15. Location and extent of the habitats impacted directly by hydrographic alterations (EO7) to also feed the assessment of EO1 on habitat extent;
16. Length of coastline subject to physical disturbance due to the influence of man-made structures (EO8) to also feed the assessment of EO1 on habitat extent;
17. Concentration of key harmful contaminants measured in the relevant matrix (EO9, related to biota, sediment, seawater);
18. Level of pollution effects of key contaminants where a cause and effect relationship has been established (EO9);
19. Occurrence, origin (where possible), and extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances) and their impact on biota affected by this pollution (EO9);
20. Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood (EO9);
21. Percentage of intestinal enterococci concentration measurements within established standards (EO9);
22. Trends in the amount of litter washed ashore and/or deposited on coastlines (including analysis of its composition, spatial distribution and, where possible, source.) (EO10);
23. Trends in the amount of litter in the water column including microplastics and on the seafloor (EO10);
24. Candidate Indicator: Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds and marine turtles (EO10);
25. Candidate Indicator: Land use change (EO8)
26. Candidate indicator: Proportion of days and geographical distribution where loud, low, and mid-frequency impulsive sounds exceed levels that are likely to entail significant impact on marine animals (EO11)
27. Candidate Indicator: Levels of continuous low frequency sounds with the use of models as appropriate (EO11)

During the implementation of the initial phase of IMAP, the CORMONs will further develop the candidate indicators towards common indicators as well as to further refine the specifics of agreed common indicators, in particular on geographical scale, in light of the ongoing implementation experience of IMAP.

Note on geographic reporting scales

A scale of reporting units needs to be defined during the initial phase of IMAP taking into account both ecological considerations and management purposes, following a nested approach.

The nested approach aims to accommodate the needs of the above is to take into account 4 main reporting scales:

- (1) Whole region (i.e. Mediterranean Sea);

- (2) Mediterranean sub-regions, as presented in the Initial Assessment of the Mediterranean Sea, UNEP(DEPI)/MED IG.20/Inf.8;
- (3) Coastal waters and other marine waters;
- (4) Subdivisions of coastal waters provided by Contracting Parties

The work shall be undertaken to further develop reporting geographical scales of the nested approach.

2. Monitoring and assessment of biodiversity and NIS related common indicators

Biodiversity (EO1)

Biological diversity is the “variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”.

The common indicators to be monitored and assessed in relation to biodiversity are as following:

Common Indicator 1: Habitat distributional range (EO1) to also consider habitat extent as a relevant attribute;

Common Indicator 2: Condition of the habitat’s typical species and communities (EO1);

Common Indicator 3: Species distributional range (EO1 related to marine mammals, seabirds, marine reptiles);

Common Indicator 4: Population abundance of selected species (EO1, related to marine mammals, seabirds, marine reptiles);

Common indicator 5: Population demographic characteristics (EO1, e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles)

As it is not possible or even necessary to monitor all attributes and components of biological diversity throughout the region, the IMAP monitoring is focusing, in line with the risk-based approach, on some representative sites and species, which can showcase the relationship between environmental pressures and their main impacts on the marine environment.

In light of the above, a reference list of species and habitats to be monitored is presented in Appendix 1, noting that those Contracting Parties who have the necessary means and are willing to do so can go beyond the monitoring requirements of this reference list.

The Contracting Parties while updating their national monitoring programmes need to include at least the monitoring of the reference list species and habitats with at least two monitoring areas, one in a low pressure area (e.g. marine protected area/ Specially Protected Area of Mediterranean Importance (SPAMI)) and one in a high pressure area from human activity.

The few species of cetaceans regularly present in the Mediterranean Sea should all be considered when developing the national monitoring programmes. The Contracting Parties shall make every effort to identify a minimum of two species to be included in their national monitoring programme, based on the specificity of their marine environment and biodiversity, and taking account that these species should belong to at least two different functional groups, where possible (Baleen whales / Deep-diving toothed whales / Shallow-diving toothed whales). As far as possible the choice of monitored species should be coordinated at sub regional scale to ensure coherence with cetacean population distribution in the Mediterranean Sea.

The methodologies and quality control and quality assurance measures available for Contracting Parties to consider during the update of their national monitoring programmes are described in the Integrated Monitoring and Assessment Guidance.

Regarding the assessment of biodiversity, it has to be noted that the quantitative definition of GES is difficult, considering the variety of assessment elements. The conceptual approach for a quantitative GES setting can be framed in a way that the resilience of the ecosystem is suited to accommodate the quantified biodiversity, or, in other words, it will be accounted in the determination of the GES boundaries as the “acceptable deviation from a reference state which reflects conditions largely free from anthropogenic pressures.

The scale of monitoring is of specific importance for biodiversity, due to the nature of the biodiversity related common indicators. The application of the nested approach, as described in Appendix 1, is key here.

For the high quality of assessment, baselines and thresholds will need to be agreed on in line with the possible methods for this set out in the Integrated Monitoring and Assessment Guidance document, following the agreed scales of assessment, during the initial phase of IMAP implementation.

Non-Indigenous Species (EO2)

Non-indigenous species (NIS; synonyms: alien, exotic, non-native, allochthonous) are species, subspecies, or lower taxa introduced outside of their natural range (past or present) and outside of their natural dispersal potential.

Invasive alien species (IAS) are a subset of established NIS which have spread, are spreading, or have demonstrated their potential to spread elsewhere, and which have an effect on biological diversity and ecosystem functioning (by competing with and on some occasions replacing native species), socio-economic values, and/or human health in invaded regions.

The common indicator in relation to NIS is:

Common Indicator 6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (EO2, in relation to the main vectors and pathways of spreading of such species);

Non-indigenous species monitoring in the Mediterranean is a trend monitoring, where it is key to establish reliable, long-term data-sets as a first step of monitoring.

In addition, monitoring of non-indigenous species (NIS), following the risk based approach, needs to be focused on the invasive alien species (IAS) in IAS introduction “hot spots” (e.g ports and their surrounding areas, docks, marinas, aquaculture installations, heated power plant effluents sites, offshore structures). In addition, areas of special interest such as marine protected areas or lagoons may be selected on a case by case basis, as appropriate, depending on the proximity to alien species introduction hot spots.

With the application of the risk based approach as stated above, it is possible to obtain an overview of the non-indigenous species present at a large spatial scope while only monitoring a relatively small number of locations.

Based on existing regional databases, such as the Marine Mediterranean Invasive Alien Species database, (MAMIAS), the “Andromeda” invasive species database for the Mediterranean and Black Sea, and the European Alien Species Information Network (EASIN), each Contracting Party will

determine the list of IAS to be monitored in its national monitoring programme during the initial phase of the IMAP and start collecting data regarding these species. Guidance on developing IAS national lists and a regional and or sub regional reference list will be developed by 2017.

The methodologies and quality control and quality assurance measures available for Contracting Parties to consider during the update of their national monitoring programmes, is described in the Integrated Monitoring and Assessment Guidance.

As the most effective monitoring method a Rapid Assessment Survey (RAS) will be carried out, at least yearly by the Contracting Parties in hot-spot areas (e.g ports and their surrounding areas, docks, marinas, aquaculture installations, heated power plant effluents sites, offshore structures).

In addition, UNEP/MAP will develop during the initial phase of IMAP citizen survey guidance for NIS, to enable Contracting Parties to use this additional cost-efficient methodology, which also strengthens public awareness and participation.

Regarding the assessment of EO2, to be able to specify further GES, it is important to understand which NIS are present within the marine region and sub-regions. A baseline assessment of the extant NIS would provide a reference point against which the success of future actions could be measured. After this baseline data has been gathered during the initial phase of IMAP, it will be possible to set reference levels, following the assessment criteria set out in the Integrated Monitoring and Assessment Guidance.

3. Monitoring and assessment of pollution and litter related common indicators

Eutrophication (EO5)

Eutrophication is a process driven by enrichment of water by nutrients, especially compounds of nitrogen and/or phosphorus, leading to: increased growth, primary production and biomass of algae; changes in the balance of nutrients causing changes to the balance of organisms; and water quality degradation.

Eutrophication related common indicators:

Common indicators related to eutrophication:

Common Indicator 13: Concentration of key nutrients in water column (EO5);

Common Indicator 14: Chlorophyll-a concentration in water column (EO5)

The monitoring of eutrophication under IMAP builds on the existing monitoring system of UNEP/MAP MED POL Monitoring programme, and most of the Contracting Parties already have monitoring programmes in place for eutrophication all over the Mediterranean basin, which constitutes a greater concern for the Adriatic than for the rest of sub-regions.

The Contracting Parties, building on their existing national monitoring programmes and previous MED POL experience on eutrophication, will update these programmes during the initial phase of IMAP, with the overall aim to establish coherent datasets at the entire regional sea level.

The methodologies and quality control and quality assurance measures available for Contracting Parties to consider during the update of their national monitoring programmes are described in the Integrated Monitoring and Assessment Guidance, noting the differences of needed techniques based on the level of the eutrophication problem in different sub-regions and countries.

The geographical scale of monitoring for the assessment of GES for eutrophication will depend on the hydrological and morphological conditions of an area, particularly the freshwater inputs from rivers, the salinity, the general circulation, upwelling, and stratification.

The spatial distribution of the monitoring stations should thus, prior to the establishment of the eutrophication status of the marine sub-region/area, be risk-based and proportionate to the anticipated extent of eutrophication in the sub-region under consideration as well as its hydrographic characteristics aiming for the determination of spatially homogeneous areas. Consequently, each Contracting Party would be required to determine the optimum frequency per year and optimum locations for their monitoring/sampling stations.

It is recommended that the Contracting Parties rely on the classification scheme on chl-a concentration ($\mu\text{g/l}$) developed by MEDGIG as an assessment method that is easily applicable by all Mediterranean countries, based on the indicative thresholds and reference values adopted therein (see Table 2). In this context, water typology is a very important factor for the further development of classification schemes in a certain area regarding the definition of sub-regional thresholds for chlorophyll-a.

In addition countries, where appropriate may continue using the existing different eutrophication assessment methods such as TRIX, Eutrophication scale, EI, HEAT, etc. at sub-regional or national levels for assessing eutrophication trends.

The assessment methodology is well described in the Integrated Monitoring and Assessment Guidance for eutrophication. The final report of the Informal Online working group on eutrophication (UNEP(DEPI)/MED WG.420/Inf.11) contains assessment criteria regarding eutrophication which are presented in Appendix 2 of this document.

During the initial phase of IMAP implementation, work will be undertaken to develop GES thresholds and reference conditions for nutrients, transparency, and oxygen, using an adequate geographical scale as well as harmonize existing assessment tools through workshops, dialogue, comparative exercises at regional/sub-regional/subdivision levels.

In addition, taking into account sub-regional differences, work will be also undertaken to develop assessment fact sheets for eutrophication common indicator based on specifics described in the Integrated Monitoring and Assessment Guidance.

Contaminants (EO9)

The monitoring of concentrations of a range of chemical contaminants in water, sediments and biota has a long standing history in the Mediterranean, under the auspices of the UNEP/MAP Barcelona Convention, its Land-Based Protocol, and UNEP/MAP MED POL monitoring programmes. The IMAP builds on these existing legislative bases, programmes.

Contaminants related common indicators:

Common Indicator 17: Concentration of key harmful contaminants measured in the relevant matrix (EO9, related to biota, sediment, seawater);

Common Indicator 18: Level of pollution effects of key contaminants where a cause and effect relationship has been established (EO9);

Common Indicator 19: Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution (EO9);

Common Indicator 20: Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood (EO9);

Common Indicator 21: Percentage of intestinal enterococci concentration measurements within established standards (EO9)

All Mediterranean countries have programmes already in place in relation to contaminants monitoring, however the scope and scale of this monitoring varies. The IMAP thus aims to build more harmony in between the various existing monitoring programmes, based on the agreed common indicators.

Biological effects monitoring is generally less widely established in both national and international programmes, and the number of countries undertaking such studies (and the intensity of the coverage) is much smaller. Therefore, it will be essential during the initial phase of IMAP to expand and develop further the use of biological effects methods to cover properly the EO9.

In addition, important development areas during the initial phase of IMAP will include harmonisation of monitoring targets (determinants and matrices) within assessment sub-regions, development of suites of assessment criteria, integrated chemical and biological assessment methods, and review of the scope of the monitoring programmes to ensure that those contaminants which are considered to be important within each assessment area are included in monitoring programmes.

Noting the above, the Contracting Parties will update their existing contaminants-related monitoring programmes by building on their existing sampling station networks, existing methodologies and statistical tools, existing data sets, and existing time series as the basis of monitoring against a “no deterioration” objective, aiming to cover the monitoring of all contaminants related common indicators.

While most monitoring stations already exists, there is also a need for Contracting Parties to include in their monitoring programme areas beyond the coastal areas in a representative and efficient way, where risks warrant coverage, in line with the Integrated Monitoring and Assessment Guidance.

The methodologies, quality control and quality assurance measures, and reference methods available for Contracting Parties to consider during the update of their national monitoring programmes, are described in the Integrated Monitoring and Assessment Guidance.

Regarding assessment, the Report UNEP(DEPI)MED WG.394/Inf.3 on the development of assessment criteria for hazardous substances and the final report of the Informal Online working group on contaminants (UNEP((DEPI)/MED WG.420/Inf.12) present key recommendations which will be followed to establish a forward procedure for monitoring the achievement of GES for contaminants during the initial phase of IMAP (Appendix 2 of this Annex).

Until EACs are defined under this follow-up, a two-fold approach could be adopted to support monitoring for the assessment of GES:

- a) a threshold value for GES(BAC), to be set using concentrations from relatively unpolluted areas on a sub-regional level and
- b) a decreasing trend should be observed from baseline values representing the actual level of contaminants concentrations.

Thus, GES can be defined for toxic metals (Hg, Cd, Pb), chlorinated organic compounds, and PAHs, for which monitoring data exist as a result of running monitoring programmes, already during the initial phase of IMAP, and UNEP/IMAP will conclude its relevant common indicator based assessment in light with the above.

In addition, during the initial phase of IMAP, UNEP/MAP will also prepare an adapted manual establishing the BAC and, when possible, the formulation of EAC for selected biomarkers in Mediterranean species.

Regarding acute pollution events, while Contracting Parties already have an existing monitoring obligation under Article 9 of the Prevention and Emergency Protocol, the efforts of which need to be strengthened, it is also foreseen that further analysis of the links in between acute pollution events and their effects on biota and the development of specific assessment criteria for this latter should occur.

Monitoring of contaminants in biota used for human consumption also builds on existing monitoring requirements and only measures contaminants in fish and other seafood for which regulatory limits have been set in national and international regulations for public health reasons.

National monitoring Programmes in this regard should at least consider the following contaminants for which regulatory levels have been laid down: Heavy metals (lead, cadmium, and mercury), polycyclic aromatic hydrocarbons, and dioxins (including dioxin-like PCBs), with the species selection considerations described in the Integrated Monitoring and Assessment Guidance.

Regarding percentage of intestinal enterococci concentration measurements within established standards), the Revised Mediterranean guidelines for bathing waters of 2007 based on the WHO guidelines for “Safe Recreational Water Environments” and on the EC Directive for “Bathing Waters” serve as a basis for monitoring.

The values agreed for the Mediterranean region in COP 17 (Decision IG.20/9 Criteria and Standards for bathing waters quality in the framework of the implementation of Article 7 of the LBS Protocol, (UNEP/MAP, 2012)) will be built on to further define GES for the indicator on pathogens in bathing waters during the initial phase of IMAP.

Marine litter (EO10)

Marine litter monitoring of IMAP is based on the Regional Plan on Marine Litter management (Decision IG. 20/10, the MLRP) and on the following agreed common and candidate indicators:

Common Indicator 22: Trends in the amount of litter washed ashore and/or deposited on coastlines (EO10);

Common Indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor (EO10);

Candidate Indicator 24: Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds, and marine turtles (EO10)

In addition, as marine litter monitoring is a new area for the Mediterranean, IMAP greatly builds on the UNEP Guidelines for Comprehensive Beach Litter Assessment and on the Guidance on Monitoring of Marine Litter in European Seas.

Contracting Parties will establish national monitoring programmes during the initial phase of IMAP in relation to the two common indicators and are encouraged to also consider in their monitoring programmes the candidate indicator related to ingested litter and to undertake pilot monitoring activities on the latter.

Furthermore, is strongly recommended that Contracting Parties, which currently have plans to monitor only in a subset of environmental compartments, start with small pilot research or development projects in other compartments. This would provide baseline data to make an informed decision about

future, full-scale monitoring programmes. Without information on trends and amounts in all the marine compartments, a risk-based approach to litter monitoring and measures is not possible.

A considerable number of citizens, communities (NGOs, civil society initiatives), and environmental protection associations and institutes across the Mediterranean are already taking part in activities to tackle marine litter. Contracting Parties are encouraged to enable them in the implementation of IMAP and empower them to help improve the evidence base needed for marine litter monitoring.

Regarding beach litter, cost-efficient and easy to follow monitoring and sampling methodologies and techniques are well established, as described in the Integrated Monitoring and Assessment Guidance, with at least two surveys per year in spring and autumn recommended and ideally 4 surveys per year in spring, summer, autumn and winter.

A reduced master list of litter categories and items is also included in the Integrated Monitoring and Assessment Guidance with the most frequent items found in Mediterranean beaches. The Contracting Parties can build on this reduced list as a reference approach which is compatible with other lists, in relation to marine litter monitoring, and it can be used also as a practical guide for the field work, enabling a coordinated and harmonized monitoring (including when operated by NGOs, as appropriate).

Regarding monitoring litter at the sea (Common Indicator 17), due to the low occurrence of litter in midwater, the common indicator focuses on surface and seafloor litter.

Due to the observation methodology (observation from ships), the type of marine litter objects can only be noted during very short visual observation. Therefore, in contrast to beach litter, only rough litter categories can be determined, even though monitoring size categories should also include relevant small items, in line with the Integrated Monitoring and Assessment Guidance.

During the initial phase of IMAP, UNEP/MAP will develop a specific Monitoring of floating litter protocol, on a regional basis.

Regarding sea floor litter (Common Indicator 17), opportunistic monitoring is the most cost-efficient method for sea-floor monitoring, building on the Mediterranean International Bottom Trawl Surveys (MEDITS) and compatible professional trawling operations to couple monitoring efforts may be the best approach to monitor litter on the sea-floor. There may be other opportunities to couple marine litter surveys with other regular surveys (monitoring in marine reserves, offshore platforms, etc.) or programmes on biodiversity, with methodologies and technical requirements prescribed in the Integrated Monitoring and Assessment Guidance.

Regarding ingested litter (Candidate Indicator 18), due to the limited availability of protocols and the state of knowledge, the candidate indicator's focus during the initial phase of IMAP is on sea turtle *Caretta caretta*. UNEP/MAP thus will develop during the initial phase of IMAP a monitoring protocol for marine litter in sea turtles with focus on relevant parameters for application in the Mediterranean.

As ingested litter is a candidate common indicator, Contracting Parties are not obliged to include its monitoring in their national integrated monitoring programmes during the initial phase of IMAP, but they are encouraged however to undertake pilots, further research on this indicator.

Furthermore, it is important to note that while micro-litter is considered to be part of IMAP, further work is necessary here regional level, recognizing that our understanding of the potential impacts of microplastic on organisms and the environment is still limited. Contracting Parties are thus encouraged also to undertake pilots, further research work in this area.

The Integrated Monitoring and Assessment Guidance includes further specific methodologies, scales, and technical considerations, which can guide the Contracting Parties during the development of their

integrated monitoring programme's marine litter component. The report of the Informal Online working group on Marine Litter (UNEP((DEPI)/MED WG.420/Inf.13) present recommendations related to baselines (Appendix II).

4. Monitoring and assessment of coastal ecosystems and landscapes and hydrography related common indicators

Hydrography

Monitoring of hydrographic alterations aim to address developments large enough to have the potential to alter hydrographical conditions, either at broad scale or through acting cumulatively with other developments.

Hydrography related common indicator:

Common Indicator 15: Location and extent of the habitats impacted directly by hydrographic alterations (EO7)

As mentioned above, monitoring under this ecological objective aims to address new developments of permanent alterations (constructions lasting for more than 10 years).

Contracting Parties thus when developing their national integrated monitoring programme's hydrography component, need to first agree on a common baseline year in the (very) near future from which monitoring for good status can be based upon. Furthermore, the Contracting Parties are strongly encouraged to list their available records the licensing applications for any proposed developments that would be considered large enough to have the potential to alter hydrographical conditions (constructions lasting for more than 10 years). The monitoring following this approach, will confirm whether there is need for any additional licensing, monitoring or assessment requirements for Government, marine licensing authorities or developers.

Coastal ecosystems and landscapes

One particularity of the IMAP (compared to other regional/RSC monitoring and assessment programmes) is the inclusion of an Ecological Objective focusing on the terrestrial part of the coastal zone. This reflects that the Barcelona Convention also covers coastal areas in its work, in line with the ICZM Protocol.

The coast related common indicator and candidate common indicator are as follows:

Common Indicator 16: Length of coastline subject to physical disturbance due to the influence of man-made structures (EO8);

Candidate Indicator 25: Land use change (EO8)

In line with the above, the monitoring under this Ecological Objective is meant to address human activities causing coastal artificialisation by sealing the coast with the implementation of coastal structures and therefore impact coastal ecosystems and landscapes.

The term 'manmade structures' typically refers, solely, to coastal defences and ports (and indirectly to land claim). Coastal segments are "artificialised" when all or part of the 100 meter area on both sides (i.e. land and sea) are subject to transformation by Man, modifying their original physical state.

During the development of the national integrated monitoring programmes' coastal component, the Contracting Parties, in line with the above, first need assess the length of coastline affected by man-made structures in the current state, in line with the Integrated Monitoring and Assessment Guidance, noting that the length of coastline subject to physical disturbance due to the influence of manmade

structures is an impact indicator, which assumes that the coastlines occupied by manmade structures are potentially impacted areas.

For assessment of indicator on length of coastline influenced by man-made structures, definition of thresholds as % and / or m, to be developed, during the initial phase of IMAP, should be based on expert assisted procedure to take into account the typology of the coast including its ecosystem goods and services related to social and economic benefits. The assessment should also include disturbance that comes from such structures.

In relation to candidate indicator on land use change, Contracting Parties are encouraged to develop monitoring programmes and undertake monitoring activities in line with the outcomes of the EcAp-MED pilot project, undertaken in the Adriatic. This indicator is very important for the analysis of processes, including land-sea interaction, in coastal areas and as it is a simple tool it should be promoted and developed during the initial phase of IMAP. This will allow countries to propose adequate measures to achieve GES (to be specified by the countries themselves taking into account their local specificities. It will bring more objectivity into reporting on the state and evolution of their coastal zones and implementation of the ecosystem approach in coastal zones.. During the initial phase of IMAP implementation further work will be undertaken to provide support to the Contracting parties through training, capacity building activities, exchange of experience including as appropriate consultations at sub-regional level.

5. Monitoring Ecological Objective 11: Energy including underwater noise

This part of IMAP has been prepared, thanks to the support of experts from the Joint ACCOBAMS/ASCOBANS/CMS Working Group on Noise

The two candidate common indicators related to energy including underwater noise are:

Candidate Indicator 26: Proportion of days and geographical distribution where loud, low, and mid-frequency impulsive sounds exceed levels that are likely to entail significant impact on marine animals

Candidate Indicator 27: Levels of continuous low frequency sounds with the use of models as appropriate

Compared to Descriptor 11 related indicators (MSFD), candidate indicators 26 and 27 are more closely related to the acoustic biology of key marine mammal species of the Mediterranean which are known to be sensitive to noise, i.e. the fin whale, the sperm whale and the Cuvier's beaked whale. The proposed monitoring strategy of these two candidate indicators, as spelled out in the Integrated Monitoring and Assessment Guidance, represents a basis for further work during the initial stage of IMAP towards an effective and widely agreed monitoring of underwater noise at a regional scale.

In line with the above, Contracting Parties are encouraged to develop monitoring programmes and undertake activities on the two common indicators on a pilot basis during the initial phase of IMAP.

UNEP/MAP and ACCOBAMS, together with other interested partners, will continue during the initial phase of IMAP to further develop these candidate indicators towards common indicators.

For GES assessment related to EO11, three thresholds need to be established: a spatial and a temporal threshold concerning candidate indicator 26 and a noise threshold concerning candidate indicator 27.

During the initial phase of IMAP, the ACCOBAMS Secretariat in coordination with the competent MAP components will carry out the following tasks with a view to further develop technical aspects of the candidate indicators in particular:

1. Reviewing what spatial and temporal thresholds have been selected by European Member States for implementing impulsive noise indicator of D11

2. Fulfilling action CA 2b1 of the 2014-2016 Work Plan (“Identifying Noise Hotspots for cetaceans in the ACCOBAMS area which is relevant to the Mediterranean Sea Area as provided for in the Barcelona Convention”), in order to provide the necessary baseline information on space-time distribution of impulsive noise sources across the Mediterranean
3. Reviewing ambient noise data available for the Mediterranean Sea as a follow up of the present work in order to identify the threshold for continuous noise indicator 11.1.2.

Appendix 1

Reference list of species and habitats

Explanatory Note/Glossary for parameters, criteria and prioritization used here:

EN Term	EN definition	FR Terme	FR définition
Predominant habitat:	Widely occurring and broadly defined habitat types by abiotic characteristics (e.g. EUNIS level 3), referred to in Table 1 of Annex III to the EC Marine Strategy Framework Directive (2008/56/EC)	Habitats principaux:	Types d'habitats à un haut niveau typologique, définis par des caractéristiques abiotiques (e.g. EUNIS level 3), cités dans le tableau 1 de l'annexe III de la Directive européenne Cadre Stratégie Milieux Marins (2008/56/EC)
Habitat:	This term addresses (as defined in EC Decision 2010/477/UE) both the abiotic characteristics and the associated biological community, treating both elements together (e.g. EUNIS level 5 or 6). This term may also refer to a number of habitat complexes (which means assessing, where appropriate, the composition, extent and relative proportions of habitats within such complexes) and to some functional habitats (such as spawning, breeding, resting, feeding areas and migration routes)	Habitat:	Ce terme (tel que défini dans la Décision CE 2010/477/UE), se réfère à la fois aux caractéristiques abiotiques et à la communauté biologique associée, de façon indissociables (e.g. EUNIS level 5 ou 6). Ce terme peut également se référer à certains complexes d'habitats (impliquant, si approprié, dévaluer la composition, l'étendue et les proportions relatives des habitats composant ce complexe) et à certains habitats fonctionnels (tels que les frayères, les zones de reproduction, de repos, d'alimentation, et les couloirs migratoires)
Functional group (of species):	An ecologically relevant set of species, applied here in particular to the following (highly) mobile species groups: birds, reptiles, marine mammals, fish and cephalopods. Each functional group represents a predominant ecological role (e.g. offshore surface-feeding birds, demersal fish) within the species group. This term is referred to in the EC Decision 2010/477/UE (Part B, species)	Groupe fonctionnel (d'espèces):	Un ensemble écologiquement cohérent d'espèces, appliqué ici en particulier aux espèces (largement) mobiles suivantes: oiseaux, reptiles, mammifères marins, poissons et céphalopodes. Chaque groupe fonctionnel représente un rôle écologique majeur (e.g. oiseaux se nourrissant au large en sub-surface, poissons démersaux) au sein du groupe d'espèces. Ce terme est cité dans la Décision CE 2010/477/UE (Partie B, espèces)
Texel-Faial Criteria	Cf. document downloadable at: http://www.google.fr/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCYQFjAA&url=http%3A%2F%2Fwww.ospar.org%2Fdocuments%2Fdbase%2Fdecrecs%2Fagreements%2F03-13e_texel_faial%2520criteria.doc&ei=r1MQVPP7GYvu aPm7gBA&usg=AFQjCNFFBqKlpeixMYiLZD1JqGJC_rAwTw&sig2=wG6kTCw1ZQvZJwazTNX7iw&bvm=bv.74649129,d.d2s	Critères de Texel-Faial:	Cf. document téléchargeable à: http://www.google.fr/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCIQFjAAahUKEwjzto-7punGAhWIPxQKHYo0B1k&url=http%3A%2F%2Fwww.ospar.org%2Fdocuments%2Fdbase%2Fdecrecs%2Fagreements%2F03-13f_criterestexel-faial.doc&ei=i7KsVbPFKYj_UlprnMgF&usg=AFQjCNEVmntg7oEq-C4n4tbGppuM3B_0w&sig2=eVctr-Vg5--1LEVuFv97-A&bvm=bv.98197061,d.d24
(sub)regional importance (Texel-Faial Criteria)	A high proportion of the habitat or species population (at any time of its life cycle) occurs within a specific biogeographic region and/or (sub)region of national responsibility, within the Mediterranean Sea	importance (sous-)régionale (critère Texel-Faial):	Une grande proportion de l'habitat ou de la population de l'espèce (quel que soit le stades de vie considéré) est situé dans une zone biogéographique spécifique et/ou une (sous-)région relevant d'une responsabilité nationale, en Méditerranée
Rarity (Texel-Faial Criteria)	A habitat is assessed as being rare if it is restricted to a limited number of locations or to small, few and scattered locations in the Mediterranean Sea. A species is rare if the total population size is small. In case of a species that is sessile or of restricted mobility at any time	Rareté (critère Texel-Faial):	Un habitat est dit rare s'il est restreint à un nombre limité de sites ou à quelques petits sites dispersés en Méditerranée, Une espèce est rare si sa population totale est faible. Dans le cas d'une espèce sessile ou à mobilité restreinte, quel que soit le stade de vie considéré, cette espèce est rare si son occurrence est limitée à

	of its life cycle, a species is rare if it occurs in a limited number of locations in the Mediterranean Sea, and in relatively low numbers. In case of a highly mobile species, the total population size will determine rarity		nombre réduit de sites en Méditerranée, et en faibles abondances. Dans le cas d'espèces largement mobiles, la taille de la population détermine sa rareté éventuelle
Key functional role (from Texel-Faial Criteria)	A species (population) or habitat, which function(s) as a key role to support ecosystem processes and interactions. These key functions may be associated to natural productivity, trophic role, remarkable biodiversity or "species functional habitats", such as spawning, breeding, resting and feeding areas and migration routes	Rôle fonctionnel clé (d'après critère Texel-Faial):	Une espèce (population) ou un habitat, dont la(es) fonction(s) ont un rôle clé dans les processus et interactions de l'écosystème. Ces fonctions clés peuvent être associées à une productivité naturelle, un rôle trophique, une biodiversité remarquable, ou aux "habitats fonctionnels d'espèces", tels que les zones de frayères, de reproduction, de repos, d'alimentation et les couloirs migratoires
Sensitivity (Texel-Faial Criteria):	A species (population) or habitat is "sensitive" when: a. it has low resistance (that is, it is easily adversely affected by human activity); and/or b. it has low resilience (that is, after an adverse effect from human activity, recovery is likely to be achieved only over a long period)	Sensibilité (critère Texel-Faial):	Une espèce (population) ou un habitat est "sensible" si: a. il a une faible résistance (c'est-à-dire qu'il est facilement impacté par les activités humaines); et/ou b. il a une faible résilience (c'est-à-dire, qu'après un impact dû à une activité humaine, il n'est susceptible de récupérer qu'après une longue période)
Vulnerability:	A species (population) or habitat is "vulnerable" when it is exposed to a pressure, to which it is sensitive (cf. column N to V)	Vulnérabilité:	Une espèce (population) ou un habitat est "vulnérable" si il est exposé à une pression, à laquelle il est sensible (cf. colonnes N à V)
Declining or threatening (from Texel-Faial Criteria):	A "declining" species (population) or habitat means an observed or indicated significant decline in numbers, extent or quality (quality refers for a species to its life history parameters). The decline may be historic, recent or current. The decline can occur in the whole Mediterranean Sea area or (sub)regionally. Where the decline is "clear and present", and can be linked directly or indirectly to human activity, the species (population) or habitat is also considered to be "currently threatened". Where there is a high probability of significant decline linked directly or indirectly to human activity, the species (population) or habitat is considered to be "potentially threatened"	En déclin ou menacé (d'après critère Texel-Faial):	Une espèce (population) ou un habitat en "déclin" implique une diminution, observée ou mesurée de façon significative, en abondance, étendue ou qualité (qualité se réfère pour une espèce à ses paramètres démographiques). Le déclin peut être historique, récent ou actuel. Le déclin peut avoir lieu sur toute la Méditerranée ou une (sous-)région. Quand le déclin est "clair et avéré", et peut être lié directement ou indirectement à une activité humaine, l'espèce (population) ou l'habitat est aussi considéré comme "actuellement menacé". Quand il y a une forte probabilité de déclin significatif, lié directement ou indirectement à une activité humaine, l'espèce (population) ou l'habitat est considéré comme "potentiellement menacé"
Feasibility (for monitoring):	Existence of methods and protocols to monitor a species (population) or habitat. Resources needed (logistic, technical and human) and actually existing monitoring are detailed in column W to AG	Faisabilité (pour la surveillance):	Existence de méthodes et protocoles pour réaliser le suivi d'une espèce (population) ou d'un habitat. Les ressources nécessaires (logistiques, techniques et humaines) et les suivis actuellement existant sont détaillés dans les colonnes W à AG
Priority:	If a species or habitat meet at least 1 of the Texel-Faial criteria AND is vulnerable AND then it's monitoring is technically feasible, its monitoring should be highly prioritized. Besides, redundancies in selected species or habitats representing specific functional groups/predominant habitats, should be considered.	Priorité:	Si une espèce ou habitat réponds à au moins 1 des critères de Texel-Faial ET est vulnérable ET que son suivi est techniquement faisable, son suivi doit être hautement prioritaire. Par ailleurs, la redondance entre les espèces ou habitats sélectionnés, représentatifs d'un groupe fonctionnel ou habitat principal spécifique, doit être considérée. La priorité haute signifie que des

	Priority mean than sufficient resources (national and/or joint at (sub) regional scale) should be dedicated to acquire relevant data at sufficient spatial and temporal resolution. Low prioritized species or habitats should also be monitored, but data could be acquired at a minimum relevant spatial and temporal resolution, according to available resources (cf. pragmatic approach for assessment scale)		ressources suffisantes (nationales et/ou jointes à l'échelle de la (sous-)région) devraient être dédiées pour acquérir des données pertinentes à une résolution spatiale et temporelle suffisante. Les espèces et habitats moins prioritaires devraient aussi être suivis, mais les données pourraient être acquises à une résolution spatiale et temporelle minimale, mais pertinente, en fonction des ressources disponibles (cf. approche pragmatique pour l'échelle d'évaluation)
Assessment monitoring scale:	For monitoring issue, assessment scale is expressed as the relevant spatial and temporal resolution of required data. These resolutions (number and location of sampling stations, accuracy of remote detection, sampling frequencies, etc.) are likely to be a compromise (cost-efficiency) between "high resolution" (which enable a very accurate and complete assessment, but more expensive assessment) and a more pragmatic approach, identifying a resolution and sampling design in accordance with available resources (less expensive, but which could lead to an incomplete or partial assessment)	Échelle d'évaluation pour la surveillance:	Pour la surveillance, l'échelle d'évaluation correspond au plan d'échantillonnage et aux résolutions spatiale et temporelle pertinentes pour acquérir les données requises. Ces résolutions (nombre et position des stations d'échantillonnage, précision de la télédétection, fréquence d'échantillonnage, etc.) devraient être définies selon un compromis (coût/efficacité) entre une "haute résolution" (permettant une grande précision et une évaluation complète, mais à un coût supérieur), et une approche plus pragmatique, adaptant la résolution et/ou le plan d'échantillonnage, selon les ressources disponibles (moins coûteux, mais pouvant conduire à une évaluation partielle ou incomplète)
Mediolittoral:	Bathymetric level, corresponding to the intertidal benthic area (from higher to lower tide levels); organisms are in there submitted to alternating immersion and emersion	Mediolittoral:	Étage bathymétrique correspondant à la zone benthique intertidale (comprise entre les niveaux des plus hautes et des plus basses mers) ; les peuplements y sont régulièrement soumis aux alternances d'émersion et immersion
Infralittoral:	Bathymetric level, associated to preferential benthic distribution area of photophilic organisms (approximatively, for Mediterranean Sea, from 0 to -50 meters depth, on official marine bathymetric maps)	Infralittoral:	Étage bathymétrique correspondant à la zone benthique de répartition préférentielle des organismes photophiles (approximativement, en Méditerranée, de 0 à -50 mètres, sur les cartes marines bathymétriques officielles)
Circalittoral:	Bathymetric level, associated to preferential benthic distribution area of sciaphilic organisms (approximatively, for Mediterranean Sea, from -50 to -200 meters depth, on official marine bathymetric maps)	Circalittoral:	Étage bathymétrique correspondant à la zone benthique de répartition préférentielle des organismes sciaphiles (approximativement, en Méditerranée, de -50 à -200 mètres, sur les cartes marines bathymétriques officielles)
Bathyal:	Bathymetric level, associated to darkness and continental slope (approximatively from -200 to -2000 meters depth, on official marine bathymetric maps)	Bathyal:	Étage bathymétrique correspondant à la zone aphotique et la pente continentale (approximativement de -200 à -2000 mètres, sur les cartes marines bathymétriques officielles)
Abyssal:	Last bathymetric level, associated to darkness and plains after the continental slope (approximatively below -2000 meters depth, on official marine bathymetric maps)	Abyssal:	Dernier étage bathymétrique correspondant à la zone aphotique et des plaines au bas de la pente continentale (approximativement sous -2000 mètres, sur les cartes marines bathymétriques officielles)
Coastal waters:	This term of "coastal waters" addresses here, for pelagic habitats, relatively low depth marine waters, directly influenced by terrigenous and freshwaters inputs (approximatively from the coast to the beginning of the	Eaux côtières:	Le terme "d'eaux côtières" se réfère ici, pour les habitats pélagiques, à des eaux marines de profondeurs relativement faible, soumises à l'influence directe des apports terrigènes et des eaux douces (approximativement de la côte au début du plateau

	continental shelf)		continental)
Shelf and Oceanic waters:	This term of "shelf and oceanic waters" addresses here, for pelagic habitat, offshore marine waters (shell, bathyal and abyss), less directly influenced by terrigenous and freshwaters inputs. They are characterized by specific physico-chemical conditions and biological communities	Eaux du plateau et océaniques:	Les "eaux du plateau et océaniques" se réfère ici, pour les habitats pélagiques, aux eaux marines situées au large (plateau, bathyal et abysses), moins soumises directement à l'influence des apports terrigènes et des eaux douces. Elles sont caractérisées par des conditions physico-chimiques et des communautés biologiques spécifiques

Species class	Species functional groups	
	CE/OSPAR	FR experts proposal (subdivision of toothed whales)
Marine mammals / Mammifères marins	Baleen whales	baleines à fanons (Mysticètes)
	toothed wales	Odontocètes épipelagiques stricts (alimentation entre 0 à -200 m)
		Odontocètes épi- et méso-bathy-pélagiques (alimentation de 0 à >-200 m)
Seals	Phoques (pinnipèdes)	
Reptiles	Turtles	Tortues marines
Birds / Oiseaux	Coastal top predators	Prédateur supérieur côtier
	intertidal benthic-feeders	à alimentation benthique littoral, côtier (côtier)
	inshore benthic feeders	à alimentation benthique subtidale, côtier (eaux côtières)
	inshore surface-feeders	à alimentation pélagique de surface, côtier (eaux côtières)
	inshore pelagic feeders	à alimentation pélagique de sub-surface, côtier (eaux côtières)
	offshore surface feeders	à alimentation pélagique de surface, au large (eaux du plateau et océaniques)
	offshore pelagic feeders	à alimentation pélagique de sub-surface, au large (eaux du plateau et océaniques)
Fish / Poissons	Diadromous bony fish	Poissons diadromes
	Demersal coastal bony fish	Poissons osseux démersaux côtiers (eaux côtières)
	Demersal coastal elasmobranch	Elasmobranches démersaux côtiers (eaux côtières)
	Pelagic coastal bony fish	Poissons osseux pélagiques côtiers (eaux côtières)
	Pelagic coastal elasmobranchs	elasmobranches pélagiques côtiers (eaux côtières)
	Demersal offshore bony fish	Poissons osseux démersaux du large (eaux du plateau et océaniques)
	Demersal offshore elasmobranchs	elasmobranches démersaux du large (eaux du plateau et océaniques)
	Pelagic offshore bony fish	Poissons osseux pélagiques du large (eaux du plateau et océaniques)
	Pelagic offshore elasmobranchs	elasmobranches pélagiques du large (eaux du plateau et océaniques)
Cephalopods / Céphalopodes	Coastal cephalopods	Céphalopodes côtiers (eaux côtières)
	Offshore cephalopods	Céphalopodes du large (plateau et océaniques)

Appendix 2

Pollution/Litter related Assessment Criteria

Pollution/Litter related assessment criteria

a) Eutrophication

It is accepted that surface density is adopted as a proxy indicator for static stability as both temperature and salinity are relevant in the dynamic behaviour of a coastal marine system. More information on typology criteria and setting is presented in document UNEP(DEPI)/MED WG 417/Inf.15.

The different coastal water types, in an ecological perspective, can be described as follows:

- Type I coastal sites highly influenced by freshwater inputs
- Type IIA coastal sites moderately influenced not directly affected by freshwater inputs (Continent influence)
- Type IIIW continental coast, coastal sites not influenced/affected by freshwater inputs (Western Basin)
- Type IIIE not influenced by freshwater input (Eastern Basin)
- Type Island: coast (Western Basin)

In addition, coastal water type III was split in two different sub basins, the Western and the Eastern Mediterranean ones, according to the different trophic conditions and is well documented in literature.

It is recommended to define the major coastal water types in the Mediterranean that have been inter calibrated (applicable for phytoplankton only) as presented in the table 1².

Table 1

	Type I	Type IIA, IIA Adriatic	Type IIIW	Type IIIE	Type Island-W
σ_t (density)	<25	25<d<27	>27	>27	All range
salinity	<34.5	34.5<S<37.5	>37.5	>37.5	All range

With the view to assess eutrophication, it is recommended to rely on the classification scheme on chl-a concentration ($\mu\text{g/l}$) in coastal waters as a parameter easily applicable by all Mediterranean countries based on the indicative thresholds and reference values presented in Table 2.

²Reference and threshold (Good/Moderate status) derived values (G-mean annual values based on long time series (>5 years) of monthly sampling at least) differ from type to type on a sub-regional scale and were built with different strategies.

Table 2 Coastal Water types reference conditions and boundaries in the Mediterranean

Coastal Water Typology	Reference conditions of Chla ($\mu\text{g L}^{-1}$)		Boundaries of Chla ($\mu\text{g L}^{-1}$) for G/M status	
	G_mean	90 % percentile	G_mean	90 % percentile
Type I	1,4	3,33 ³ - 3,93 ⁴	6,3	10 ² - 17,7 ³
Type II-FR-SP		1,9		3,58
Type II-A Adriatic	0,33	0,8	1,5	4,0
Type II-B Tyrrhenian	0,32	0,77	1,2	2,9
Type III-W Adriatic			0,64	1,7
Type III-W Tyrrhenian			0,48	1,17
Type III-W FR-SP		0,9		1,80
Type III-E		0,1		0,4
Type Island-W		0,6		1,2 – 1,22

b) Marine litter baselines values

Indicator	minimum value	maximum value	mean value	Proposed baseline
16. Beaches (items/100 m)	11	3600	920	450-1400
17. Floating litter (items/km ²)	0	195	3.9	3-5
17. Sea floor (items/km ²)	0	7700	179	130-230
17. Microplastics (items/km ²)	0	892000	115000	100000-250000
18. Sea Turtles Affected turtles (%)	14%	92.5%	45.9%	40-60%
Ingested litter(g)	0	14	1.37	1-3

“It must be noted that the amount of existing information is limited to set definitive baselines that may be adjusted once the national monitoring programs could provide additional data. Moreover, average values over large areas are difficult to harmonize, in particular for beach litter. Also, the setting or derivation of baselines should take the local conditions into account and may follow a more localized approach. Finally, additional specific baselines may be decided by CPs on specific litter categories, especially when they may represent an important part of litter found or a specific interest (targeted measures, etc.).”

c) Contaminants

³Applicable to Golf of Lion Type I coastal waters

⁴Applicable to Adriatic type I coastal waters

1. It is recommended to follow the OSPAR approach of a “traffic light” system for both contaminant concentrations and biological responses where there are two “thresholds” T_0 and T_1 to be defined (OSPAR, 2008; Davies et al., 2012);
2. It is recommended to adopt background concentrations (BCs) and background assessment concentrations (BACs) of contaminants (for naturally occurring substances) in sediments obtained from the analysis of pre-industrial layers of dated sediment cores established for the Mediterranean region (UNEP(DEPI)/MED WG. 365/Inf.8) where appropriate, based on data availability;
3. It is recommended to use for indicative purposes the existing environmental assessment criteria (EACs) of contaminants in sediments and biota and of biological responses established by ICES/OSPAR until new eco-toxicological information is available including for Mediterranean species, (OSPAR, 2008; Davies et al., 2012);
4. It is recommended to use the existing BACs and EACs of LMS, SoS, MN frequency and AChE activity biomarkers established (Davies et al., 2012) and further work to develop and discuss new BAC by using data from organisms sampled at sites/areas which the Mediterranean contracting parties consider to be reference stations/areas, to be defined based on commonly agreed criteria.

Table 1(a): UNEP/MAP BAC Levels for Trace Metals in Sediments

UNEP/MAP, 2011. Development of Assessment Criteria for hazardous Substances in the Mediterranean. UNEP(DEPI)/MED WG. 365/Inf.8. Athens, 2011.

Contaminant	Sediments ($\mu\text{g}/\text{kg d.w.}$)
Cd	150
Hg	45
Pb	30,000

Table 1(b) : Benedicto BAC Levels for Trace Metals in Mussels and Fish

Contaminant	^a Mussels (<i>Mytilus galloprovincialis</i>) ($\text{mg}/\text{kg d.w.}$)	^b Mussels (<i>Brachidontes variabilis</i>) ($\text{mg}/\text{kg d.w.}$)	^a Fish (<i>Mullus barbatus</i>) ($\text{mg}/\text{kg d.w.}$)
Cd	1.088	1.00	0.016 ^c
Hg	0.188	0.17	0.600
Pb	3.80	1.00	0.559

^a preliminary data for the NW Mediterranean; ^b additional BAC data provided by Lebanon; ^c earlier estimation (UNEP(DEPI)/MED WG.365/Inf.8)

Table 2: OSPAR EAC Levels

OSPAR Commission, Agreement number 2009-2. Agreement on CEMP Assessment Criteria for the QSR 2010. Publication number 2009/461. CEMP: 2008/2009 Assessment of trends and concentrations of selected hazardous substances in sediments and biota. Publication number 2009/390. OSPAR QSR 2000-Chapter 4.

Table 2(a) Polycyclic Aromatic Hydrocarbons

Contaminant	Mussels ($\mu\text{g}/\text{kg d.w.}$)	^a Sediments($\mu\text{g}/\text{kg d.w.}$)
Phenantrene	1700	240

Anthracene	290	85
Fluorantene	110	600
Pyrene	100	665
Benzo[a]anthracene	80	261
Chrysene	-	384
Benzo[k]fluoranthene	260	-
Benzo[a]pyrene	600	430
Benzo[ghi]perylene	110	85
Indene[123-c,d]pyrene	-	240

^a Effects Range Low (ERLs)

Table 2(b) Organochlorinated Contaminants

Contaminant	Mussels ($\mu\text{g}/\text{kg}$ d.w.)	Sediments ($\mu\text{g}/\text{kg}$ d.w.)	Fish ($\mu\text{g}/\text{kg}$ lipid)
CB28	3.2	-	64
CB52	5.4	-	108
CB101	6.0	-	120
CB105	-	-	-
CB118	1.2	-	24
CB138	15.8	-	316
CB153	80	-	1600
CB156	-	-	-
CB180	24	-	480
Σ 7CBS ICES	-	11.5	-
Lindane	1.45	3.0 ^c	11
α -HCH	-	-	-
pp'DDE	5-50 ^a	2.2 ^c	-
HCB	-	20.0 ^c	-
Dieldrin	5-50 ^a	2.0 ^c	-

^a earlier data from QSR2000 Report; ^b $\mu\text{g}/\text{kg}$ wet weight (CEMP 2008/2009); ^c Effects Range Low (ERLs)

Table 3: Davies Levels for Biomarkers

ICES Cooperative Research Report No. 315. 277 pp.

Biomarkers/Bioassays	BAC levels in Mussels (<i>Mytilus galloprovincialis</i>)(mg/kg d.w.)	EAC levels in Mussels (<i>Mytilus galloprovincialis</i>) (mg/kg d.w.)
Stress on Stress (days)	10	5
Lysosomal membrane stability Neutral Red Retention Assay (minutes)	120	50
Lysosomal membrane stability Cytochemical method (minutes)	20	10
AChE activity (nmol min ⁻¹ mg ⁻¹ protein) in gills (French Mediterranean waters)	29	20
AChE activity (nmol min ⁻¹ mg ⁻¹ protein) in gills (Spanish Mediterranean waters)	15	10
Micronuclei frequency (0/00) in haemocytes)	3,9	-

Draft Decision IG.22/8

**Implementation of Updated National Action Plans (NAPs),
Containing Measures and Timetables for their Implementation**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as the Barcelona Convention,

Recalling Article 5 of the LBS Protocol of the Barcelona Convention on elaboration and implementation of national and regional action plans and programmes containing measures and timetables for their implementation;

Acknowledging the progress achieved through the implementation of NAPs endorsed by the 15th Meeting of the Contracting Parties for the period 2003-2013, as concluded in the midterm evaluation of SAP/ NAP implementation carried out by UNEP/MAP and UfM Secretariat;

Noting the renewed commitment to achieve the Ecosystem Approach-based Ecological Objectives set by the Contracting Parties of the Barcelona Convention and its Protocols, as well as Clean Mediterranean by 2020 as stated in the Athens Declaration of the Union for the Mediterranean (UfM) Ministerial Meeting on Environment and Climate Change (2014);

Appreciating the work carried by the Contracting Parties to update the NAPs, and to produce coherent and financially sustainable policy documents integrating GES, Regional Plans commitments and SAP-MED targets;

Expressing appreciation to the UfM and the European Union for their political and financial support provided to the NAP update process in collaboration with UNEP/MAP Secretariat;

Endorses the NAPs 2016 – 2025 as unique policy documents comprising legally binding programmes of measures and timetables required to achieve GES and the Regional Plans/LBS Protocols objectives in the framework of SAP-MED.

Urges the Contracting Parties to implement NAPs, strengthen the coherence between NAP programmes of measures and other national policies, foster conditions for their long-term sustainability, and report on their implementation in the framework of Article 13 of the LBS Protocol;

Urges partners, international organisations in particular GEF and UfM and financial institutions to support implementation of NAPs through available mechanisms, facilities and programmes to contribute to the objective of achieving GES in the Mediterranean;

Requests the Secretariat (MED POL) to undertake in 2020 an indicator-based midterm evaluation of the NAPs implementation based on the existing reporting system and in close collaboration with the Contracting Parties for submission to COP 21.

Draft Decision IG.22/9

**Guidelines on Best Environmental Practices (BEP)
for the Environmental Sound Management (ESM) of Mercury Contaminated Sites**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as the Barcelona Convention,

Recalling Articles 4, 5, 15 of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and Activities, providing for legally binding obligations to take measures to eliminate and phase out pollution from land based sources;

Recalling also the obligations of the Regional Plan on the reduction of inputs of Mercury adopted by Decision IG 20/8.1 of COP 17 (Paris, France, February 2012) providing for programmes of measures and timetables to prevent and reduce the adverse effects of mercury on human health and the marine and coastal environment in the Mediterranean, herein after referred to as the Regional Plan;

Based on Article 4, paragraph 5 of the Regional Plan providing for approval by the Contracting Parties of Guidelines on BEP and ESM of mercury contaminated sites;

Taking into account the work of the Minamata Convention on Mercury and in particular on its work on Best Available Techniques and Best Environmental Practices;

Having considered the report of the MED POL Focal Points meeting held in Malta, in June 2015;

Adopts the Guidelines on best environmental practices for the management of mercury contaminated sites, hereinafter referred to as the Guidelines, which are contained in the Annex to this decision;

Urges the Contracting Parties to take the necessary measures to ensure the ESM of Mercury contaminated sites including at least the old mines and decommissioned chlor-alkali plants are in line with the Guidelines;

Urges the Contracting Parties to report on the implementation of the Regional Plan, including the measures related to the Guidelines, by the end of 2016 in order for COP 20 to review them as provided for in Article 6 of the Regional Plan;

Encourages all Contracting Parties to ratify the Minamata Convention on Mercury to further demonstrate the Mediterranean region commitment to prevent, reduce, eliminate and manage in an environmental sound manner mercury inputs and waste;

Requests the Secretariat (MEDPOL and SCP/RAC) to facilitate the work of the Contracting Parties for the implementation of the Guidelines, making efforts to ensure synergies with the relevant work under the Minamata Convention on Mercury, and collaboration with UfM H2020.

ANNEX
Guidelines on Best Environmental Practices (BEP)
for the Environmental Sound Management (ESM) of Mercury Contaminated Sites

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APPENDIX 1: CASE STUDIES

1. RECONDITIONING OF THE “CERCO DE SAN TEODORO” SLAG HEAP. MINAS DE ALMADÉN (CIUDAD REAL, SPAIN)
2. DECONTAMINATION OF THE FLIX DAM IN THE EBRO RIVER (Tarragona, Spain)
3. ENVIRONMENTALLY SAFE DECOMMISSION OF A MERCURY CELL (CHLOR-ALKALI PLANT)
4. STABILIZATION OF SOILS CONTAMINATED WITH HEAVY METALS USING LOW-GRADE MAGNESIUM OXIDE

1. Introduction

In general, a *contaminated site* is a place where there is an accumulation of toxic substances or residues which may affect the soil, groundwater, sediments and, in the case of mercury, even air to levels that pose a risk to the environment or human health or be above the safe limits recommended for a specific use.

Metallic mercury is a liquid at room temperature, the only metal with this property and also evaporates at room temperature. Mercury is one of the most problematic toxic substances that may be found at contaminated sites: the special physical and chemical characteristics of mercury make a challenge the management of mercury contaminated sites, especially when it comes to remediate large industrial sites and mercury mining sites. Due to its properties, once mercury has entered the environment, it remains there adopting different physical and chemical forms reaching all of the environmental compartments to a greater or lesser extent: air, soil, water, sediments and even the buildings used for the activity.

Inorganic mercury can be transformed by bacteria into methylmercury in sediments and soils, at a rate depending of the physic-chemical characteristics of the soil. Methylmercury (CH_3Hg^+) is a highly toxic bioavailable form of organic mercury and cumulative throughout the food chain. Consumption of fish and shellfish poisoned by direct dumping of methylmercury in the wastewater from a chemical factory in the Minamata bay (Japan) during decades was the cause of one of the worst episodes of chemical pollution recorded in the past century.

The three major forms (speciation) that can be found in the environment are:

- Metallic mercury (Hg^0), in liquid and gas equilibrium depending of the temperature.
- Inorganic mercury (Hg^{2+} , HgO , HgCl_2 , $\text{HgCl}\dots$)¹
- Organic mercury ($\text{CH}_3\text{Hg-CH}_3$, $\text{CH}_3\text{Hg-NH}_2$, $\text{CH}_3\text{Hg-SH}\dots$)

Various activities have led historically to mercury-contaminated sites, generally as a result of lack of environmental regulations, use of pollutant technologies and poorly waste management practices. These activities mainly include: mercury mining and quarrying²; the chlor-alkali industry; coal-fired power-plants; cement industry; production of pig iron, steel and non-ferrous metals; the waste sector; the production of chemical substances, chemical fertilizers, pharmaceutical products and catalysers; batteries and fluorescent lights.

Currently the most important source of emission of mercury in the Mediterranean region are the coal-fired power plants³.

Remediation of a contaminated site is a corrective measure to mitigate or eliminate the pollution. The first step towards achieving this is to thoroughly examine the origin, extent, type and amount of existing contamination. Once these parameters have been defined, the next step is to determine how and to what extent the environment and human health is or may be affected. Finally, and only after having investigated the aforementioned aspects, corrective measures should be proposed and adopted to remediate safely the environmental damage and limit or eliminate the risk of the contamination to any environmental vector and to the human health.

¹ Mercury can easily change its chemical state in the environment because of the low $\text{Hg}^{2+}/\text{Hg}^0$ standard potential, thus causing drastic changes in its mobility and toxicity.

² The most common ore form of Hg is cinnabar (HgS). It has been exploited in the Mediterranean region mainly in Spain and also in Algeria, Slovenia, Turkey and Italy.

³ "Diagnosis of Mercury in the Mediterranean Countries". CP/RAC, 2010.

2. International Legislation

2.1 Minamata Convention on Mercury⁴

The Minamata Convention on Mercury provides for control and reductions across a range of products, processes and industries where mercury is used, released or emitted.

With regard to contaminated sites, the global Convention on mercury shall adopt guidance on managing contaminated sites, but does not pose an obligation on remediation of contaminated sites.

The parties are encouraged to cooperate in the formulation of strategies and the execution of activities to identify measure, classify depending on priorities, manage and, as appropriate, remediate contaminated sites.

2.2. Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention)

2.2.1 **Common Measures**, adopted in the 5th Conference of the Parties (1987) of the Barcelona Convention.

- The maximum concentration of mercury in effluent before dilution in the Mediterranean Sea is 50 µg/l.
- New outlets for mercury-containing effluents in the Mediterranean Sea should be designed and constructed to prevent an increase of mercury concentration in the biota and sediments to above 50% of the background level in a 5 km radius from the discharge point.

2.2.2 **Regional Plan on the reduction of inputs of Mercury** (2012).

In the framework of the implementation of article 15 of the Protocol of Land Based Sources of pollution, the Mediterranean Action Plan (MAP) of the Barcelona Convention adopted in 2012 a legally binding text in order to reduce Mercury pollution, by which the Parties should establish limits of emission (ELVs) to different industrial sectors, among other measures.

An inventory of contaminated sites - including mercury mines and chloralkali facilities which use or have used in the past mercury cells-, has to be forwarded to the Secretariat of the Barcelona Convention. The countries have also to **identify and envisage appropriate measures for these sites**.

2.3. European Union Legislation

2.3.1 Surface water and Groundwater

- 2.3.1.1 **Council Directive 98/83/CE** of 3 November 1998, on the quality of water intended for human consumption. Sets a limit for Mercury of 1 microgram per litre.
- 2.3.1.2 **Directive 2006/118/EC** of 12 December 2006, on the protection of groundwater against pollution and deterioration.
- Indicates criteria for assessing good chemical status of groundwater.
 - Set the threshold values of the analytical parameters.

⁴Open for signature in 2013 and enters into force in 2018

- Mercury is included in the minimum list of pollutants or groups of pollutants and indicators of pollution that member states should establish.

2.3.2 Soils

2.3.2.1 **Council Directive 86/278/EEC** of 12 June 1986 on the protection of the environment, and in particular of the soil when sewage sludge is used in agriculture.

2.3.2.2 **Council Directive 91/156/EEC** of 18 March 1991 establishes the obligation to draw up inventories of contaminated sites.

2.3.2.3 The thematic strategy for soil protection, **Communication COM[2006]231-final**, includes concepts like:

- the establishment of a legal framework to protect and use the soil sustainably;
- the integration of protection policies;
- the identification of risk areas
- the inventory of contaminated land and facilities
- the restoration of degraded soils.

2.3.2.4 The implementation of the Strategy and ongoing activities since 2006 were presented in document **COM (2012) 46 final**.

2.3.2.5 **Directive 2010/75/EU** on Industrial Emissions (IPPC). The industrial activities dealing with hazardous substances will have to establish through a baseline report the state of soil and groundwater before the start of activities and after the cessation of the activities.

2.3.2.6 **Directive 99/31 on landfill of waste**. The operator shall be responsible for the maintenance, monitoring and control in the after-care phase for as long as may be required by the competent authority, taking into account the time during which the landfill could present hazards. In some countries this period is not inferior to 30 years.

2.3.3 All media

2.3.3.1 **Regulation EC no.166/2006**, concerning the establishment of an European pollutant release and transfer Register (E-PRTR), setting as compulsory to inform on emissions to air, water and soil above given limits.

2.3.4 Health and safety at work

2.3.4.1 **Commission Directive 2009/161/EU** establishing a list of indicative occupational exposure limit values.

2.3.5 Transport of hazardous waste

2.3.5.1 **European Agreement** concerning the international carriage of dangerous goods by road (ADR)

2.3.5.2 **Regulation EC 1013/2006** on shipments of waste specifies the procedures for controlling waste shipments to improve environmental protection.

2.3.5.3 **Directive 2008/98** on waste (Framework Directive), includes the conditions for transportation of waste, including minimum standards of transporters.

3. Identification of mercury-contaminated sites

The first step is to produce a census of current and former industrial sites that hosted industrial activities likely to have used - intentionally or unintentionally - mercury in the process or be emitted or dumped into the environment (see list of activities in the introduction). To this list, sites can be added for which analyses and diagnoses revealed the presence of significant mercury anomalies in the soil, air, water, sediments. To detect these anomalies, it is necessary to compare the results found on the site with those of natural or anthropogenic geological background.

The realization of studies on the site to characterize the pollution in its breadth and scope is a critical phase to define the actions to undertake cleanup activities later.

To characterize the pollution it should be established:

- What are the forms of mercury present (metallic mercury, methyl mercury ...);
- The amount of mercury;
- What are the environmental compartments impacted;
- What is the extent of the contaminated area;
- The behavior of mercury in environmental compartments;
- What are the consequences of the pollution, both in and out of the site.

Several tools can be implemented on the site:

- Historical studies, literature and recollection of memories from workers may reconstitute industrial and environmental practices in the site to target potentially polluted areas and type of pollutants potentially present;
- The hydro-geological studies will show the soil characteristics (granulometry, composition of soil and rock, fragmentation areas..) and underground hydrological networks (flow direction of the water, connection between groundwater tables, depth, variation in levels of the groundwater table..). This helps to identify potential transfer and the possible pollution extent.

Information gathering will also seek to identify issues to protect in the site and if the pollution exits the site: local population, uses of the environment (orchards, fishing, water consumption, swimming areas, walking areas ...), media exposure, and the protection of natural resources.

The program of investigations conducted on the site defines environmental compartments and study samples to be taken in order to ultimately develop the conceptual site layout. The latter can map the relationships between the sources of pollution, the various transfer media and issues to protect.

The environmental compartments to be studied are water (surface, groundwater); biota (fish, plants,..); soil, soil gas and sediments and air.

The sampling and analyzes have to be performed according to the protocols and standards. In the case of mercury pollution, it is convenient to associate each sampling with a collection of field observations and measurements of parameters to be able to assign bias indices to the results. These observations or parameters taken into consideration may be:

- In the air: temperature and internal pressure, temperature and pressure of the outside air;

- In the soil: environment in the area of sampling (sub-slab, bare soil, grassy floor, soil with nearby trees...), soil type (natural, backfills, lithology, homogeneity/ heterogeneity, granulometry, moisture, etc.) soil temperature, ambient air temperature, pH, Eh, dissolved oxygen, organic content (TOC), iron, sulfates, major element and/or traces characterizing the geochemical background, chlorinated solvents (HVOOC, chlorinated monocyclic aromatic compounds, total hydrocarbons, etc.), types of bacteria present in the soil (anaerobic, aerobic ...);
- In the soil gas: temperature and pressure of the soil, temperature and air pressure outside;
- In the water: pH, Eh, dissolved oxygen, electron acceptors (nitrates, nitrites sulfates, iron and manganese), content of chlorides, COD;
- In sediments: pH, Eh, sulfides / sulfates, Total Organic Carbon (TOC), granulometry.

If there are droplets of mercury in soil or sediments, the results may be biased depending if the droplet is taken or not in the sample, especially if the weight of the sample is very small. Sampling sizes should be carefully considered in this case to minimize this risk. A good safety measure to validate the results is to include also sampling and measurements of soil gas.

During analysis of mercury in the sample, it is necessary to perform mercury speciation, which will let to have a precise evaluation of the toxicity, lability and the associated risks. The speciation will distinguish the different forms of mercury present: total mercury, dissolved elemental mercury, dissolved reactive mercury, gaseous mercury Hg^0 , particulate and colloidal mercury.

Taking into account that metallic mercury is the most present form (99%) in the air and soil gas, the speciation in the samples should preferably be carried out in water - groundwater and surface water -, soil and sediments.

Sampling is described in more detail in chapter 5.

3.1 Stage I: Preliminary report on the situation

The preliminary report should contain a theoretical model of the mercury-contaminated site that draws on all of the previously known information. Data on the following aspects will be gathered during this stage:

- ✓ The location, surface area, and details of the physiographic region of the site;
- ✓ Historical records of the site and the surrounding area (climatology, etc.);
- ✓ Past, current and future uses of the place;
- ✓ Analytical data from previous studies;
- ✓ A survey of the site and the nearby area.

One important tool that helps to identify, quantify and characterize the contamination is a list of the activities and processes that have taken place on the site associated with mercury use and the estimated amount of mercury-containing wastes.

Once these factors have been identified, stage II should be carried out. This stage involves the drafting of a more detailed additional report to assess the degree of mercury contamination.

3.2 Stage II: Additional report

This report will contain the information required to draw conclusions and determine **whether or not** a more in-depth analysis is needed.

It is advisable to carry out a preliminary site inspection to meet three specific objectives: **a) describe the site, b) examine the type of contamination produced** by the mercury and **c) define the mechanisms of mercury mobility and the points of exposure**.

If detailed studies of the site are required, the environmental characterization stage will be carried out (Chapter 5).

The three specific objectives are discussed in more detail below.

3.2.1 Description of the site

This should include generalities on the location of the site, climatology, hydrology, hydrogeology, the demography of the area (size and distance from the nearest population), and potential environmental affection.

The report should include at least the following data:

- **Location.** A complete description of the location of the site and access to it. Geographic information on the site. Potential movement of the material deposited there, the production processes carried out, the source of mercury waste, amounts of waste, etc.;
- **Form and structure of any facilities.** Geometric characteristics, the building system and sequence, an estimation of the volume of material, the boundaries of the site and the uses of the immediately adjacent area;
- **Climatology.** A complete description of the climate using all available data, the average seasonal temperature, the annual rainfall and its distribution, the maximum precipitation, the predominant wind direction and seasonal wind patterns;
- **Geology of the area,** to discover the geological formations and the rocks found at the site, along with their characteristics;
- **Edaphology and land uses.** A complete description of the kinds of soil at the site, along with the soil characteristics and the land uses: industrial, agricultural, livestock farming, forestry, crop types, etc.;
- **Surface drainage network.** A description of the fluvial flow throughout the year, permanent or seasonal rivers;
- **Socioeconomic aspects.** The demography and economy of the area.

3.2.2 Type of contamination

Unless chemical analyses have been carried out, it is difficult to accurately determine which contaminants are present at a site. However, during a site visit, it is possible to define with sufficient clarity the type of mercury contamination that has taken place. To achieve this, it is essential to find out about the activities and processes carried out in the area of interest, through interviews with the local authorities and with the

population of the surrounding area. Information that is gathered in this way must always be summarized and filtered, particularly if the polluting activity was halted a long time ago.

The site should be defined in as much detail as possible in relation to the geometric and physical characteristic of the structure or structures that could potentially produce the contamination.

3.2.3 Identify the mechanisms of mercury mobility and points of exposure

A description of the site and of the type of contamination will enable us to predict the mechanisms of mercury mobility and the environmental compartments that are affected, where applicable. A good selection of points of exposure is extremely important, as environmental sampling should be comprehensive.

During the first site visit, the specialist in charge of the study should also define the areas in which there is no evidence of contamination. These areas will be used to take reference samples, which will serve to *establish the natural or background level of mercury in the study area.*

A preliminary precautionary decision can be made to limit access and uses of the potentially contaminated area if knowledge of points of exposure gained in this first visit leads to the conclusion that there may be an exposure risk for people or animals. The relevant local authority must be informed of this decision. The advisability of the measure can be reviewed later when the results of the analyses are available.

4 Identification of environmental impacts

National environmental safety and protection criteria should be used as a reference to identify environmental impacts at the contaminated site.

If no specific regulations exist, the principle of prudence should be considered in the study of the mercury-contaminated site. In this case, applicable published data, recommendations and international guidelines should be used as a reference. The conclusions obtained in this way and the decision of the relevant authority/ies will enable future actions to be evaluated.

As mercury is mobile, environmental impacts should be assessed in the various environmental compartments to determine the following risks.

Hydrological risk:

- Alterations in natural surface drainage and contamination of river beds due to runoff and leachate from the contaminated site;
- Changes in the courses of streams adjacent to the site due to the accumulation or piling up of material in the beds, which may cut off the natural flow or be washed away in a flood and pollute the downstream.

Atmospheric risks:

- Resuspension or reemission of particles of dust from the mercury-contaminated site that are carried by the winds;
- Regasification and release of mercury present in piled up or contaminated materials, due to seasonal changes in temperature.

Changes in soils:

- Occupancy by accumulation of materials;

- Nearby soil affection by dispersion of materials from the contaminated site, the deposition of dust or the runoff of rainwater.

Impact on vegetation and wildlife:

- Affection of plant species from the area and movement of wildlife to adjacent habitats.

Morphology and landscape:

- Visual impact on the main basins in the natural landscape due to the effect of piling up of material, lack of vegetation or colour changes.

5 Environmental characterization of mercury-contaminated sites

The selection of the environmental compartments that should be sampled will depend on the characteristics of the contaminated site or location: each site is different, so criteria that apply to one might not be applicable to another. In some places, surface water and sediment should be sampled; in others soil sampling may be sufficient; and in yet others emissions should be measured and soil, surface water and groundwater should be sampled.

Sampling and analyses are essential elements in the assessment of mercury-contaminated sites: it will determine the extent of soil contamination with environmental damage, and the precise boundaries of contaminated areas.

When mercury contamination is detected at a site, it should also be sought in the surrounding area. Sampling should be carried out both 'inside' and 'outside' the site, to assess the possibility that the contamination affects adjacent surroundings.

In all cases, it is essential to obtain a reference sample to determine the background levels of mercury. If the site is in a mining area, a great deal of caution must be taken in defining the **reference level**. The mineral deposits could extend beyond the limits of the mine, due to the continuation of the geological formation that contains the deposit. Thus, high metal content results could be obtained that are not strictly due to the mining activity. In these cases, special attention should be paid to soils and aquifers.

Sampling

The tasks of sampling, analysis and monitoring should be carried out by qualified professionals, in accordance with a well-thought-out plan, using widely accepted methods. The same methods should be used throughout the programme.

It should be stressed the importance that sampling has on a decontamination project. Sampling errors or deviation from the standard operating procedures could produce data detrimental to the programme, which is why the samples must be representative and must conform to the desired levels of reliability. Samples should be preserved and stored in the shortest time possible after collection. The time elapsed between the taking of samples and their preparation for analysis should be the minimum, and is recommended to maintain the samples refrigerated until delivered to the Laboratory.

In addition, rigorous quality assurance and control measures should be applied.

Sampling may be selective, systematic and random, including all matrices (soil, sediment, water):

- Selective sampling

The sample collection points are determined by the experience of the sampler, and usually include factors such as the visibility of the area of a chemical spill, changes in soil color, areas of previous physical disturbance or areas with no vegetation or dead vegetation. In environmental studies, selective sampling is often the basis of an exploratory investigation.

- **Systematic sampling**
It is useful at sites with chemical spills or aerial deposition of pollutants, this method is useful to document probable concentration gradients and is often used in monitoring programs. The points of sampling can form various patterns in the soil: zigzag, diagonal, grid, sinuous, etc. Subsamples should also be taken at each vertex where the direction of the pattern changes.
- **Random Sampling**
Allows every possible combination of sample units to be selected and the number of possible combinations is limited only by the size of the sample.

Analyses

In order to obtain significant, acceptable results, the analytical laboratory should have the required infrastructure and proven experience with the matrix and type of mercury to be analyzed. One excellent way to verify the validity of results is the participation in an inter-laboratory comparison programme.

In addition, procedures such as homogenization and acceptance criteria for handling and preparing samples in the laboratory should be established. Chapter 6 deals with sample preparation and analytical considerations. For further considerations about the pretreatment of the samples, consult the standard NEN-EN-16179: 2012 “**Sludge, treated biowaste and soil: Guidance for sample pretreatment**”

The methods to analyze the various matrices of mercury may assess the total mercury content or the speciation of mercury. Some have been defined by the International Organization for Standardization (ISO) and the European Committee for Standardization (CEN). Other national methods have been drawn up, such as those of the United States (EPA) or Japan.

The following criteria must be met to obtain high quality results:

- a) Specification of the analytical technique;
- b) Presentation of reports, according to the established quality procedure;
- c) Maintenance of the analytical equipment;
- d) Validation of all of the methods used (including the laboratory's own methods);
- e) Training of laboratory staff.

In addition, procedures such as homogenization and acceptance criteria for handling and preparing samples in the laboratory should be established.

5.1 Characterization of surface water and groundwater

Analysis of water samples is usually carried out in the lab rather than in the field. However some field testing is possible. Use of Teflon bottles washed with HCl acid is recommended as a good means of preventing cross contamination. Ensure the acid used is mercury-free, as acids can serve as a source of various contaminants, including Hg.

Speciation in water is an important topic for the understanding of mercury behavior in the environment and for the treatability of water contaminated with mercury. Various forms of Hg arising from various

means of treatment of the water sample have to be distinguished (e.g. filtration of sample and treatment with BrCl yields information on $Hg_D = Hg^o + Hg_R + Hg_C$; however acid digestion followed by analysis yields information on $Hg_T = Hg_P + Hg_D$):

- Hg_T = total
- Hg_P = particulate
- Hg_D = dissolved Hg
- Hg_R = reactive
- Hg^o = gaseous
- Hg_C = colloidal / residual

Analysis of water samples for methyl-Hg may be accomplished with the use of isotopic tracers and GC-ICP-MS analysis.

5.1.1 Surface water

The mercury content of surface water at the contaminated site and in the surrounding area should be studied, as water may act as a pathway for the dispersal of contamination by leaching from the site.

To determine the impact of the contaminated site on surface water, an analysis will be carried out upstream of the supposed mercury point source and downstream of all the possible points of exposure. This analysis should focus on points at which the water is used for human consumption, recreation, cleaning clothes, etc.

Unfiltered samples are generally used to analyse surface water. In addition, mercury sampling must be carried out in *all of the seasons*, that is, in periods of rain and drought, heat and cold.

Whenever a body of surface water is analysed, information should be gathered on the **sediments**. For this purpose, simple and surface samples (0-5 cm) should be taken at places upstream and downstream of the pollution point source.

In areas where contamination is found in water, it is important to know if the aquatic fauna is fished for food, in order to assess the possibility of fishing restrictions.

Once the drainage network has been defined in the additional report, a sampling campaign should be designed for liquids and solids (sediments). The aim is to assess:

- 1- the water quality in the area surrounding the site;
- 2- the sediment quality in stream beds in the area;
- 3- whether sediments are affected by contaminated material or by the contaminant itself carried by the water.

The following tasks should be carried out to design the sampling campaign:

- Inventory of surface water points;
- Field survey of all the types of water points;
- Selection of sampling points and the period (or periods) most suitable for carrying out the sampling, depending on the climate;
- Establishment of background mercury levels in the area. Sampling points should be selected upstream of the study area, to assess the levels of mercury present before the water reaches the polluted area.

Mercury levels in surface water that are above the limits established for water for human consumption (1 µg/l) should generally be sufficient to merit an in-depth analysis of the source. Such levels could be proof of contamination or due to natural enrichment.

5.1.2 Groundwater

Aquifers are one of the media that are most vulnerable to contamination in hazardous sites. Therefore, they should be monitored not only by means of man-made wells, but also through samples collected from springs and other natural underground water sources.

Hydrogeological studies should be carried out in the study area, and should include some of the following activities:

- a) The design of a preliminary scheme for hydrogeological conditions in the area, including the creation of an inventory of water points (water catchment points and springs in the area);
- b) Field survey of all the water points. The following data should be gathered: construction characteristics, extraction capacity, piezometric level and physicochemical characteristics of the water;
- c) Selection of sampling points and the period or periods that are most suitable for carrying out the sampling, depending on the climate.

When required by the size and complexity of the situation, additional information may need to be gathered through the following activities:

- d) Test drilling around the site through structures and formations of hydrogeological or hydrochemical interest. This will reveal changes in the piezometric level and enable the detection of vertical gradients;
- e) Hydraulic characterization tests in areas not investigated by the test drilling, to determine the permeability of the main structures in the area through the different rocks;
- f) Hydrochemical sampling along the test drill holes by clogging stretches to reveal the chemical characteristics of the underground flow at different depths of water upstream and downstream of the pollution point source.

Due to the natural variability in aquifers, they *should be analyzed at least three times a year*, depending on the local climate.

The following parameters should be measured in the water:

- Parameters measured in situ:
 - Temperature
 - Conductivity (salinity)
 - pH (acidity)
 - Dissolved oxygen
 - Eh (redox potential)
- Concentrations of metals:
 - Mercury
 - Arsenic
 - Barium
 - Chromium
 - Iron

- Nickel

In addition to these analytical determinations, other tests can be carried out according to the type of production process that generated the mercury deposit, and the expected composition of the pollution point source.

Likewise, other measures can be implemented to determine the presence of anions such as sulphates, nitrates, nitrites, carbonates and ammonium.

Mercury levels in aquifers can only be compared with reference values (for example, those of the US-EPA) when the *analysed samples have not been filtered*. The analysis should also include samples from domestic taps, as the concentration of contaminant in taps could be different from the values found in a well or spring.

In all cases, mercury levels above the reference levels for human consumption (1 µg/l) should be analysed to determine their source.

5.2 Soils and sediments

Before the soil sampling campaign is designed, a site survey should be carried out to take into account various factors, including:

- Geomorphology of the site.
- Topographical and geological characteristics, land uses, identification of escarpments, slopes, steeply sloping hillsides, instability, etc.
- Accessibility of the site and sampling areas.
- Identification of areas of natural ground and areas formed by backfill due to the movement of deposited materials. This point is of particular interest in the sampling of urban areas, where it is important to determine whether soil has been removed or mixed up by urban development works.
- Historical site uses (industrial process, tanks, pipelines, waste storage, landfill areas...)

On the basis of this information and data from the additional report, guidelines will be established for the sampling campaign. Contamination is mainly dispersed by wind, through resuspension and sedimentation of fine materials (generally the distribution is marked by the directions of the main winds in the area), and by surface water.

Taking into account the distribution of the winds and the surface water that runs through the site, a rhombus-shaped sampling grid should be established with sides measuring 50 by 50 metres. The grid should be symmetrical about the direction of the prevailing winds direction, as it is considered a priori that these winds will have the maximum concentration of suspended particles in the gradient of contamination. In addition to the aforementioned grid, a series of regularly spaced points should be sampled in a concentric pattern around the boundary of the contaminated site to compare and assess the impact of non-prevailing winds on the movement of solid particles.

Surface soil sampling will be carried out by removing a thin layer of earth and then taking the sample with a clean spatula. The deep soil sample will be taken at the same point as the surface sample using appropriate sampling equipment (auger).

In particular for soil/sediment, the sampler cylinder should be used, since this allows a sample unaltered in which it can be seen the profile and the depth of contamination.

The hydrogeological test drill holes can be used for sampling, which should be preferably of continuous recovery of core.

Each sample can weigh approximately one kilogram, to ensure the representativity of the sample, of which a homogenized portion of around 100 ml will be taken later on in the Lab for analysis. The rest of the sample will be kept referenced and stored for further tests, if necessary. For sediment sample, the weight could be less according to the analyses to carry out.

In the case of mining activities, the soil samples should be taken at three levels: simple surface (0-5 cm), at a depth of 0.5 m, and from rock samples obtained in test drill holes, if applicable. The aim of sampling at the first two levels is to discover potential variance between surface and deep soils due to mercury enrichment caused by migration from soil and concentration in the contact surface with the bedrock. The in-depth network sampling can be done at half of the points and alternating them.

5.3 Characterization of air and food

5.3.1 Air

Mercury levels in ambient air should be considered because of the high dispersion and ease of evaporation of this metal. As mentioned above, sampling points should take into account industrial activities within and outside the site, as well as meteorological conditions.

There may be many sources of mercury in ambient air. However, high levels naturally indicate that there is mercury in the area. The measurement of mercury concentration in air is a rapid way to confirm the presence of the metal. This is because contaminants are commonly dispersed in air, but do not remain in it. As a result, levels drop once the source of contamination has been removed or reduced.

In its *Air Quality Guidelines for Europe*, the World Health Organization (WHO) established a guideline value of 1000 nanogram/m³ (1 microgram/m³) as an annual average for mercury in ambient air.

The United States Environmental Protection Agency (EPA) selected a reference concentration of mercury of 300 ng/m³ for exposure in residential areas.

European Directive 2009/161/EU establishes maximum occupational exposure (8 hours per day) at 20,000 ng/m³.

Modelling can be carried out to identify the most likely pollution point sources (samples of ambient air should always be taken). Air samples can be collected in 24-hour periods according to a schedule that takes into account the meteorological conditions throughout the year.

A detailed record should be kept of the meteorological conditions and all the activities that were being carried out in the area at the time of each sampling.

5.3.2 Food

The mercury content should be determined in plant and animal samples of the food produced in the area and other food that is frequently consumed by the population. Food generated by fishing and hunting should be included, as well as those from agricultural sources.

When sediments are contaminated, sampling should include species that are bottom feeders in rivers, streams and lakes. It is not as important to include fish that feeds in the water column.

According to the principle of precaution, the intake levels described in World Health Organization (WHO) recommendations should not be surpassed. In 2008, WHO published a guidance document http://www.who.int/ipcs/assessment/public_health/mercury/en/ to provide information on the potential impact of mercury exposure and to help, as much as possible, to identify at-risk populations.

In the guidance document, WHO indicates that two groups are particularly vulnerable to the effects of mercury. Fetuses are particularly sensitive to the effects of mercury. Intrauterine exposure to methyl mercury due to maternal consumption of fish (especially Tuna, Swordfish, Shark..) or seafood may damage a baby's brain and nervous system. The main consequence of methyl mercury is potential disorders of neurological development. As a result, exposure to this substance during the fetal stage may affect a child's cognitive ability, memory, concentration ability, language, fine motor skills and spatial and visual skills. Therefore, particular attention should be paid to pregnant women, breastfeeding women and women of childbearing age.

The second group is that of people who are systematically exposed (chronic exposure) to high levels of mercury. This group includes people with fish as staple food (subsistence fishing) or those individuals occupationally exposed.

As the population's eating habits could mean that their mercury intake approaches the limits, it is advisable to restrict access to affected foods and even to regulate the use of the land and/or the types of crops that can be grown in the affected area, to ensure that the health of the surrounding population is protected.

6 Sample preparation and analytical procedures

A well-contrasted methodology is described in the following section, taking into account that other different techniques may be used depending on each specific case, the expertise of its analysts and the technical means available.

A. SAMPLE PREPARATION

a) Soils saturated with water and Sediments

Two alternative procedures are described, the drying of the sample at room temperature and the lyophilization.

a.1 Drying at controlled room temperature (max. 20-22 ° C)

- 1- If the sample is saturated with water, it should be filtered to separate the liquid phase. If the original sample is dry enough, then proceed directly with the homogenization phase (point 3). In any case, the humidity content of a sub-sample shall be determined in parallel in a kiln or in a thermobalance (see footnote⁶).
- 2- The solid part is put over absorbent paper at controlled room temperature (not above 20-22 ° C), and it is weighed periodically until the weight becomes constant.
- 3- Homogenize the sample.

- 4- If no prior information about the approximate concentration of mercury is available, an option could be to run an ESCHKA⁵ analysis for guidance on the most suitable technique to determine the Hg content of the sample.
- 5- Perform the analysis depending on the expected concentration, with the guidance given later on in point B. For this, except when using the technique of pyrolysis, it will be necessary a prior dissolution of the sample. The most common procedure is the aqua regia attack, but there are other alternative methods depending on the characteristics of the sample.
 - ISO 11466.3 (aqua regia)
 - EPA 3050B (HNO₃-H₂O₂-HCl).
 - MICROWAVE ASSISTED ACID DIGESTION EPA 3015, 3051, SW 846
- 6- Give the result referring to dry matter, with the moisture correction formula (see note⁶)

a.2 Lyophilization

Lyophilization (freeze drying) is a method that minimizes the loss of volatile components, such as mercury, in the drying process of samples with humidity, being also very convenient for organic tissues (fish, shellfish, algae, etc). The result is a sample with a very low moisture content that can be directly analyzed. Lyophilization is especially suitable for small amounts of sample.

⁵ The method ESCHKA is based on the mercury amalgamation process on a gold plate. The soil sample is introduced in a porcelain crucible and covered first with a layer of iron powder and later with a layer of zinc oxide. Then, the porcelain crucible is covered with a gold plate. After that, the crucible is subjected to a calcination process and it leads to the formation of gaseous mercury which is fixed to the gold plate. The difference on the weight of the gold plate let us to determine the mercury contained in the soil sample. The measured range of mercury can be from around 0.2% to more than 30%.

⁶ Moisture correction : The resulting concentration of mercury in the original sample, expressed on dry sample will be:

$$R = \frac{L}{1000} \cdot \frac{b \cdot F}{M} \cdot \frac{100}{100 - H}$$

R: concentration of mercury on dry solid sample mg/kg (ppm)

L: mercury concentration in the solution analyzed (micrograms/liter)

b: final digestion volume in milliliters.

F: dilution factor of the digestion, if any

M: weight of original solid sample digested, in grams.

H: value of loss at 105 °C, in % of original sample.



Laboratory device for lyophilization

b) Dry soil sample

- 1 - Dissolution of the sample, usually in aqua regia, except when using a pyrolysis technique.
- 2 - Make the corresponding analyses.
- 3 - Reference the results on a subsample dried at 105 ° C, as described above.

c) Determination of Hg in liquid samples

For the analysis of mercury in liquid samples, the measurement is made directly (prior to vacuum filtering with filter size of 0.20 microns) depending on the expected range of mercury (see point B).

B. MOST COMMON ANALYTICAL PROCEDURES

1. For solid samples with mercury concentrations above 300 ppm, the exact concentration of mercury can be determined directly following the ESCHKA method (see footnote⁵)
2. For solid samples with a mercury concentration between 20 and 300 ppm, the exact concentration of mercury can be directly determined by pyrolysis of the sample (ie the RP-91C attachment from LUMEX company is intended for decomposition of a sample and the reducing of mercury from the bound state into an atomic state using the pyrolysis technique) and subsequent analysis by atomic absorption spectrophotometer.
3. For samples with a mercury concentration between 0.05 to 20 ppm, the exact concentration can be determined by ICP-AES (Inductively Coupled Plasma-Atomic Emission Spectrometry), also referred to as Inductively Coupled Plasma Optical Emission Spectrometry (ICP -OES), performing a pre-digestion of the sample in an acid mixture.
4. Alternatively, for more than 1 ppm of Hg, the technique of cold vapor system (CVAAS) with subsequent measurement by atomic absorption spectrophotometry (based on ISO 12846:2012), which is the most extended in the Laboratories, or its equivalents FIAS and FIMS can be used. Problems that may arise are that organo-mercury compounds will not respond to the cold vapor atomic absorption technique and possible interferences may appear with chlorides, iodides, sulfides, copper and VOCs. It is recommended first to eliminate organic bonds with aqua regia in solid samples and with digestion with nitric acid in liquid samples followed by an oxidization of all mercury to its bivalent state with permanganate or dichromate, and finally reduce as usual with

borohydride or stannous chloride. A safe option would be the use of the method of standard additions to confirm the results, or to change the technique if the problems persist.

5. Solid samples with a concentration of less than 0.05 ppm mercury - although it can also be used for higher concentrations- can be analyzed directly without dissolution from the original solid sample by thermal decomposition (i.e. the RP-91C attachment from LUMEX company is intended for decomposition of a sample and reducing the mercury from bound state into an atomic state using the pyrolysis technique), then amalgamation with atomic absorption spectroscopy (ie the equipment AMA-254). The method is based on norm EPA 7473 SW 846.

In any case, when the pyrolytic process is used and mercury is suspected to be bound in silicates or other matrices that may not thermally decompose, validation of direct analysis of the solid should be confirmed with total acid digestion with an appropriate method (such as method EPA 3052), followed by analysis with AMA-254 or other equivalent mercury analytical techniques.

7.Risk assessment

The Environmental Risk Assessment (ERA) will help to answer the following questions:

- Does the site represent a real or potential risk to the human population and/or to the biota?
- What is the magnitude of the risk?
- Should the site be restored to reduce the risk?
- If the site is not restored, could the risk increase and/or spread?

ERA is a process that assigns magnitudes and probabilities to the adverse effects of contamination. Consequently, it is an instrument that can help to define whether or not environmental measures should be implemented at a contaminated site. Risk assessment can establish the urgency to act: the greater the risk of the contamination affecting living beings, the greater is the need to implement restoration programmes.

Risk assessment can be used to define remediation objectives for a site, which may be to reach (a) the maximum acceptable limits established by current legislation or relevant authorities or (b) specific limits set for the site on the basis of the assessment.

ERA constitutes a tool for deciding whether to carry out corrective actions at the contaminated site and for setting the final remediation objective, thus selecting the best clean-up strategies. The ideal objective is to restore the site and its uses with concentrations to the levels found in the environment prior to contamination through techniques described in point 7.1. However, this may be economically unfeasible and other options should be considered, as it is mentioned in that point.

The establishment of a **target clean-up level on the basis of a risk assessment** means that the contamination will be reduced to its maximum accepted level, which may be not necessarily zero (speciation, lability and biodisponibility of mercury are parameters that can be taken into account). Thus, at the end point, the residual concentration of the contaminant will not constitute a risk to the human population and biota.

Risk assessment can be carried out in four clearly defined stages with specific objectives:

1. Identification and characterization of what is at risk. All analyses of these characteristics should help to assess the risk to human health and to ecosystems.
2. Analysis of the hazard level and toxicity. The aim of this stage is to identify elements or compounds that may be critical; to characterize the kind of effects they may have; and to evaluate

dose-effect relationships, in order to predict the response to the contaminant for a wide range of doses. This analysis is based on contaminant data and characteristics, referring to its environmental and toxicological behavior.

3. Analysis of exposure. The aim is to estimate the rate of contact with the identified contaminants. The analysis is based on a description of exposure scenarios, as well as characterization of the nature and extent of the contamination.
4. Analysis of risks. The results of the previous stages are combined to objectively estimate the likelihood of adverse effects on the protected elements under the specific conditions of the site.

Other contaminants besides mercury may have an impact. Therefore, if there is evidence that other contaminants are present at the site, the responsible of the process must take the decision to include them in the study and assessment.

7.1 Characterization of toxicological effects

This section of the risk assessment evaluates and describes the effects of the significant contaminant (mercury) on the receptors identified through the different exposure routes.

Contamination receptors that are frequently at risk in mercury-contaminated sites are:

7.1.1 Humans

In humans and some animals, the potential effects and symptoms of mercury intoxication vary according to the chemical form of mercury, the exposure route (inhalation or ingestion) and the exposure dose, including the exposure time and the concentration of the mercury.

For all the inhabitants of an area where a mercury-contaminated site is located, the main potential exposure routes are as follows:

- Breathing (absorption by inhalation) of mercury and/or dust;
- Eating (absorption by ingestion). It is considered that mercury ingested in food is mainly in the form of methylmercury (an organic compound of mercury);
- Dermal contact.

7.1.2 Terrestrial animals

In general, the symptoms of intoxication reported in animals for cases of mercury poisoning are not specific and depend on the exposure route, as in humans.

7.1.3 Aquatic biota

Many factors influence the potential toxicity of mercury in aquatic biota. These include the form of mercury, the developmental stage of affected organisms, and the chemistry of the water.

Changes in temperature, salinity and the hardness of the water also alter the toxicity of mercury to the biota.

It is widely accepted that the most toxic form of mercury is **methylmercury**. Reducing conditions (i.e. low-oxygen concentration) are needed for methylation to occur. It is well known that bacterial action promotes methylation, which is the main process responsible for the transformation of inorganic mercury to an organic formulation able to enter throughout the food chain.

In aquatic systems, fish are the main receptors of mercury through ingestion, as they are exposed to mercury both in water and through the ingestion of plants and macroinvertebrates.

Fish and macroinvertebrates like shellfish can also absorb mercury through the gills.

Macroinvertebrates may also be exposed to mercury in sediments, as are species of fish that feed on material deposited on top of the sediments. Due to their position at the top of the food chain in aquatic systems, it is assumed that fish have the highest concentration of mercury of all kinds of aquatic biota.

7.1.4 Plants

Plants are generally not sensitive to inorganic forms of mercury (i.e. elemental mercury and ionic mercury), probably due to the high level of absorption of the metal by soil particles. This largely prevents the absorption of mercury and toxicity in plants, which normally do not concentrate heavy metals⁷, but show greater access to organic forms of mercury, such as methylmercury, than to inorganic forms.

7.2 Evaluation of exposure

By this stage, we know the exposure routes, the receptors, the concentrations and the toxicity.

The evaluation of exposure consists in combining the results of the risk assessments for humans and ecosystems with dispersion studies to assess the degree of mobility of contaminants and to analyse concentrations in the different media that are affected.

The exposure sources that should be considered at a mercury-contaminated site are the media analysed in the environmental characterization, i.e.: particles in suspension (PS), gas emissions, surface water, groundwater, soil and sediments.

7.3 Risk characterization

Risk characterization is the final stage in the risk assessment. During this stage, the probability of the occurrence of adverse effects due to mercury exposure is evaluated, and the bases are established for future actions.

In addition, data and conclusions from the stages in which the toxicological characteristics and the effects of the significant contaminant were reviewed are analysed together, along with the evaluation of exposure. All of these data are combined with the reasoning behind the proposed conceptual model.

For human health, the contaminant dose received by an individual (calculated on the basis of the characterization of the exposure scenario) is compared with the toxicological reference values set for this substance and population strata.

The following results should be obtained:

- a. Conclusions on the actual risk of contamination at the site for human and ecosystem receptors, as well as the risk of dispersion (future risk);

⁷ Preventive Measures against Environmental Mercury Pollution and its Health Effects. Japan Public Health Association, 2002.

- b. Estimation of the level of uncertainty in the risk analysis, in order to accurately evaluate the conclusions of the characterization.

This stage can be carried out with the help of validated software to simplify the calculations, taking into account that its suitability should be justified for the specific characteristics and conditions of the site. Otherwise another method of calculation should be used. If software is used, screenshots of the process should be provided to confirm the values that were entered and the conclusions obtained.

Different approaches have been developed for the risk characterization stage, each one with its dedicated commercial software available, like:

- Risk-based corrective action (RBCA)
- Probabilistic risk assessment (PRA)
- Biotechnology-based direct toxicity assessment

8. Remediation of mercury-contaminated sites

Remediation measures for mercury-contaminated sites depend on various factors associated mainly with the location itself and with the potential impact on the environment and human health.

One or more remediation technologies can be considered, taking into account the results of the site study, the target clean-up levels, the capacity of the available remediation technologies, and the intended future use of the site.

The main factors that influence the selection of an initial set of treatment technologies are:

- a) Receptors (surface water and / or groundwater, soil, air, biota, human.);
- b) The (potential) mobility of mercury in the hydrological system;
- c) The possibility of leaching of mercury from soil or sediments;
- d) The pollution point source;
- e) Mercury concentrations in human, animal and plant receptors, which indicate exposure levels;
- f) The chemical states of mercury at the contaminated site;
- g) Bioavailability to the aquatic biota, invertebrates and edible plants;
- h) The amount of mercury released during the operations;
- i) The possibility of mercury methylation;
- j) Background mercury contamination, regional atmospheric deposition of mercury that is not associated with local sources;
- k) The local/national clean-up regulations for water, soils/sediments and air;
- l) In the case of mining operations, it is important to know precisely the geological formations that led to mercury extraction in order to not to include them as polluted soil due to the mining activities.

Once these factors have been evaluated, a more comprehensive analysis of the appropriate remediation techniques can begin.

Depending on the gravity, magnitude, degree and type of contamination by mercury and other pollutants and on the receptors, the recovery plan is likely to involve various remediation techniques or measures to reduce or contain the amount or toxicity of the contamination as effectively and efficiently as possible.

Below, some of the treatment options for mercury-contaminated media are described. These techniques can be used – alone or in combination - in the remediation of a contaminated site. In general, the aim of the techniques listed below is to recover the area by removing the mercury.

As mention in point 3.2.3, there is the possibility to restrict use of the contaminated area and limit access to it, at least until work can be started on recovery of the site.

Alternatively, a site can be contained by making it impermeable using natural materials such as clays or geosynthetic materials such as high density polythene sheets to prevent the evaporation and leaching of mercury.

In addition, waste can be transported for safe storage in landfills engineered for this purpose.

Another option is to propose different treatments for each area or product in a mercury-contaminated area.

8.1 Treatment of mercury-contaminated effluents and soils⁸

Numerous techniques can be used to treat mercury-contaminated effluents. Some processes are merely physical (sedimentation), others are physicochemical (coagulation-flocculation, adsorption, etc.), yet others are chemical (oxidation-reduction, precipitation, etc.). The appropriate choice depends on various factors, mainly the speciation of the element and the presence of other agents.

Point 8.1.1 treats specifically groundwater and surface water remediation

a) Precipitation

Precipitation of mercury in the form of insoluble salts is one of the most common practices in effluent treatment.

The main precipitant is sulphide. Mercury sulphide is one of the most insoluble salts and is the form in which most of the mercury on the earth's crust is found (cinnabar).

The optimum pH for the reaction is 7. The precipitate that is formed is then subjected to a sedimentation process, which can be assisted by the addition of flocculants. Mercury concentration values after sulphide precipitation are between 10 and 100 µg/litre.

This process has some disadvantages, such as the formation of high volumes of sludge that require subsequent treatment, and the formation of soluble species due to an excess of sulphide. Therefore, it is not the most suitable treatment for mercury-contaminated effluents.

b) Adsorption

Treatments involving adsorption produce lower mercury concentration levels than those obtained by precipitation. As the concentration of the adsorbent increases, the levels of remaining mercury decrease. Other factors that affect this process are pH and mercury speciation.

The most commonly used adsorbent is activated carbon. This is generally in the form of granular activated carbon, in which the carbon has a relatively large particle size and can be used to fill columns.

c) Ion exchange

⁸ (Source EPA 1997)

This is one of the main treatments for mercury-containing effluents. A wide range of resins can capture the different species of mercury. The technology is primarily designed to bind ionic mercury. It is not highly effective for organomercury compounds or elemental mercury.

The process is carried out in columns or tanks filled with the corresponding resin and equipped with systems for intake and outlet of the effluent, as well as clean water for rinsing, and regenerating solution.

Ion exchange systems have several advantages: they operate as needed, they are relatively insensitive to variability in effluent, they can produce zero concentration values, and a wide range of resins is available. The disadvantages include sudden exhaustion of the capacity, which means that the process must be monitored continuously, generation of a saline water effluent containing mercury, which must be treated, and potential problems when the process is used with water that contains a high level of total dissolved solids.

d) Oxidation – reduction

In some cases, oxidation and reduction processes are used to change the oxidation state of the mercury and thus promote its dissolution or decantation.

Oxidation is used in effluents that contain metallic mercury or organometallic compounds to transform them into the ionic form or to dissolve them as mercury halide. The process can take place in batch or plug flow reactors. Mercury salts separate from the matrix of waste materials and are then sent for further treatment, for example acid extraction or precipitation.

The most common oxidants are: sodium hypochlorite, ozone, hydrogen peroxide, chlorine dioxide and chlorine gas.

Reduction is used as a method for removing mercury in solution in the form of metallic mercury and then to sediment, filter or centrifuge it, for example. The most common reducing agents are: aluminum, iron, zinc, hydrazine, stannous chloride and sodium borohydride.

The decontamination rate is high in reduction processes when the mercury concentration is relatively high (up to 2 g/l). However, the efficacy of the process drops when the levels of mercury are low. In this case, further treatment is required.

e) Others

Other methods for treating mercury-contaminated effluents have given good results like membrane separation processes (such as ultrafiltration and reverse osmosis).

Others, some in the experimental stage, are biological treatments (microorganisms that can absorb mercury or reduce it), liquid emulsion membrane extraction and solar photocatalysis with titanium dioxide.

8.1.1 Technology for groundwater and surface water remediation (*Biester, 2013*)

In many cases, contaminant removal may not be possible and hydraulic containment may be necessary to protect the surrounding environment. In these cases, the most currently applied technology for groundwater and surface water remediation is Pump & Treat (P&T). Basically, P&T systems involve the installation of extraction wells below the water table within or slightly down-gradient from the zone of contamination. As the mass of contamination remains in the subsurface, P&T systems must operate in

perpetuity to prevent off-site migration. As extracted water must be treated at the surface, well placement and pumping rate should be chosen to ensure capture of contaminated groundwater and limit recovery of clean water. Monitoring wells have to be installed around the contaminant plume to assess containment and evaluate hydrogeochemical conditions.

For high concentrations of mercury, the treatment technologies are similar to mercury recovery processes of industrial liquid effluents as described before (mercuric brine of chlor-alkali waste water, etc.). The treatment from bulk contaminated water enabling to reach concentrations below the remediation goals encompasses several treatment steps which may include for example: sulphuration, chemical reduction (hydrazine), co-precipitation and adsorption, ion exchange. These technologies are efficient for high concentrations (over 1 mg/L) and low flow rate (less than 10 m³/hour). It is often applied in batch processor. It has to be considered that this low flow rate treatment may reduce the ability of the pumping to capture the contamination plume.

For low concentrations (< 10 µg Hg/l), the most advisable treatment technique is groundwater filtration with sulphur-activated granular carbon (see table below).

Most frequently applied filtration technologies to remove mercury from water (HPC AG Freiburg, 2011):

	Modified activated granular carbon	Sulphur impregnated granular activated carbon	Ion exchange resins (e.g. Ambolite)
Source of information	Supplier	Supplier	Supplier
Principle	Sorption	Ion exchange and sulphuric sorption	Ion exchange on thiol group (-SH)
Efficiency (µg Hg/l)	<1	<1	<1
Adsorption capacity (g Hg/Kg filtration media)	4 (3-5)	8 (5-10)	50
Costs (€ / Kg filtration media)	3,6	4,5	40
Specific cost (€ / g Hg)	0,9 (0,7-1,2)	0,56 (0,45-0,9)	0,8

The table above shows the low filtration capacity and adsorption capacity of GAC (Granular Activated Carbon). Furthermore, the sorption kinetic on GAC is low, thus reducing the flow rate for an efficient filtration and Hg removal from water. It has also to be considered that mercury is often associated with other organic and/or inorganic compounds in complex water matrix (high or low pH, high salinity) causing competitive sorption and drastic reduction of the efficiency of traditional GAC filtration.

Low kinetic and adsorption capacity associated with high specific cost cause high capital and O&M (Operation & Maintenance) costs for traditional remedy using ion exchange technologies and GAC.

In any case, mercuric wastes such as mud, filters, saturated granular carbon are produced which have to be managed like a mercury waste.

8.2 Treatment of mercury-contaminated solid waste ⁹

Mercury-contaminated solid waste treatments have been classified into four categories:

- a) Thermal treatments (retorting or roasting, among others)

⁹ Source: *Treatment technologies for Mercury in Soil, Waste and Water*, EPA 2007

b) Solidification/Stabilization (including amalgamation)

a) Washing/Acid extraction

b) Vitrification

a. **Thermal treatments** Thermal desorption and retorting are two common methods for full-scale thermal treatment of mercury-contaminated waste and for the treatment of soils and sediments.

These treatments volatilize the mercury by low-pressure heat transfer, followed by condensation on a cold surface.

Elemental mercury that is collected in this way can be reused in processes or stored. Off-gases should be treated to avoid emissions of mercury or other components.

a.1 Retorting/roasting(Source: ITRC 1998)

Pre-treated waste is sent to a desorber or retort where it is heated at low pressure to volatilize the mercury. Heating may be direct through contact with combustion gases or indirect through a metal wall (e.g. electrical heating).

When desorbers are in operation, the waste inside them is agitated continuously. The movement increases heat and mass transfer, leading to higher evaporation rates. In contrast, waste in retort and roasting equipment is static.

The most common desorbers are directly heated rotary kilns and indirectly heated screw systems.

Direct heating systems require high volumes of combustion gases when a large volume of waste is treated. Consequently, complex control systems are required, and gas emissions must be treated. In these cases, the investment and operating costs could be much higher than in an indirectly heated system, in which combustion gas is not mixed with the hazardous waste.

a.2 Gas treatment

Gases from the retort system are filtered through fabric filters to remove particulate matter. Subsequently, the gas is cooled in a condenser to transform gaseous mercury into a liquid. The gas is then treated in control systems comprised of activated carbon filters and catalytic oxidants to capture any leakage of mercury vapor and organic volatile matter.

b. **Solidification/Stabilization** Solidification and stabilization are physicochemical processes that tend to reduce the mobility of mercury to a certain extent by physically enclosing it (solidification) or forming chemical bonds with it (stabilization). Amalgamation, that is, the formation of a solid or semi-solid alloy of mercury with other metals, is a form of solidification.

There are two main solidification processes:

- Macroencapsulation: the encasing material is poured over and around the waste mass.
- Microencapsulation: the waste is mixed with the encasing material before solidification occurs.

b.1 Stabilization by Sulphur

This process consists of converting liquid mercury into mercury sulphide (HgS); a form that is the most insoluble and common in nature.

There are two crystalline forms of mercury sulphide: alpha HgS and beta HgS, both of which are practically insoluble and have a very similar solubility in water.

If waste contains elemental mercury, Hg is mixed with S at room temperature and agitated rapidly. The energy produced by mixing is sufficient to cause the activation. Alternatively, a reaction can be carried out between Hg vapour and S inside a mixer with an inert atmosphere, to prevent the formation of HgO.

Oxidation of mercury to HgO should be avoided, as this species is more soluble than the sulphur. Therefore, it is advisable to work in an inert atmosphere and to add antioxidants (Na₂S).

b.2 Sulphur-polymer stabilization

This is a modification of the sulphur process. It consists in stabilizing the mercury through a reaction with sulphur, followed by solidification/microencapsulation in a polymer matrix.

It is carried out in two steps:

1. Stabilization: Reaction between elemental mercury and sulphur polymer cement (SPC, a mix of 95% sulphur and 5% polycyclopentadiene).
2. Solidification (and microencapsulation): Heating to 135°C.

There are several advantages to this process: the product that is obtained is monolithic and has a low specific surface area. Hence it is less volatile and leaching is less likely.

b.3 Amalgamation

This process consists in the formation of a mercury alloy with other metals (amalgam). As the concentration of metal increases, the amalgam becomes more solid. The metals that are most frequently used are: copper, selenium, nickel, zinc and tin.

To accelerate the process, finely divided metals are added to the mercury.

b.4 Other stabilizing agents – solidifying agents

Other substances that are used as a medium in these processes are: cement, calcium polysulfide, chemically bonded ceramic phosphate, phosphates, platinum and polyester resins, among others.

Of the various matrices used in solidification processes, we can distinguish between those that require previous stabilization and those that do not. The distinction is based on the strength of the material, to ensure that mercury is not released.

c. **Washing/Extraction** Soil washing and acid extraction are used for ex situ treatment of mercury-contaminated soil and sediments.

Soil washing is a water-based process that uses a combination of physical particle size separation and aqueous-based chemical separation to reduce contaminant concentrations in soil. This process is based on the concept that most contaminants tend to bind to the finer soil particles (clay and silt) rather than the

larger particles (sand and gravel). Physical methods can be used to separate the relatively clean larger particles from the finer particles because the finer particles are attached to larger particles through physical processes (compaction and adhesion). This process thus concentrates the contamination bound to the finer particles for further treatment.

Commonly used methods for treating the wastewater include ion exchange and solvent extraction. Acid extraction uses an extracting chemical such as hydrochloric acid or sulfuric acid to extract contaminants from a solid matrix by dissolving them in the acid. The solid and liquid phases are then separated using hydrocyclones, and the solids are transferred to a rinse system, where they are rinsed with water to remove entrained acid and contaminants.

The precipitated solids may require additional treatment or may be disposed in a landfill, and the acid extraction fluid and rinse waters are then treated to remove the heavy metals.

The principal advantage of soil washing /acid extraction is that hazardous contaminants are separated from soils and sediments, thereby reducing the volume of hazardous waste to be treated / disposed.

The performance and viability of soil washing depends on factors like soil type, composition, particle size distribution, homogeneity and Total Organic Carbon present. Also, complex, heterogeneous contaminant compositions can make it difficult to formulate a simple washing solution, requiring use of multiple, sequential washing processes to remove contaminants

d. **Vitrification** Vitrification uses electrical current to heat, melt and vitrify the treatment material in place, thus incorporating them into the vitrified end product, which is chemically durable and leach resistant. Electric current is passed through soil by an array of electrodes inserted vertically into the surface of the contaminated zone.

The temperature of the contaminated soil can reach between 1,600 and 2,000 °C. A single melt can treat a region up to 1,000 tons.

Vitrification is used to treat wastes up to a depth of 6 meters. Large contaminated areas are treated in multiple blocks that fuse together to form one large treated zone.

The gases produced must be collected and sent to a treatment unit. Dioxins and furans may also form when excess chlorides are present and enter the off-gas treatment system.

Mercury may be difficult to treat because of its high volatility and low solubility in glass (less than 0.1 percent), but may be effectively treated at low concentrations.

Chlorides in excess of 0.5 weight percent will typically fume off and enter the off-gas. If chlorides are excessively concentrated, salts of alkali, alkaline earth, and heavy metals may accumulate in the solid residues collected by off-gas treatment. Separation of the chloride salts from the residue may be necessary, therefore, if the residue is returned to the process for treatment.

The following table presents a summary of the pros and cons of the most usual strategies and treatments:

Technology	Principle	Key advantages	Key disadvantages	Targeted mercury	Status
<u>Source removal with excavation</u>	Excavation of the polluted materials on the whole contaminated area or specifically on the hot spots where the mercury masses are concentrated	Provide total remedy, radical with no residual concentrations to manage if the whole area is excavated	Could be expensive due to health and safety constraints for workers and surrounding. Risk of remobilization of labile elemental mercury. Geotechnical limitation due to groundwater level and/or existing infra-structures Transport of the polluted soil to the landfill Necessity of an engineered landfill suitable for Hg wastes If only hot spots are removed, management with other technologies of residual non excavated soils.	Total labile mercury	Reliable technology but with difficulties inherent to the occurrence of mercury
<u>In situ containment with vertical barriers and capping</u>	Isolation of existing contaminated areas in the subsurface from the surrounding uncontaminated environment	-Relatively simple and rapid to implement -Uses standard construction equipment -Can be more economical than excavation and removal of waste, and thermal treatment -Can be applied to large areas or volume of waste -Avoids use of monocell space and risks associated with removal and transport -Provides a total remedy that addresses all mercury present in the targeted area -Provides a relatively passive system that doesn't rely an active management	Mercury remains on site and there is no reduction of toxicity and masses; this represents a potential risk should containment fail / degrades Geotechnical limitations due to existing infra-structures Vertical barrier limited to depth less than 20 m due to increasing capital costs. Vapour treatment by gas-drainage-capping	Total labile mercury	A variety of barrier materials are easily available

Technology	Principle	Key advantages	Key disadvantages	Targeted mercury	Status
<p><u>Soil-washing with preprocessing (mechanical separation)</u></p>	<p>Ex situ technique where soils and polluted materials are washed, generally with water and/or oxidative acid solutions. Wash water and wash solutions can be treated and recycled</p>	<p>Possible reuse of treated material on site for filling. Reduction of waste to be treated /landfilled</p>	<p>-Source removal required -Pre-processing with physical separation, sorting, grinding of the material may be required -Technical difficulty increases depending of the type of soils and contaminants -Technology only viable for important volumes to treat due to costs.</p>	<p>Hg⁰ and inorganic mercury</p>	<p>Soil washing units have efficiently treated soils and mercury wastes in different countries.</p>
<p><u>On-site immobilisation: stabilization & solidification, amalgamation with on-site or off-site disposal</u></p>	<p>Chemical reaction (stabilization) and physically encapsulation (solidification) to reduce the hazard potential of a contaminated material by converting the contaminant into less soluble, less volatile, less mobile, and/or less toxic forms . On-site or off-site disposal in special engineered landfill licensed to receive mercury wastes.</p>	<p>-Lower waste classification by reaching the acceptance criteria for leaching; -Reducing the risk during transportation -Enable containment in special engineered landfill (monocell).</p>	<p>-Required excavation -Required site-specific testing at laboratory and pilot scale prior to full-scale application -possible passivation of elemental mercury during mixing and inefficiency of the treatment when Hg⁰ droplets occurs (high elemental mercury content) -Increase of the bulk waste volume -the long term stability of stabilized media is uncertain or has not been assessed with some reagents --Carbon fingerprint when transportation of the waste off site -Elevated cost for large volume of waste (800 to 1000 € per tonne) -Long term monitoring required</p>	<p>Total labile mercury, especially Hg⁰</p>	

Technology	Principle	Key advantages	Key disadvantages	Targeted mercury	Status
<p><u>In situ thermal desorption (ISTD)</u></p>	<p>In situ heating of contaminated soils causing direct volatilization – removal of volatilized products through soil vapor extraction.</p>	<ul style="list-style-type: none"> -No excavation required -Selective extraction of labile mercury (which is the environmental issue) -Short duration of operation 	<ul style="list-style-type: none"> - Could be expensive and technically difficult to conduct -Requires dense combined borehole networks for both soil vapor extraction + heating -mercury captured in the vapor treatment system must be managed, -Fugitive emissions of mercury vapor must be controlled, -Secondary treatment of wastewater streams from condensed water would be complex -Large energy consumption 	<p>Hg^o and inorganic mercury</p>	<p>ISTD has been demonstrated commercially at full scale for high boiling point organic compounds remediation.</p>
<p><u>Ex situ Thermal Desorption (ESTD)</u></p>	<p>Ex situ thermal desorption is a continuous process normally conducted in rotary kilns (or equivalent)</p>	<ul style="list-style-type: none"> -Recovery of mercury and separation from material that could be reused for filling on site -High abatement efficiency 	<ul style="list-style-type: none"> -excavation and temporary storage required -re-treatment would be required -Large energy consumption -Fugitive emissions of mercury vapor must be controlled -mercury captured in the vapor treatment system must be managed -Secondary treatment of wastewater streams from condensed water would be complex 	<p>Hg^o and inorganic mercury</p>	<p>ESTD has been demonstrated commercially at full scale for mercury remediation only for low concentration (< 10 mg Hg/kg).</p>

Technology	Principle	Key advantages	Key disadvantages	Targeted mercury	Status
<u>Batch retorting</u>	Ex situ process where contaminated soils are heated in a controlled manner – volatilizing contaminants (e.g. mercury) which is then recovered from off-gases.	<ul style="list-style-type: none"> -Thermal desorption under controlled conditions -Recovery of mercury and separation from material that could be reused for filling on site -High abatement efficiency 	<ul style="list-style-type: none"> -excavation and temporary storage required -limited to treatment capacities of the order of one to five tons per day -expensive, high energy requirements, require vapor treatment, and significant handling effort and long treatment times (1 to ten years based on the capacity of 5 tons per day) 	Hg ^o and inorganic mercury	It has been demonstrated commercially at full scale for small volume of highly polluted materials
<u>In situ Vitrification (ISV)</u>	High temperature process that immobilizes contaminants by incorporating them into a vitrified matrix which is durable and leach resistant	<ul style="list-style-type: none"> -High abatement efficiency, -No excavation required 	<ul style="list-style-type: none"> -Operation and maintenance would likely be technically difficult and expensive -Required site-specific testing at pilot scale prior to full-scale application -Required dense combined borehole networks for both soil vapor extraction + heating - Mercury captured in the vapor treatment system must be managed Fugitive emissions of mercury vapor must be controlled -Secondary treatment of wastewater streams from condensed water would be complex -Large energy consumption -the long term stability of in situ immobilized media is uncertain or has not been assessed (metastability of glassy material) 	All forms and combination of mercury	One application reported at full scale with ex-site treatment in the USA for mercury wastes.

8.3 Safety measures. Prevention of occupational risks during clean-up work

Remediation tasks may lead to mercury exposure and all the risks that this entails, in addition to all the usual risks associated with the activity itself. To avoid risks, it is essential to know the mercury levels that workers are exposed to.

Environmental monitoring of the concentration of a toxin in air is the main instrument in the prevention of health-related occupational risks in general, and in relation to mercury in particular. There are two forms of environmental monitoring. **The first** involves sampling the air in a work area. **The second** focuses on staff and involves sampling the level of exposure of workers during their working day, as staff normally moves from one place to another during the day.

Another control for each exposed worker individually is the biological monitoring. This occupational health procedure measures a potential toxin, in this case mercury, its metabolites or an unwanted chemical effect in a biological sample, in order to assess individual exposure.

These measurements are known as biological exposure indicators or biomarkers. Biological monitoring measures the amount of the agent that has been absorbed, regardless of the pathway. It takes into account the elimination pathways, the toxicokinetics and the toxicodynamics of the corresponding substance. As a preventative measure, biological monitoring should be carried out regularly and repeatedly, but should not be confused with procedures for diagnosing occupational illness.

The daily environmental exposure limit values for mercury and for divalent inorganic compounds of mercury, including mercury oxide and mercury chloride (measured in mercury), is 0.02 mg/m^3 , measured or calculated for a reference period of 8 h. These values are in accordance with Commission Directive 2009/161/EU establishing a third list of indicative occupational exposure limit values.

There are several procedures for the environmental determination of mercury. Both active and passive systems can be used. The choice of system will depend on the type of evaluation that is required, the instrumental conditions and the available techniques, as well as on the form of the contaminant. Devices for taking direct readings can be used to measure a specific concentration.

The most common method involves trapping mercury as a vapor. This is usually achieved through the use of adsorbent tubes (hopcalite, manganese bioxide and activated carbon, among others) or passive monitors (for example, gold and silver plates) that amalgamate the mercury. When mercury is trapped in adsorbent tubes, the amount is usually determined using atomic absorption spectrophotometry. If passive monitors have been used, variations in electrical conductivity are generally measured. If the mercury is in the form of particulate matter (powder), it is trapped in filters and analysed by Atomic Absorption spectrophotometry. Electrochemical techniques, such as polarography and stripping potentiometry, can also be used for the analytical determination.

Biological indicators can be established for elemental mercury and inorganic compounds. These are appropriate parameters in biological media from a worker (urine and blood), and can be measured at a specific time.

The biological limit value for total inorganic mercury in urine can be set at $35 \text{ } \mu\text{g/g}$ of creatine before the working day, i.e. after 16 hours without exposure. The limit value for total inorganic mercury in blood can be set at $15 \text{ } \mu\text{g/l}$ at the end of the working week, that is, after 4 or 5 consecutive days of exposure at work. These values correspond with the Occupational Exposure Limits for Chemical Agents in Spain (National Institute of Safety and Hygiene at Work, 2012).

Preventative measures can reduce workers' levels of exposure. These include ventilation systems that increase air renewal in working spaces. Clean air is brought into the work area and contaminated air is extracted to treat it in activated carbon filters. In addition, protective clothing can be worn, such as mouth and nose masks with Hg P3 filters, in accordance with European Respiratory Protection Standards (EN 141: 2000).

8.4 Environmental monitoring required during remediation work

Environmental remediation projects for mercury-contaminated sites should include an Environmental Monitoring Plan (EMP) in addition to the remediation activities themselves.

The aim of the EMP is to determine and assess the environmental impact or damage to the area around the contaminated site to be remediated, in all stages of the remediation work. Thus, the EMP will describe appropriate measures for mitigating or avoiding negative environmental effects of the remediation activity. Measures will apply to the design and location of the remediation activity, the remediation procedures, purification, and general mechanisms for protecting the environment.

The EMP for remediation activities at a mercury-contaminated site will define monitoring and measurement activities. Measurements will be divided into two groups:

1. Those made during implementation of the remediation work.
2. Those made after the remediation work or monitoring activities.

In these two groups, there will be a particular focus on:

- Surface water and groundwater quality.
- Particle and gas emissions that affect the quality of life of inhabitants of the area.

In addition, remediation activities will be monitored by means of topographic control and a photographic record. Meteorological data will also be gathered.

The EMP will establish the method for monitoring remediation actions: the kind of reports that are required, the content of the reports, their frequency, and when they will be issued in the framework of the remediation project.

Quality control of the remediation work and of the significant environmental aspects that were identified for the project (in the design, implementation and maintenance stages) will be carried out according to the guidelines established in the Environmental Monitoring Plan.

An example of the main aspects to include in an EMP for a remediation project at a mercury-contaminated site is showed at the end of the chapter.

8.5 Monitoring and control of the expected results and of implemented activities

Once the option of remediation has been selected, a monitoring plan should be designed, implemented and run. This plan will determine the times and places at which monitoring will be carried out to assess the progress of the remediation actions and confirm that the targets have been met and that the site is not a risk to human health or the environment.

The design and implementation of a monitoring plan (MP) is highly specific to the type of remediation carried out and the contaminated site. Monitoring should be accompanied by assessment of the indicators,

to verify whether or not progress has been made in the various activities that form part of the system or project under evaluation.

The aim of the basic control and monitoring indicators should be to verify that:

- Processes within the contaminated site that has been remediated are carried out according to plan.
- The environmental protection systems work exactly as proposed in the remediation project.
- There is compliance with the conditions of authorized use of the contaminated site.

At least the following indicators should be evaluated during the period established by the relevant authority:

1. Meteorological data. It is essential to establish the meteorological data that will be collected from the site:

- Volume of precipitation (daily and monthly values)
- Minimum and maximum temperature (monthly average)
- Direction and strength of the prevailing wind
- Evaporation (daily and monthly values)
- Atmospheric humidity (monthly average)

2. Emission data:

- Monitoring of surface water at representative points. The monitoring of surface water **should be carried out at two or more points**, including water upstream of the site and water downstream of the site.

Samples will be taken in different seasons, preferably every six months. The parameters will vary according to the characteristics of the site to be remediated. In the case of mercury contamination, the parameters should include the concentration of mercury and of other heavy metals, anions, pH, conductivity, etc.

- Monitoring of groundwater. This will be carried out at one point, or more, situated upstream from the site's inlet, according to the groundwater flow direction, and at two points downstream from the site's outlet.

The number of monitoring points could be increased on the basis of a hydrogeological survey of the area.

The sampling frequency will be specific to each location and will be determined on the basis of the knowledge and assessment of the groundwater flow rate. The recommended parameters include pH, conductivity, heavy metals and anions.

- Monitoring of mercury vapor emissions and particulates with mercury content. A monitoring network should be established both within and outside the site to be remediated, to determine the environmental levels of mercury, and thus check the effectiveness of the remediation actions.

3. Soil sampling survey

The duration of the MP and the sampling and data collection frequency generally depends on the environmental authority.

The following table shows some of the main parameters to include in a MP for a remediation project at a mercury-contaminated site, during implementation of the remediation activities and once the project is finished.

MONITORING PLAN			
MONITORED MEDIUM	MONITORING FREQUENCY	LOCATION	MONITORING PARAMETERS
Surface water	Monthly, first two years	Water upstream of the immediate surroundings of the site to be remediated	Temperature pH Conductivity Dissolved oxygen Redox potential (Eh) Nitrites COD Ammonia Mercury
		Water downstream of the immediate surroundings of the site to be remediated	
	Six-monthly, remaining years	Water upstream of the area near the site to be remediated	Temperature pH Conductivity Heavy metals: mercury.
		Water downstream of the area near the site to be remediated	Temperature pH Conductivity Heavy metals: mercury
	Annual	Water upstream of an area further from the site to be remediated	Temperature pH Conductivity Mercury
		Water downstream of an area further from the site to be remediated	
Groundwater	Monthly, first 2 years	Drilling around the site to be remediated	Mercury
	Six-monthly, remaining years	Drilling around the site to be remediated	Mercury
	Annual	Wells and springs around the site to be remediated	pH, conductivity, HCO ₃ ⁻ , SO ₄ ²⁻ , Cl ⁻ , Ca ²⁺ , Mg ²⁺ , Na ⁺ , NO ₃ ⁻ , NO ₂ ⁻ , NH ₄ ⁺ , Mercury
Monitoring of meteorological data	Monthly	Site and surroundings	Direction, speed and frequency of prevailing wind
Monitoring of the mercury level in air	Monthly, first 2 years Quarterly remaining years	Site and surroundings	Level of mercury in the air
Monitoring of the mercury level in suspended matter	Monthly, first 2 years Quarterly remaining years	Site and surroundings	Level of mercury in particles in suspension

APPENDIX 1: CASE STUDIES

1. Reconditioning of the Almadén mines.
2. Decontamination of the Flix dam in the Ebro River.
3. Environmentally safe decommission of a mercury cell chlor-alkali plant
4. Stabilization of soils contaminated with heavy metals using low-grade magnesium oxide

LEGAL DISCLAIMER: These case studies are a non-exhaustive compilation of recent projects undertaken for mercury decontamination, and provided only for informative purposes, without implying necessarily neither a certification nor an approval by UNEP/MAP of all the procedures employed in each of the sites and of the levels of contamination that may remain in them.

CASE STUDY 1: RECONDITIONING OF THE “CERCO DE SAN TEODORO” SLAG HEAP. MINAS DE ALMADÉN (CIUDAD REAL, SPAIN).

Background

Minas de Almadén y Arrayanes, S.A. (MAYASA) is a public company belonging to *Sociedad Estatal de Participaciones Industriales (SEPI)*, which manages the mercury mines in Almadén (Ciudad Real).

Mining began in Almadén over 2,000 years ago, with production accounting for a third of historical world production.

The Almadén mining and metallurgy complex is found in the areas known as “Cerro de San Teodoro”, near the urban area and the road to Córdoba. The site includes historic mines and those in operation until July 2003.

Minas de Almadén undertook in 2005 the most important environmental project in its history: the reconditioning of the “Cerro de San Teodoro” slag heap.



CERCO SAN TEODORO SLAG HEAP. MAY 2005. Photo by Paisajes Españoles

For centuries the “Cerro de San Teodoro” slag heap has been the dump site for both sterile tailings from mining operations and slag from metallurgy processes, reaching 3.5 million tonnes and covering an area of 10 hectares.

ACTION

In deciding which rehabilitation model to follow, a number of studies were made of the slag heap and the surrounding area. A summary of these studies concluded that the **materials dumped on the slag heap are**

hazardous due to their mercury content and that the permeability of the underlying substrate is low, with no discernible lithological changes or fractures that may constitute preferential drainage paths.

Bearing these considerations in mind it was decided to undertake *reconditioning of the slag heap with in-situ encapsulation to guarantee waterproofing of the upper part of the heap, preventing refilling and therefore minimizing the effects on groundwater and surface water, as well as reducing dispersion of the material dumped on the heap that may affect the surrounding soils.*

The reconditioning of the Cerco de San Teodoro slag heap was undertaken from 2005 to 2008 and cost close to 9 million euros.

In addition to the aforementioned environmental tasks, the reconditioning of the Cerco de San Teodoro slag heap has turned the mining and metallurgy complex into a social and cultural space open to the public: the Almadén Mining Park (www.parqueminerodealmaden.es).

METHODOLOGY USED

The slag heap lies within the easternmost part of the urban area and is a topographic high compared to the surrounding relief; the foot is well defined, limited to the south by the Córdoba road, to the west by other property, and to the north by the path to the Virgen del Castillo.

The materials are piled in a slag heap outside the Cerco de San Teodoro that extends south-east and north-west, surrounding the mining site, and in a second heap inside the Cerco in the south-westernmost area.

The studies characterizing the slag heap and surrounding area yielded the following data:

COMPONENT MATERIALS

- Old metallurgy waste
- Current metallurgy waste
- Mining waste
- Other

ENVIRONMENTAL EFFECTS

- Hydrological risk
- Atmospheric risk
- Land use
- Effects on plant and animal life, geophysical processes–morphology and landscape-, and infiltration

The following action plan was drawn up to meet the established objectives:

A) slag heap conformation

The aim of this stage was the remodeling of the slag heap to improve stability and integrate it into the surrounding area. To do so, material was moved from one part of the heap to another to reduce the slope of the sides, enabling the subsequent laying of a geosynthetic pack to seal the heap.



REMODELLING OF THE CERCO DE SAN TEODORO SLAG HEAP MARCH 2006. Photo by Paisajes Españoles

B) sealing of the slag heap

The aim was to stop water entering the heap, and thus prevent the formation of leachates, the dispersion of materials through physical and thermal insulation and prevent mercury evaporation over the entire surface of the heap. A geosynthetic pack made up of 5 layers was installed.

The seal package comprises: a geotextile layer, a bentonite blanket layer, a layer of high-density polyethylene, another of drainage geocomposite, and finally a layer of reinforcement geogrid, or geocells, depending on the steepness of the sides after remodeling.

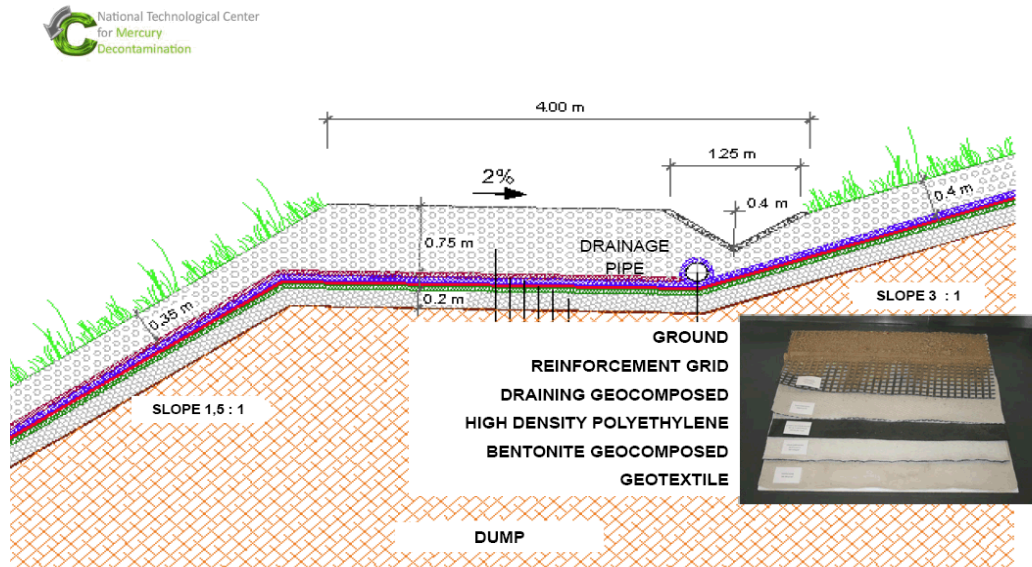


CERCO DE SAN TEODORO SLAG HEAP MARCH 2007

The geosynthetics have different functions:

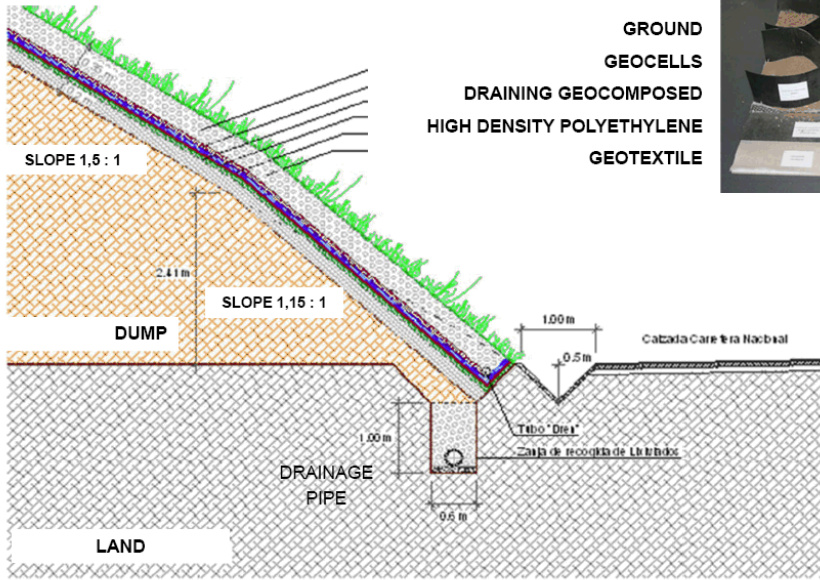
- **GEOTEXTILE:** The geotextile layer prevents piercing.
- **BENTONITE BLANKET:** This waterproofs the surface, reducing leachate formation and gas migration.
- **HIGH-DENSITY POLYETHYLENE:** The main component of the geosynthetic pack, as it guarantees that sealed area is totally impermeable.
- **DRAINAGE GEOCOMPOSITE:** This conveys water, separating and filtering the soil on which the geocomposite is laid.
- **FLEXIBLE REINFORCEMENT GEOGIRD 80 kN/m:** Installing this layer improves the stability of the earth on the surface of most the slopes on the heat.
- **GEOCELLS:** Drainage geocells are made of strips of high-density polyethylene, laid to stabilise the earth on the steepest slope.

The diagrams below show the distribution of the geosynthetic pack, according to slope.



SEALING SURFACE SCHEME

LOW INCLINATION SLOPE



SEALING SURFACE SCHEME

HIGH INCLINATION SLOPE

C) installation of a water collection, circulation and discharge system

This stage of the remediation aims to prevent erosion that may affect the stability of the slag heap. A water collection, circulation and discharge system was installed, through the construction of ditches, drainpipes and perimeter channels that collect runoff and prevent future erosion, which would affect the stability of the slopes.

D) restoration of plant cover

This action aims to recover plant life on the restored surface and integrate the slag heap into its surroundings. To do this, 50 cm of earth was added to the whole surface, a total of 180,000 m³, followed by the mechanical hydroseeding of a 16-ha areas to aid the regeneration of plant cover.



CERCO SAN TEODORO SLAG HEAP JANUARY 2008. Photo by Paisajes Españoles

EVALUATION OF RESULTS AND CONCLUSIONS

Since the reconditioning work was completed in 2008, the most obvious results observed have been:

- Integration of the slag heap into the landscape.
- Elimination of waste dispersal in the immediate area.
- Acceptable levels of mercury evaporation into the atmosphere.
- Leachate formation is almost zero, with no addition to nearby streams or groundwater.

Quality control during the course of the works, along with the significant environmental aspects identified for the project, was undertaken according to the Environmental Monitoring Plan (EMP) designed for the reconditioning project.

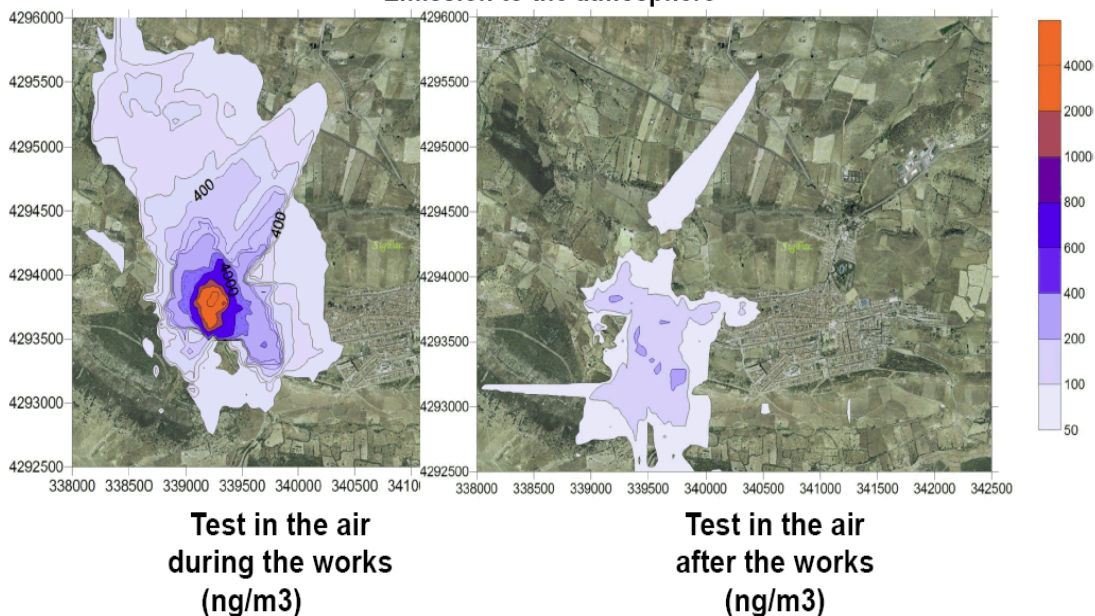
Currently, the post-completion monitoring established in the EMP continues. To date, the most reliable result observed is the drop in mercury levels in the air, as can be seen in the figures below from the study of air emissions undertaken during and after the reconditioning works.



RESTORATION OF THE WASTE HEAP IN THE SAN TEODORO ENCLOSURE

The first results:

Emission to the atmosphere



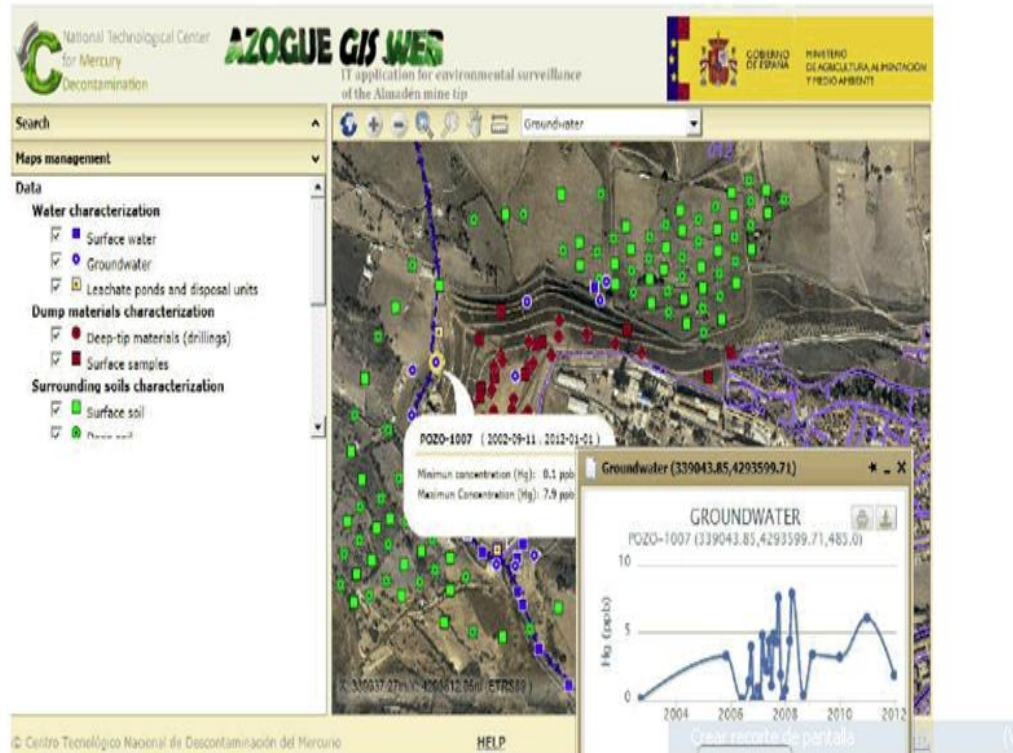
Source: Dr Pablo Higuera (UCLM)

In regard to water quality, although in some surface waters a notable improvement was observed, some more time is needed before more significant results are obtained.

The development of the analytical data on these waters can be followed on the website of the “Centro Tecnológico Nacional para la Descontaminación de Mercurio (CTNDM): <http://www.ctndm.es/proyectos/1-in.php> where the data obtained is dumped monthly under the reconditioning Environmental Monitoring Plan, which includes the gathering of monthly samples at a number of points in surface and groundwater around the slag heap.

CASE STUDY 2: DECONTAMINATION OF THE FLIX DAM IN THE EBRO RIVER (Tarragona, Spain)

Authors: Marc Pujols, Project Manager, and Gracia Ballesteros, Deputy Director of Engineering and Construction. **ACUAMED.**

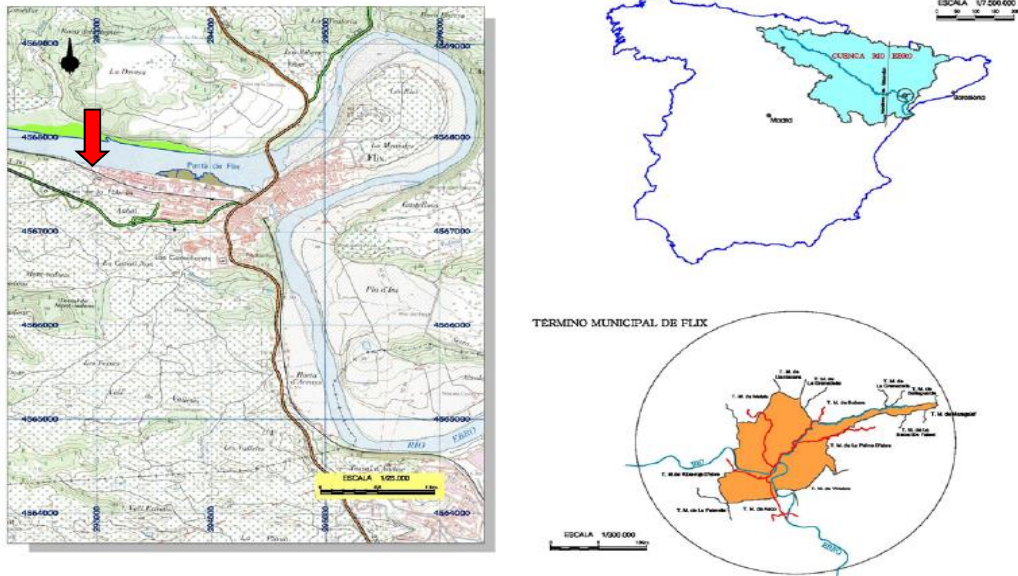


[Software application for the environmental monitoring of the Almadén mine slag heap](http://www.ctndm.es/proyectos/1-in.php)

<http://www.ctndm.es/proyectos/1-in.php>

SUMMARY

The Flix dam, located in the lower stretch of the Ebro, retains in its basin some six hundred thousands cubic meters of sludge mainly dumped by a chemical plant located on the right bank. This sludge was the residual product of the plant's operations, and is composed of both chemicals and inert components. There are three main groups of contaminants: organochlorines (with persistent organic pollutants such as DDT and PCBs), heavy metals (mainly mercury) and radionuclides.



Location of the polluted site in the riverside of the Ebro

The concentration of the contaminants in the mud is relatively high, and they can be potentially mobilized; in fact, such transmission has actually occurred—as shown in the register of specific episodes in which the limits of tolerance of aggressive components contained in the ecosystem have been exceeded.

In light of this situation, the Spanish Ministry of Environment decided to start a process of designing, analysing, developing, comparing and finally choosing the means by which to correct and prevent, or mitigate, the transmission of these toxic elements into the environment.

As a result, the state company Aguas de las Cuencas Mediterraneas, S. A. (ACUAMED) was entrusted with the project of the elimination of the chemical pollution of the reservoir at Flix.

BACKGROUND

The accumulation of historical dumping can lead to situations that make the ecosystems vulnerable due to natural phenomena - floods, winds or sudden temperature changes. Just such a scenario is the situation in the Flix reservoir.

The production of chemical products on the banks of the river began in the late nineteenth century, and since then, the kind of substances produced have been large and varied, in accordance with technological advances and demand.

The initial processes were based on chlorine and caustic soda, obtained from the raw material of common salt, through an electrolytic process using mercury. More



Aerial view, 1970

recently, apatite has been introduced in huge amounts as raw material in order to produce di-calcium phosphate. This apatite naturally contains a percentage of radionuclides, which, during the production process, are physically dumped. In addition to this, also to be considered is the fact that some of the contaminants found in the mud also come from the natural drag occurring upstream of the factory.

In addition, the River Ebro's morphology has substantially changed over the past century. Every time that a dam is built on the river, the immediate consequence is that the pool produced in the water increases sedimentation, and therefore reservoirs have a propensity for clogging. The Flix reservoir is no exception. The erosive force and natural drag of the River Ebro as it passed through this area was reduced following construction of the dam. Until then, most of what was dumped from the factory had been washed away downstream, but after construction of the dam, the vast majority of the dumped materials remained in the reservoir basin.



Aerial view, 1985

As previously mentioned, the contaminants belong to three main groups: heavy metals (mainly mercury), organochlorines and radionuclides (from the mineral used in the phosphate process).

Given the variety of processes carried out at the factory, in addition to those already mentioned, there may be others arising from chlorination processes, like DDT (1945-1975), PCBs (1959-1987), Hexachlorbenzene, and diverse reaction by-products.

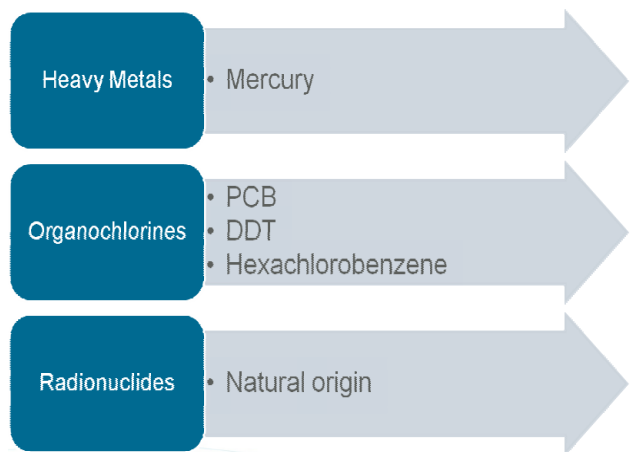
In light of all of this preliminary data, a search for solutions has been undertaken, in order to avoid either continuous or periodic risk of contamination.

WASTE GENERATING PROCESSES

The materials that make up the bank of the reservoir beside the factory mostly come from factory activity. The processes that produced or caused the majority of the materials deposited or that have settled in the bank are:

- a) **Combustion of coal.**
- b) **Dissolution of salt.**
- c) **Trichloroethylene.**
- d) **Perchloroethylene and carbon tetrachloride.**
- e) **Dicalcium phosphate.**

POTENTIALLY POLLUTING PROCESSES



SOLUTIONS CONSIDERED

Studies carried out have established that possible solutions can be classified into two groups depending on whether the waste is finally kept in the reservoir (in-situ solutions) or, conversely, collected and placed at another point (ex-situ solutions).

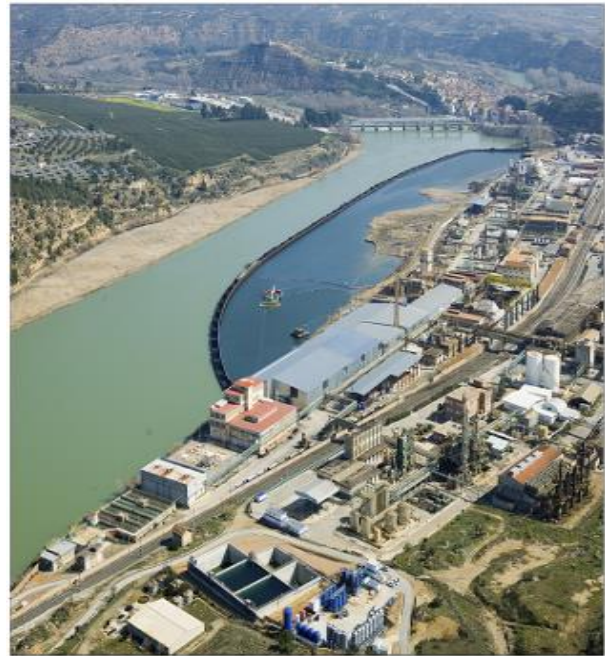
The key elements that define the optimal solution within each group are:

- In-situ solution: the creation of a working area, making up of waste, waste treatment and protection from river erosion.
- Ex-situ solution: creating a working site, removal of waste, treatment, transport to a dumping area and the dumping area itself.

ADOPTED RESOLUTION

The Monitoring Commission formed by various government bodies, including the Hydrographic Confederation of the Ebro, the Spanish Ministry of the Environment, the Government of Catalonia, the Flix municipality, the Spanish National Research Council, the Consortium for the Protection of the Ebro Delta (CEPIDE) and the project promoter (ACUAMED), after studying all the responses received from more than 80 organizations consulted to study the alternatives, including that of 'no action', decided that the ex-situ solution was the most environmentally safe alternative, since it actually reduced the level of pollutants and provided more guarantees.¹⁰

When designing and planning activities, a series of corrective measures to minimize the impact on wildlife were considered, because a nature reserve was located upstream nearby, with flooded grasslands and wildlife as diverse as the golden eagle, imperial heron and the otter.



View of the site with the on-going decontamination works (2012)

¹⁰BOE (Spanish Official Gazette), RESOLUTION of 25 October 2006, of the General Secretariat for Pollution Prevention and Climate Change, formulating an environmental impact statement on the assessment of the project Removal of Chemical Pollution from Flix Reservoir (Tarragona).

PRELIMINARY WORKS



Dredging activities inside the sheet piling

-
-
-
- Construction of a **double wall of sheet piling 1300 m in length**, enclosing a working area on the right bank of the reservoir to isolate the contaminated river sludge, which must be executed prior to manipulation of the significantly contaminated mud. The main aim is to create a protected area (still water), independent from the Ebro's flowing water, so that during the performance (during the works inside the reservoir) the river can flow through a channel at the left bank of the reservoir. Should an incident occur during the process, the working area will remain confined and pollution won't be sent downstream.
- Construction of a **secant pile retaining wall 1100 m in length** on the shoreline of the right bank of the reservoir, to avoid the risk of landslip of the bank due to the removal of the waste, while preventing subsurface flow from the factory into the river.
- Construction of an **interceptor sewer for the existing waste drains** at the factory.
- Construction, within the factory compound, of **various industrial buildings to house the treatment facility for the extracted material and water**, as well as the collection centres.
- Construction of **seven wells for the supply of water to the towns situated downstream**. Its use is exclusively reserved in case of emergency.
- **Adequacy and waterproofing of a Class II landfill** (type of landfill engineered for wastes that are neither toxic nor inert) in el "Racó de la Pubilla" (at a distance of 6 kilometers away from the river), following demanding criteria above and beyond that required by current legislation.



Conditioning works in the “Racó de la Pubilla” Landfill

DEPOLLUTION WORKS

After building the site, the removal of waste can proceed. The removal of the submerged fraction of mud will be done using suction ecological dredges, which will work surrounded by floating plastic curtains. This will minimize the disturbance of contaminants and will create a depression in the dredge area, where the water



One of the wells constructed for drinking water supply to downstream towns in case of emergency

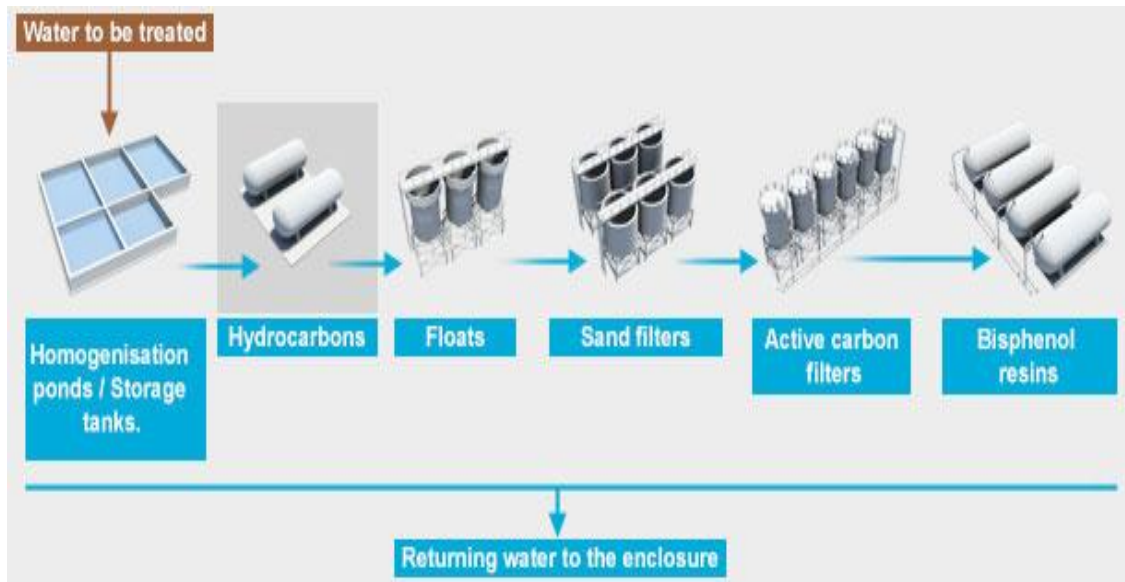


will be easily kept. This is complemented by the provision of a small pump that can operate when the dredger stops. To prevent the disturbance of contaminants, the dredging should be necessarily low.

Once removed, the material must be subjected to a treatment, the aim of which is to achieve waste conditions that enable it to be admitted for final containment in the dumping area provided.

The treatment consists of:

- **Soil size classification**, using sieves and hydrocyclones, followed by the **drying** of all the extracted material, with settling tanks and press filters.
- The solid fraction will be classified depending on its contaminant concentrations, sending clean fractions directly to the filling area, and dealing specifically with those fractions that would be rejected at the dumping area. After studying all the possibilities, the chosen treatments (alternative or sequentially) are:
 - **Thermal desorption** (vs. organic compounds): The material is introduced into the desorption oven at less than 350°C to avoid evaporating the mercury. The gases coming from the desorption oven pass to a thermal oxidation oven where they are heated again, this time to 1100°C. After this, the temperature is cooled quickly to less than 200°C to prevent the formation of dioxins. The resulting gas from the thermal oxidation oven passes through a fabric filter to collect the particles in suspension.



principal contaminants from the dehydrated sludge are volatile compounds in moderate concentrations, it is oxidized in the mixing tank by the addition of reagent and water. After mixing, the material passes to the reaction tanks. Two hours later, the result is an inert compound that is insoluble in water and ready to be taken to the landfill site.

- **Stabilization** (vs. heavy metals): If the dredged sludge has high concentrations of mercury and other heavy metals, it is processed in the stabilization plant. Passing through some hoppers, the sludge is inertized with cement and specific additives to stabilize the mercury and prevent its presence in the possible leaching of the sludge.
- **Water** is sent to a **treatment plant** (WWTP), the capacity of which is around one hundred litres per second.

The diagram below highlights the crucial importance of the contamination controls at the end of each process, before approving the continuation in the chain of decontamination. Strict security guidelines are also followed during the handling of materials, to prevent any impact on people or the environment.

After the treatment, the material will be transported by trucks to the “Racó de la Pubilla” class II landfill (type of landfill designed for residues that are neither toxics nor inerts.)

DISMANTLING WORKS

The works are due to be finished by the end of 2015, and it will imply the following actions:

- Closure of the landfill site.
- Dismantling of the sheet pile wall.
- Dismantling of the surface water interceptors and repositioning of the landfill to the reservoir for the rainwater drains.
- Removal of the mobile and mechanical elements from the treatment plant.
- Dismantling of the plant building and fixed elements contained within.
- Reinforcement via coarse rubble slope against the pile wall along the full extension of where the extraction of material has taken place next to the secant pile protection wall.

SECURITY MEASURES

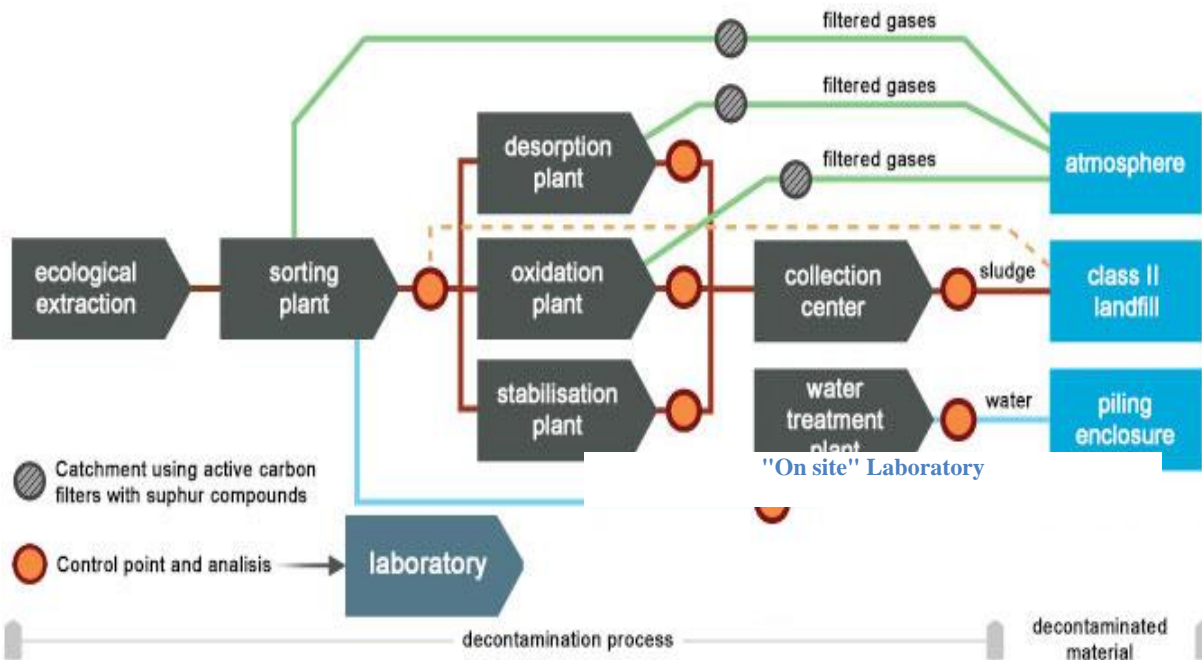
As already pointed out, the security measures include the floating plastic curtains and the double wall of sheet piling, as well as an intensive daily quality control of the water, upstream and downstream, both outside and inside the enclosure area.



Daily water quality control points

These tests, as well as the analysis of the dredged material, are carried out in the 'on site' laboratory, which includes the following equipment:

- Gas chromatography coupled with mass spectroscopy.



- Ion chromatography with conductivity detection.
- Atomic fluorescence.
- Visible and ultraviolet molecular absorption spectrophotometry.

- Plasma induced spectroscopy emission.
- Selective electrode system.
- Alpha radiation meters with zinc sulphur detectors.
- Beta radiation meter using a detector proportional to the gas flow.
- Gamma radiation meters using sodium iodide and germanium detector.

INFORMATION TO THE PUBLIC

A website has been devoted to inform the public with the details and news of the project.



www.decontaminationflix.com/

COST OF THE PROJECT

The total cost estimated is around 192 M€, of which 70% is co-financed by European Union funding, with the following breakdown of major items:

Treatment plant	50 M€
Conditioning of dumping area	38 M€
Sheet pile wall	21 M€
Pile wall	15 M€

Dredging	12 M€
Other	56 M€
Total	192 M€

CASE STUDY 3: ENVIRONMENTALLY SAFE DECOMMISSION OF A MERCURY CELL (CHLOR-ALKALI PLANT)

Author: Antonio Caprino. Electrolysis Production Manager. SOLVAY IBERICA, MARTORELL.

The decommission of a mercury-cell (chlor-alkali plant) is potentially one of the processes most likely to involve major release of mercury into the environment. It involves a series of steps that require thorough and carefully planning. The amount and composition of the waste generated may vary greatly, from protective equipment of workers like gloves to slag, production equipment, containers, rubble....

Below are the steps to be followed in the decommissioning of a mercury-cell, with special emphasis on the precautions to be taken to ensure human health and safety and to prevent environmental contamination, based on Euro Chlor documentation on decommissioning and on Solvay's experience in this field.

1. Introduction

In the 20th century, mercury electrolysis was commonly used in chlorine production worldwide; however, the use of mercury and the advent of new technologies mean that this technique is now largely obsolete. Indeed, no electrolysis plant using this technique has been built since the 1960s.

Given the challenge facing the sector in regard to the change in technology, Euro Chlor (an organisation that groups together most European chlorine manufacturers) undertook voluntarily to cease mercury-based chlorine production in Europe by 2020. In the Mediterranean Region no mercury-based plants shall remain in operation by 2020¹¹.

At global level a similar process is being followed: in 2002 there were 92 mercury-based plants, while by 2011 only 53 remained. UNEP reached an agreement in 2013 (Minamata Convention on Mercury), under which mercury-cell chlor-alkali plants will cease to operate between 2025 and 2035 in those countries that ratify the Convention.

Given this situation, it seems appropriate to compile a document of good practices to be followed during the decommissioning of such plants.

2. The case of Solvay

Solvay is a world leading producer of chlorine with 13 plants producing over 2 Mt of chlorine a year. Four of these plants still use mercury cell technology. Between 2006 and 2011 there were 3 conversions made from Hg to membrane cells:

2006 in Rosignano, Italy

2007 in Bussi, Italy

2009 in Santo André, Brazil

Two changeovers will be completed in 2013: Lillo (Belgium), and Tavaux (France).

¹¹ Legal requirement of the Regional Plan of the Barcelona Convention for the reduction of inputs of Mercury. UNEP MAP, 2012.

Based on these experiences, an explanation is given of how the decommissioning of a mercury cell plant is managed during the technology change process. The reference documents will be cited, along with the team in charge of the process and a breakdown of the operations to be carried out at local level, all based on the latest cases at Rosignano and Santo André. Finally, the main lessons learned from these processes are summarised in a list of good practices to be considered.

2.1 Managing the decommissioning process

2.1.1 Reference documents

- Euro Chlor Env Prot 3, *Guidelines for Decommissioning of Mercury Chlor-Alkali Plants*.
- Euro Chlor Env Prot 19, *Guidelines for the preparation for permanent storage of metallic mercury above ground or in underground mines*.
- Local documents such as: SHD (Syndicat des Halogènes et Dérivés) France - '**Protocol for decommissioning of a mercury cathode electrolysis unit**' ,
- Company's own documents (Internal procedures, Schedules, action plans...)

2.1.2 Organisation

In order to undertake the required decommissioning processes it was decided to put together a team to define how these processes should be managed at the various Group plants.

The team was made up of process experts and SHE (Safety, Health and Environment) experts who defined the process and its scope, and created a technical database on the mercury-contaminated equipment and the recommended treatment.

The team also included experts in procurement to ensure good economic management during the investment period.

2.1.3 Phases of the operating process

2.1.3.1 Phase 1: preparation and planning

An estimate must be made of the contaminated waste to be treated, including the anticipated amount and concentration of mercury.

Likewise, it must be decided which equipment is to continue to operate during the decommissioning process to prevent workers from being exposed to mercury and contamination of the environment. This is normally gas scrubbing and wastewater treatment installations.

Based on experience, the amount of contaminated material to be treated varies between 1000 and 6000 t per plant (excluding buildings), a non-comprehensive list is given below by way of example:

- Carbon steel and other metals such as copper and aluminum
- Mercury
- Graphite and activated carbon
- Polyester reinforced and non-reinforced PVC, polyester resins, other plastics
- Coverings, e.g. ebonite, neoprene and butyl
- Joints made from diverse materials

- Sand and clay
- Electrical equipment
- Concrete, brick, rubble
- others

This list is used to define the treatment of each type of waste or whether it is to be sent to landfill. The treatment of each waste type is decided according to the description in the database prepared by the central team and the stipulations of each country's legislation.

One important point to be borne in mind is that, at the beginning of the process, suitable metal containers must be made available to store the metallic mercury from the electrolyzers temporarily.

Next, a call for bids can be made amongst contractors and a detailed plan of the process drawn up. This plan should include informing the authorities that all aspects of waste have been considered, including treatment, environmental control during the decommissioning process and all those concerning the protection of the personnel involved.

Finally, the number of workers required must be defined, both on the pay roll and freelancers, protective equipment, biomonitoring and environmental control.

2.1.3.2 Phase 2: Operations

This in turn is divided into three stages.

Stage one, called 'Basic Health and Safety Provisions' comprises the following operations:

- Emptying installations containing metallic Hg and process fluids.
- Thorough cleaning and confinement of the various contaminated cells, and, if necessary, covering them with water, to prevent emissions of Hg into the atmosphere.
- Dismantling of uncontaminated equipment (e.g. anodes, cell panels, etc.).

Such work must be undertaken by qualified personnel, usually the same involved when the plant was in operation.

In **stage two** the mercury-contaminated equipment is dismantled and undergoes appropriate treatment according to the establish plan. Only the equipment that must remain operable for reasons of SHE is not dismantled. This work can be undertaken by contractors if there is not enough permanent staff.

Finally, in **stage three**, the remaining equipment is dismantled (e.g. control gear, treatment units, etc.). This work is mostly done by contractors.

3. Case study photos

Below are some case study photos that illustrate the steps described.



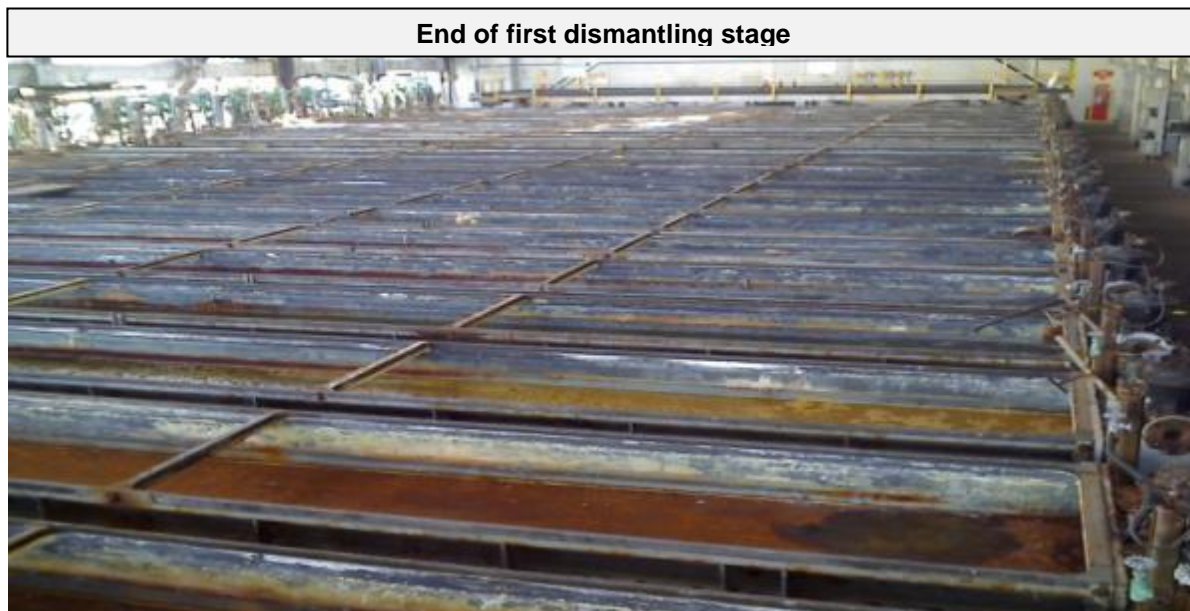
Cell confinement (connected to the air treatment unit)

Working area for safe handling of contaminated equipment connected to the Hg effluent treatment unit, regularly washed down with water



Floor of cell room regularly washed down





4. Good practices learned

The decommissioning of a mercury-cell chlor-alkali plant must be managed as a specific project :

1. By a full-time team, enthusiastic and committed to the project, able to come up with innovative solutions that improve on current procedures. Personnel must be qualified and experienced, particularly those in charge of emptying circuits and dismantling contaminated cells in stage one.

2. The project must be carefully planned following available documentation and according to the specificities of each plant.
3. A number of things must be defined in the initial phase:
 - a. How to shut down the cell room (all at once or in sections)
 - b. Which cells should remain operative for SHE reasons.
 - c. Listing contaminated cells and waste types with the corresponding treatment, which will serve when informing the authorities and drawing up requests for bids from contractors.
4. The protection of workers and the environment is a crucial aspect. Prior to the start of the work, the protective equipment to be used, the cells which are to remain operative to ensure minimum exposure, monitoring of the environment and water and biomonitoring must all be determined.
5. Finally, to ensure the success of the process, it is essential to implement progress indicators for the control and monitoring of the project.

5- *Safe treatment of waste from the decommissioning of a chlor-alkali plant*

The table below shows some recommended forms of treatment for waste containing mercury in the chlor-alkali industry, according to the BAT reference document.¹²

Type of waste	Characteristic	Typical amounts (g/t Cl ₂)	Hg content before treatment (g/kg)	Treatment	Final Hg mercury (mg/kg)
Brine sludge	Inorganic waste	Up to 20 000, depending on	<0.150	Landfill following stabilisation	
Sludge from effluent treatment	Activated carbon	50-400	10-50	Distillation/landfill following stabilisation	Hg recovered / <10 in
Carbon sludge from caustic filtration	Activated carbon	20-50	150-500	Distillation/landfill following stabilisation	Hg recovered / 20-200 in
Gas emission filters	Activated carbon	10-20	100-200	Chemical treatment Landfill following stabilisation	Hg recovered / 20-200 in
Sludge from storage tanks, sinks, etc.		May contain large quantities	High Hg content in general	Distillation	Hg recovered
Rubber coating	Variable		Variable	Acid bath, cryogenic and/or washing	300
Metal-coated materials	Surface contamination		In general, <0.1%	Heat, cutting and washing or cryogenic	

¹²European Commission (2001): Integrated Pollution Prevention and Control (IPPC) - *Reference Document on Best Available Techniques in the Chlor-Alkali Manufacturing industry.*

Steel and iron parts from building	Variable amounts	Inhomogeneous In general, <0.1%	Acid bath/sold as waste	<5-10
Concrete and other construction	Variable amounts	Inhomogeneous/ In general, <0.1%	Landfill as hazardous waste or other waste according to content	>10 /<10

The table below shows the typical waste materials generated following the decommissioning of a chlor-alkali plant and their possible treatments for mercury recovery ¹³

<u>Typical material contamination</u>			<u>Possible treatment</u>			
Material	Typical percentage of Hg w/w	Physical state	Physical/mechanical treatment	Washing with water	Chemical washing	Retorting
Sludge from storage tanks and sinks	10 - 30	Wet solid				
Sludge from sedimentation tanks, drains, etc.	2 - 80	Wet solid				
Sulphurised or iodised charcoal from hydrogen purification	10 – 20	Dry solid				
Carbon from soda filters	Over 40	Wet solid				
Graphite from decomposers	2	Porous solid				
Rubber/packaging	Variable	Variable				
Brick/concrete	0.01 – 0.1	Dry solid				
Hg cell components (anodes, side walls, pipes...)	Variable	IC				
Steel (cells, decomposers, scrap metal, H ₂ condensers, pumps, pipes...)	0.001 – 1	SSC				
Plastic equipment	<0.1	SSC				
Copper conductors	0.04	SSC				(For flexible sheets)

¹³Decommissioning of Mercury Chlor-Alkali Plants. 5th Edition. September 2009, Euro Chlor

<u>Typical material contamination</u>			<u>Possible treatment</u>			
Material	Typical percentage of Hg w/w	Physical state	Physical/mechanical treatment	Washing with water	Chemical washing	Retorting
Cell seal (concrete layers)	0.01					
Asphalt	1 - 20	IC				
Concrete and subsoil	Variable	IC				
Wood	Variable					
Floor	Variable	IC				
Thermal insulation	0.03		No treatment prior to dumping			
Retort waste	< 0.1 – 0.1	Porous dry solid				
Wooden floors	0.05 – 0.08	IC				

IC: Inhomogeneous contamination / SSC: Solid with surface contamination

CASE STUDY 4: STABILIZATION OF SOILS CONTAMINATED WITH HEAVY METALS USING LOW-GRADE MAGNESIUM OXIDE

Author: José María Chimenos. University of Barcelona (UB)

The stabilization treatment with a pH-buffering chemical is an option to consider when the best alternative considered is to remove a contaminated soil with heavy metals from its emplacement, without a process of decontamination, and move it to a suitable landfill or safety cell.

This process of chemical stabilization minimizes heavy metals solubility. Lime or a mix of cement and lime are the usual buffering agent for many kinds of waste, but with the high pH values obtained with lime - a strong alkali - , the leachate water collected in the landfill may contain high concentrations of heavy metals, due to the redissolving of the previously formed metal hydroxides.

The most common heavy metal hydroxides reach their minimum solubility at a pH between 8 and 10. In the chemical stabilization of soils polluted with heavy metals it should be used an alkaline product with solubility equilibrium at that pH interval, and with a competitive price compared to lime.

Magnesium hydroxide, $Mg(OH)_2$, can be the most appropriate candidate, as it has minimum environmental impact, low solubility and pH equilibrium on contact with water close to 9.5. However, natural magnesium hydroxide (Brucite) is scarcely reactive, and the hydroxide on the market costs ten times the price of calcium oxide or hydroxide. More affordable is the low-grade magnesium oxide (MgO), which can be used as a stabilizing agent and is obtained from the calcination of the mineral Magnesite.

If mercury is present in the soil, it has to be carefully considered the possibility of formation of methylmercury, or its complexation with organic matter, such as humic acid. In this case, the stabilizing agent wouldn't be effective.

Here below is a description of some cases of stabilization of soils contaminated with heavy metals using low-grade MgO .

- 1- In 1998, Inabonos S.A. (a Roullier Group company) undertook the cleaning and decontamination of a 74,408m² plot in a former emplacement in Lodosa (Navarra, Spain), by moving contaminated soil to a safety cell, with the objective to build a new housing development. The process causing the contamination was the production of sulphuric acid from pyrite –iron sulfide-, a mineral with a high content of heavy metals. The waste generated in the process contained iron oxides and heavy metals such as lead, zinc, arsenic, copper, mercury, cobalt, cadmium, chrome, nickel, tin, selenium, tellurium, and antimony and could be found up to a depth of 2.5 meters. Mercury concentration reached a peak of 1.7 g/Kg in the first half meter of depth.

120,000 m³ of contaminated soil were extracted from the site, transported to a safety cell and stabilised. Stabilization was a gradual process, alternating layers of earth, approximately 0.5 m thick, with layers of hydrate - obtained from the calcination of natural magnesite and produced and marketed by the company Magnesitas Navarras S.A.-.This layer acted as a filter bed for the percolates from upper layers. The percentage of stabilizer added was about 5-6% by weight of the contaminated soil dumped in the safety cell. After dumping and stabilization, the safety cell was closed. Thus, leachates collected in the troughs of the safety cell could be discharged into natural watercourses without undergoing prior treatment, except those effluents with a high sulphate content.

- 2- On a coastal city nearby Barcelona, the ex situ stabilization of 12.5 hectares containing ashes from pyrite roasting along with pyrite mineral with high sulphur concentration of a former inorganic fertiliser factory

was undertaken using 10% low-grade magnesium oxide. The final objective of this treatment was to move the stabilized soil to a Class II controlled landfill.

- 3- On a Spanish coastal city, a pre-pilot study was undertaken of in-situ stabilization with magnesium oxide of soil contaminated by the uncontrolled dumping of a former fertiliser factory. The area treated covered 200 m² and was 2 m deep. The stabilizing agents were added by injection and the contaminated soil homogenized using a rotovator. The results obtained show that the leachates from the samples stabilized with low-grade magnesium oxide enable a pH of between 9.5 and 10.5 , which is the optimal interval to minimise the solubility of heavy metals.

Draft Decision IG.22/10

**Implementing the Marine Litter Regional Plan in the Mediterranean
(Fishing for Litter Guidelines, Assessment Report, Baselines Values, and Reduction Targets)**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as the Barcelona Convention,

Recalling the Regional Plan on the Management of Marine Litter in the Mediterranean adopted by Decision IG.21/7 of the 18th Meeting of the Contracting Parties providing for programmes of measures and implementation timetables to prevent and reduce the adverse effects of marine litter on human health and the marine and coastal environment, herein after referred to as the Regional Plan;

Recalling also Article 7 of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and Activities on common criteria and standards;

Recalling Decision IG. 20/4 and IG 21/3 of the 17th and 18th Contracting Parties meetings “on ecosystem approach” adopting Ecological Objectives, Operational Objectives, GES and related targets for the ecological objective on marine litter;

Considering that the Mediterranean Sea is severely affected by marine litter, due to its closed basin with only few exchanges with other Oceans, densely populated coasts, highly developed tourism, having 30% of the world maritime traffic and various additional sources of litter such as rivers and very urbanized areas;

Fully aware of the importance of promoting circular economy to prevent marine litter generation and reduction of its impact on marine and coastal environment;

Adopts the Fishing for Litter Guidelines in accordance with Articles 9(6) and 10(e) of the Regional Plan as contained in Annex I to this Decision;

Adopts the marine litter baseline values contained in Annex II to this Decision against which the implementation of Regional Plan programmes of measures should be assessed for indicative purposes, taking into account that such values will be subject to periodic adjustment based on additional new data coming from the implementation of National Marine Litter monitoring programmes as well as their specification where appropriate at sub regional and/or national levels;

Adopts, without prejudice to relevant existing or to be adopted stricter reduction and prevention targets, a basin-wide marine litter reduction target of 20% of beach litter by 2024 and a significant and measurable decrease of other marine litter items as contained in Annex III to this Decision;

Takes note of the updated Marine Litter Assessment Report prepared by the Secretariat (MED POL) (Information document UNEP(DEPI)/MED WG.421/Inf.18) in accordance with Article 11(e) of the Regional Plan as the first Marine Litter Assessment after the entry into force of the Regional Plan;

Strongly encourages the Contracting Parties to take the necessary measures to implement the Regional Plan in a timely manner considering as appropriate measures related to micro-plastic; and submit a report on measures taken by 2017 for the considerations of COP20;

Invites all Contracting Parties to join and contribute to the Global Marine Litter Partnership led by UNEP;

Requests the Secretariat (MEDPOL, REMPEC and SCP/RAC) to facilitate the work of the Contracting Parties for the implementation of the Regional Plan and ensure for this purpose strong synergies and regular coordination with other regional organizations working on marine litter in the Mediterranean,

with special emphasis on regional processes of adjacent marine regions such as the Black Sea Commission and OSPAR.

ANNEX I
Fishing for Litter Guidelines

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Background

Marine litter has been acknowledged at global level as an emerging threat with significant implications for the marine and coastal environment. Its impacts are environmental, economic, health and safety and cultural, and are rooted in our prevailing production and consumption patterns. The problem originates mainly from land-based activities as well as from sea-based activities. The limited governmental financial resources, the poor stakeholders understanding of their co-responsibility in generating and solving the problem, and the weak enforcement of laws and regulations are among the main factors that the problem of marine litter has not been addressed effectively.

Marine litter has been an issue of concern in the Mediterranean since the 1970s. The LBS Protocol of the Barcelona Convention recognised the importance of dealing with the problem of marine litter. The amended LBS Protocol, 1996 and entered into force in 2008 provides for litter as any persistent manufactured or processed solid material which is discarded, disposed, or abandoned in the marine and coastal environment.

The Mediterranean was designated a Special Area for the purposes of Annex V (Prevention of pollution by garbage from ships) of the MARPOL 73/78 Convention.

In December 2013 COP 18 of the Barcelona Convention adopted the Regional Plan on Marine Litter Management in the Mediterranean (hereinafter MLRP) that represents among others a set of legally binding measures to prevent and reduce marine litter generation and improve its management with the view to achieve the ECAP GES and targets on marine litter also adopted by COP 18. Thus, the Mediterranean Sea is the first regional sea to have a plan in dealing with the issue of marine litter. In the MLRP the following marine litter definition is provided: “Marine litter, regardless of the size, means any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment”.

Fishing for Litter (hereinafter FfL) is referring to the removal of marine litter from the sea by the fishermen.

The MLRP provides for FfL as one of the most important measures that has the potential to reduce the amounts of marine litter at sea by involving one of the key stakeholders sectors, the fishing industry. Apart from removing litter from the sea, mainly from the seafloor, these practices substantially contribute to raising awareness on the problem within the sector and the need for better waste management.

In 2011 the Honolulu Strategy, developed in the course of and after the 5th International Marine Debris Conference, organised by UNEP and the US National Oceanic and Atmospheric Administration (NOAA) Marine Debris Programme, stated FfL in its strategies C4 and C5.

FfL initiative has demonstrated on a limited scale that the objectives and aims of the scheme can gain the support of the fishing industry, harbour authorities and local authorities. Furthermore, it can contribute to changing practices and culture within the fishing sector, provide a mechanism to remove marine litter from the sea, and raise awareness among the fishing industry, other sectors and the general public.

FfL initiative integrates several benefits: environmental, social, economic and scientific.

The MLRP has two provisions addressing FfL: explore and implement to the extent possible by the year 2017 the FfL environmentally sound practices (Art. 9.6) and the need to consider EIA and environmental impacts of implementing FfL drawing the attention that the best environmental practices and techniques should be used for this purpose due to the fact that such interventions may also have a very negative impact on marine environment and ecosystems (Art. 10.e).

In the Convention on Biological Diversity Expert Workshop to Prepare Practical Guidance on Preventing and Mitigating the Significant Adverse Impacts of Marine Debris on Marine and Coastal Biodiversity and Habitats held in Baltimore, USA in December 2014, “Encourage fishing for litter initiatives” is included on the list of suggestions made for marine debris mitigation and management (predominantly plastic) of the Draft Background Document¹. This document also provides an update to the review of the impacts of marine litter undertaken by the Scientific and Technical Advisory Panel of the GEF in collaboration with the Secretariat of the Convention on Biological Diversity, and jointly published as CBD Technical Series 67 in 2012.

FfL activities have been widely applied mainly in NE Atlantic Ocean, and specifically in the North Sea; FfL actions in the Baltic Sea and in the Mediterranean Sea have been undertaken more recently while no such actions have been initiated yet in the Black Sea. At global level, one project is under development in the United States with energy recovery from the fishing gear removed.

In the Mediterranean, five projects are currently being implemented: Ecological bags on board (Spanish East Coast), *Ecopuertos* (Andalusian Coast, Spain), DeFishGear (Adriatic Sea), Port of San Remo (Ligurian Coast, Italy) and Port of Rovinj (Northern Adriatic Sea, Croatia). A summary of these projects are presented in Annex 2.

Despite FfL is mainly considered at local scale, marine litter is a transboundary problem and therefore a coordinated, harmonised and coherent approach is the best way to tackle it.

At all levels, cooperation in FfL practices should be based on the exchange of relevant information and on addressing significant transboundary marine litter issues. Agreements should be made so that any vessel involved in the FfL practice can land non-operational waste at participating harbours in Mediterranean countries and other neighbouring countries.

Cooperation between Regional Seas Conventions will be more effective if the work undertaken within these conventions following their regulatory framework takes the same approach.

In this context, in accordance with UNEP/MAP Programme of work on pollution assessment and control thematic priority and the objectives of the project on ecosystem approach funded by the EC the following “Guide on best practices for Fishing for Litter in the Mediterranean” are developed to be commonly agreed at the Mediterranean level and implemented accordingly.

1. Introduction

There are two types of FfL practices: active and passive. Active practices are specifically performed to remove marine litter and fishermen involved are paid; passive practices are carried out by fishermen during their normal fishing activities without financial compensation.

Regarding to active ones the following practices can be considered:

1. Marine litter removal practices during specific fishing trips to remove litter from hotspots (marine litter accumulation) or from protected areas with financial compensation of the fishermen involved.
2. Retrieval of derelict (abandoned, lost or otherwise discarded) fishing gear at sea where individual fishermen are contracted to retrieve nets.

In both cases, expertise is needed to undertake marine litter removal actions. This removal involves fishermen and qualified divers locating and removing marine litter and derelict fishing gear (hereinafter DFG). They use various technologies to locate litter, such as side-scan sonar for sea-bed surveys, map locations on the basis of interviews with fisherman, or in the case of DFG information

¹ Background Document (Draft) on the Preparation of Practical Guidance on Preventing and Mitigating the Significant Adverse Impacts of Marine Debris on Marine and Coastal Biodiversity (Document UNEP/CBD/MCB/EM/2014/3/INF/2).

systems that tracklost gear, and remove the litter from the marine environment using specialist equipment.

The removal of marine litter requires specific skill sets and experience from the fishermen –especially when bulky or heavy items and nets are retrieved. It is recommended to work with active fishermen that have good knowledge of techniques and the targeted areas (i.e. of the level of activity of the various fisheries in these areas, now and in the past).

Divers might be used to support retrieval operations, depending on the depth and the topography of the seafloor. Working with divers can help to minimise the impact of marine litter and DFG removal on the marine environment and to increase its efficiency and effectiveness. Marine litter and DFG retrieval requires a thorough understanding of the safety and environmental issues of working with marine litter and DFG. Only qualified divers with appropriate experience and training should attempt marine litter and DFG retrieval.

In this sense, and for marine litter removal practices in protected areas, operations using specific fishing gear and divers should be licensed. Therefore relevant permits should be requested to the competent authority (managing body of the protected area). In these cases, due to the sensitivity of these areas environmental impact assessment of the removal practice should be developed.

There are many environmental benefits of retrieval actions of marine litter, these benefits increase when developing in sensitive areas where protection and conservation of marine biodiversity are priority but the precautionary principle should be applied.

Last, regarding too passive FfL practices, marine litter removal initiatives undertaken by fishermen during their normal fishing activity can be considered. Fishing vessels are given free bags to collect any marine litter they catch in their nets during fishing operations and are provided with free disposal facilities in harbour. Operational or galley waste generated on board, and hence the responsibility of the vessel, continues to go through the established harbour waste management system.

All types of marine litter are targeted depending on the gear type used. Most amounts are from seafloor litter collected with bottom-contacting gear. Full bags are deposited on the quayside where the participating harbours monitor the waste before moving the bag to a dedicated skip for disposal. Normally, litter is weighed and, where possible, composition recorded, providing data that may be useful in subsequent policy development and management. Participation of fishermen is voluntary and without financial compensation but they should be motivated with indirect benefits to achieve their engagement.

This practise reduces the volume of debris washing up on our beaches and also reduces the amount of time fishermen spend untangling their nets. Therefore FfL is one of the most innovative and successful concepts to tackle marine litter at sea based on cooperation with fisheries associations.

This last type of practices, i.e. passive FfL practices, will be those considered in this guide and therefore their aspects related will be described accordingly.

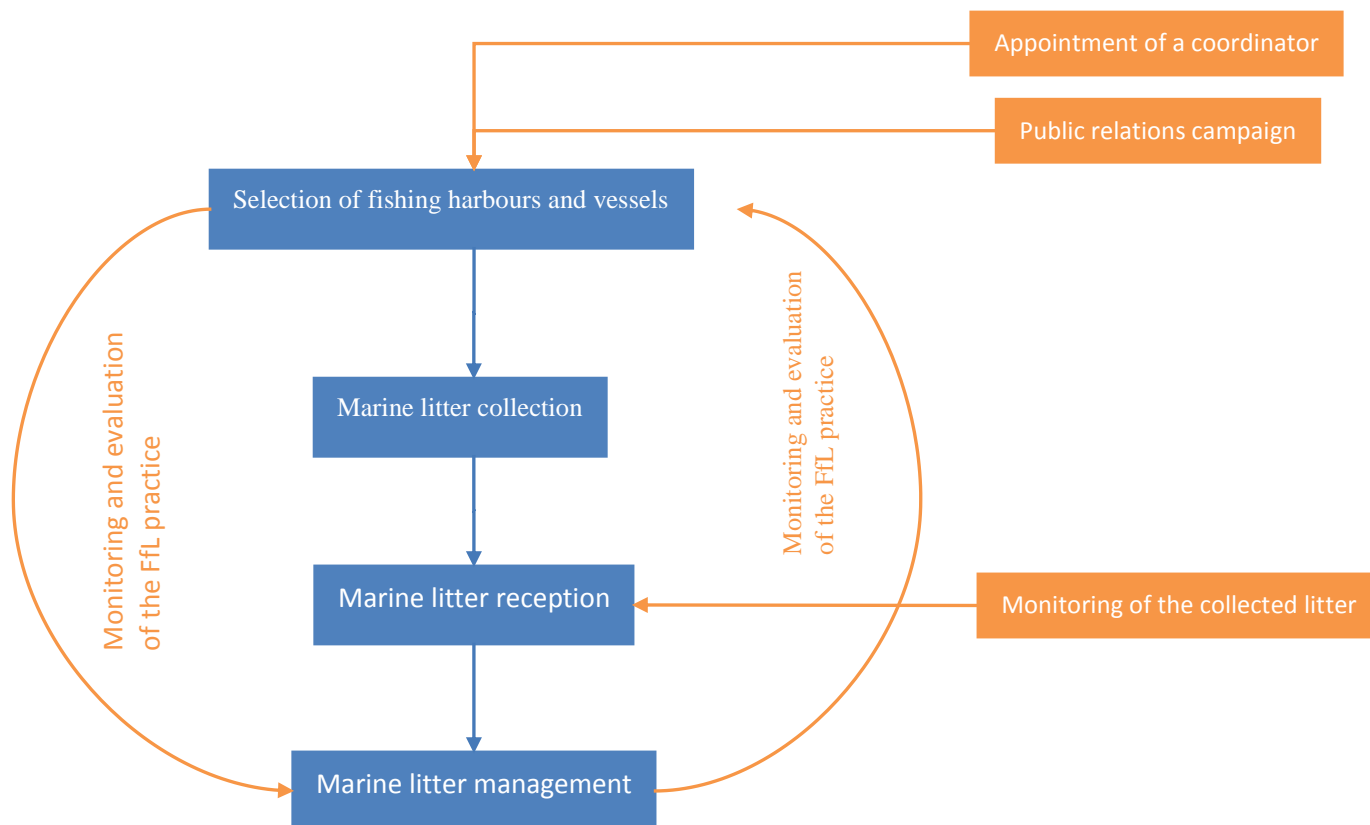
2. Objective

The objective of this guide is two-fold: to provide technical guidance on the mechanism to remove litter from the sea in an environmentally friendly manner ensuring negative impacts on marine environment and ecosystems are avoided, and to provide guidance on the process of involving the stakeholders responsible for the implementation and coordination of FfL practices. As stated above, the FfL practices considered within this guide are the passive FfL ones.

These practices are expected to be implemented in local areas at small-medium scale due to the specific characteristics of the Mediterranean trawling fishing fleet. FfL practices are described in areas where fishermen are able and allowed to fish.

3. Implementing a Fishing for Litter practice step by step

The steps of a FfL practice are presented in the following scheme (blue colour) and are elaborated in the chapters that follow. Where possible to implement, additional steps are also provided (orange colour).



3.1. Selection of fishing harbours and vessels

For the selection of fishing harbours and vessels that will participate in the FfL practice it is recommended to contact with fishermen's associations (both national and local) to explore the possibilities of collaboration. It is also recommended to contact with ports and harbours authorities because the point to collect waste will be located in the harbour area and other harbour facilities could be used for the purposes of the FfL practice. To complete the establishment of contacts with relevant stakeholders it is recommended to contact with waste management authorities and companies for the involvement of these sectors into the FfL practice.

3.2. Marine litter collection

For marine litter collection, bags solid enough will be needed. The size of bags used will depend on the vessel size to ensure enough free space on board during fishing activities. Typical bags, called big bags, used for FfL practices measure L90 x W90 x H90 cm and have a weight capacity of 200 kilogrammes, and a volume of 100 litres. The bags are usually made of polypropylene, for greater strength, and can be reused several times.

The following guidelines to collect marine litter should be followed by the fishermen to ensure the smooth running of the FfL practice:

- Marine litter should only be collected in the bags.
- Only marine litter caught in your nets should be collected in the bags. Ordinary galley and operational waste should still be disposed of through existing procedures.
- Garbage including plastics, domestic wastes, cooking oil, operational wastes and fishing gear should never be thrown overboard in the Mediterranean.
- Objects of natural origin (e.g., submerged and drifting shrubs, trees, their branches, etc.) which could be entrapped by fishing gear can be subsequently discharged back to the sea.
- Drums of fluids, chemicals or oil and hazardous items such as batteries are considered special waste under waste regulations and should be dealt with through the harbours existing special waste procedures.
- No items of marine litter should be brought onto or retained on board the vessel if the master, in his opinion, considers that doing so would have an adverse effect on the stability and seaworthiness of the vessel.
- Number of bags and approximate weight of marine litter collected in every fishing trip should be recorded.

3.3. Marine litter reception

The bags of marine litter should be unloaded and placed safely on the quayside in order to no marine litter losses occur and no marine litter may return to the sea. The bags will then be taken to the existing waste reception facilities in the harbour. Permanent and large containers that are emptied on regular basis and made available at the shortest possible distance from fishing boats will facilitate handling of both wastes and bags. Either fishermen will take the bags to reception facilities themselves or staff from the harbour authority or waste management company will take the bags to the reception facilities.

To ensure the smooth running of the FfL practice appropriate waste reception facilities in the harbour should be available. Marine litter will be disposed in closed containers with lids, large enough to receive the amounts and sizes of items removed.

Who takes the bags to the waste reception facilities will depend on what is agreed with the harbour authority during the FfL practice and the normal arrangements for handling waste from vessels in the port. It is recommended that the arrangements for handling marine litter are the same as the normal arrangements for handling the fishing vessels' own waste.

3.4. Marine litter management

Once ashore, marine litter removed has to be properly managed in order to not return to the sea. In this sense, in addition to appropriate waste reception facilities, appropriate waste treatment facilities should be available.

Waste management should ensure that waste is segregated and recycled conveniently prioritising the recovery (both material and energetic) from the deposit. Thus, ideally the management system should apply the following waste hierarchy as a priority order: recycling, energy recovery and disposal.

If the final destination of the waste is landfilling, waste disposal will take place in a controlled facility.

As indicated above, the management system of marine litter collected could be integrated in the harbour existing waste management system, could establish an independent management system based on collecting it by an authorised waste manager that ensures its subsequent separation and recovery or could consist of a combined system of the two previous options. Agreements between waste management authorities and private sector could be made to put into the market segregated materials.

3.5. Additional steps

When possible, depending on available resources for the FfL practice the following steps could be implemented.

3.5.1. Appointment of a coordinator

FfL practice coordinator at national or regional level might be appointed. The coordinator might be in charge of these tasks:

- Searching for resources;
- Involving fishing harbours and vessels: contact with fishermen's associations, ports and harbours authorities, waste management authorities and companies;
- Developing of the public relations campaign;
- Reporting monitoring data.

From the experiences, the FfL practice coordinator could belong to a scientific or academic institution, NGO or a local authority as appropriate.

3.5.2. Public relations campaign and other incentives

A public relations campaign might be developed with the aims to encourage fishing industry to participate in the FfL practice and to inform general public about the FfL practice. The success of this kind of practices is the high engagement and involvement of fishermen and a good public perception could strengthen the fishermen support to the FfL practice.

Specific objectives of the campaign are outlined below:

- Raise awareness of the FfL practice within the fishing industry;
- Highlight the role of the funding bodies;
- Demonstrate good practice within the fishing industry to the general public;
- Change attitudes and behaviour within the fishing industry;
- Influence policy makers.

The main aspects public relations campaign should cover are summarised below.

3.5.2.1. Key messages of the campaign

Three are the key messages that the campaign needs to disseminate during the FfL practice:

- Marine litter is a problem that can be solved if everyone takes responsibility for their actions.
- Marine litter damages fishermen's livelihood (decrease of catches because fish can get caught in litter, time span spent cleaning nets) as well as the environment and it is in everyone's interest to solve the problem.
- Marine litter is a resource², not a waste.

3.5.2.2. Practical objectives of the campaign

Practical objectives of the campaign are listed below:

- Develop corporate image for the FfL practice (logo, colours, etc.);

² The increasing scarcity of resources and rising commodity prices is encouraging producers to find new ways to recover used products and to turn waste into a resource. Many end-of-life products, including plastics and packaging are increasingly being seen as sources of valuable secondary materials which are lost forever if disposed of.

- Develop A4 information leaflet on the FfL practice aimed at fishermen³;
- Develop identification flags of the FfL practice for participating vessels;
- Develop specific equipment for participating fishermen;
- Develop display material for exhibitions;
- Official launch of the FfL practice;
- Develop Fishing for Litter content on a website;
- Press launch of first new harbour in the FfL practice;
- Coverage of the FfL practice on a rural affairs television programme;
- Press launch for final harbour in the FfL practice;
- Publication of the report on the analysis of the monitoring programme.

3.5.2.3. Media contacts

Local agencies should have extensive contacts with the Trade Media and National Press. These should be utilised throughout the FfL practice to gain the maximum amount of coverage.

3.5.2.4. Crisis management

The risk of bad publicity from a FfL practice is very low however there are some situations that could impact adversely on the press coverage. For example, if a participating vessel is caught disposing of marine litter at sea. In such a situation the FfL practice coordinator should immediately release a press release condemning the action and reaffirming their commitment to eradication of such behaviour. It should also state their intention to enter into a dialogue with the vessel and master to ensure there was not a repeat incident. However as a last result if there was no cooperation the vessel in question should be removed from the FfL practice.

Another possible scenario is that one of the vessels involved in the scheme is caught fishing illegally. In this situation the coordinator would not comment unless directly approached by the press and then only to state that they are only involved in waste management issues and fisheries management is outside their remit.

3.5.2.5. Other incentives to promote fishermen engagement

The following incentives may be taken into account to promote fishermen engagement in the FfL practice:

- increasing self-esteem by agreements with food banks to donate a part of the catches;
- giving them visibility in communication media and to the Authorities;
- encouraging them to constitute companies for fish commercialisation and sub-products elaboration, providing them with contacts with commerce;
- studying engineering solutions to save fuel (such as hybrid engines).

3.5.3. Monitoring of the collected litter

The monitoring might be implemented to ensure adequate collection, sorting, recycling and/or environmentally sound disposal of the fished litter.

For monitoring marine litter brought ashore as part of the FfL practice a marine litter collected form might be filled in. With regards to seafloor litter, this form is based on the Master List of main categories of Litter Items as agreed in the UNEP/MAP Integrated Monitoring and Assessment Programme. The number of items will be recorded according to the categories defined (Plastic/Polystyrene, Rubber, Cloth/Textile, etc.) as well as the total weight of marine litter caught (see Table 1 in Annex 1).

However, this Master List may be adjusted and shortened for the purpose of the implementation of the Guide on FfL based on the most frequent items found in the course of implementation.

³ Threats and impacts of marine litter should be highlighted on the leaflets developed.

The tasks of recording composition and weight of waste brought ashore might be developed daily on the quayside by qualified personnel and monthly data might be reported to the FfL practice coordinator accordingly. The staff responsible for the characterisation of marine litter (composition and weight) should ensure that no items are lost during this process. Composition is recorded in order to identify sources of marine litter and the weight to ensure the final waste management.

Annually, monthly tons and composition of marine litter collected in each of participating harbours as well data related to harbour details (number of participating vessels, main vessel type) might be reported to the National Competent Authority for the protection of the marine environment (see Tables 2 and 3 in Annex 1).

3.5.4. Monitoring and evaluation of the Fishing for Litter practice

Data collected (number of vessels and harbours participating, amounts and composition of litter collected, etc.) might be periodically reviewed by the competent authority to evaluate the success of FfL initiatives, and might look at such factors as costs, benefits and governance. It may also enable to locate accumulation areas and support an optimised strategy to further focus on hot spots

Regular FfL practice monitoring and evaluation might help to assess the impacts of the practice and to identify lessons that can be used to improve future initiatives. It might also help to prove to any organisations providing funding or other support that the practice is on track to achieve what it plans to achieve.

4. Health and safety implications

The experience of FfL projects in the North Sea developing since 2000 indicates that there have been no instances of accidents or injuries directly related to the collection, storage or transfer to shore of marine litter collected as part of these projects.

The UK Maritime and Coastguard Agency (MCA) undertook a Feasibility Study for the Conduct of a Pilot Project for Offshore Marine Debris Analysis, Project 496 (Day) that identified some of health and safety implications. The study suggested that the health and safety aspects of implementing these types of initiatives would be the same as normal fishing activities (operations) and therefore there would likely not be any additional implications.

The stability and seaworthiness of the vessel may be affected by the items of marine litter brought onto or retained on board. Thus, no object of marine litter will be collected if there is suspicion of hazard, adverse effect or risk jeopardizing the stability of the vessel. The master and crew of the vessel have the responsibility for effective operational risk assessment. It is recommended to consider elements provided in Annex 3 for health and safety risk assessment.

Fishermen should maintain litter on board in a manner that should avoid any possible fish cross pollution from marine litter.

5. Environmental impact assessment including transboundary impacts

FfL passive practices are carried alongside normal fishing operations therefore there are no, in principle, potential adverse effects on the marine environment. However, the MLRP highlights the need to consider EIA and environmental impacts of implementing FfL and draws the attention that the best environmental practices and techniques should be used for this purpose due to the fact that such interventions may also have a very negative impact on marine environment and ecosystems in particular regarding the FfL active practices.

The main potential environmental impacts of FfL practices may be related to the harm to the seafloor and the associated benthic communities, In addition, pollution with marine litter will happen in case of exceed the capacity of the harbour waste reception and storage facilities together with human health and safety risks. Best practices established in this guide could be considered as mitigation measures of potential negative impacts of FfL practices on marine environment.

[An environmental impact assessment for active FfL practices should be considered taking into account the aspects listed below:

1. Characteristics of the FfL practice: (a) the size and design of the whole FfL practice; (b) cumulative effects with other existing and/or approved FfL practices; (c) the use of natural resources, in particular land, soil, water and biodiversity; (d) the production of waste; (e) pollution and nuisances; (f) the risk of major accidents and/or disasters which are relevant to the FfL practice concerned, including those caused by climate change, in accordance with scientific knowledge; (g) the risks to human health.
2. Location of the FfL practice: environmental sensitivity of geographical areas affected by the FfL practice with particular regard to marine protected areas.

The transboundary nature of the potential impacts.]

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Appendix 1⁴

Monitoring Forms

⁴This Annex is prepared for indicative purposes. Its final version will be based on the agreed list under the Integrated Monitoring and Assessment Programme of UNEP/MAP.

Table 1. Marine litter collected form.

Harbour	
Vessel	
Date	
Number of bags	
Total weight (Kg)	
Observations	

ID	PLASTIC/POLYSTYRENE	Total No.
G2	Bags	
G6	Bottles	
G10	Food containers incl. fast food containers	
G18	Crates and containers / baskets	
G20	Plastic caps and lids	
G27	Cigarette butts and filters	
G39	Gloves	
G48	Synthetic rope	
G51	Fishing net	
G55	Fishing line (entangled)	
G59	Fishing line/monofilament (angling)	
G61	Other fishing related	
G66	Strapping bands	
G67	Sheets, industrial packaging, plastic sheeting	
G93	Cable ties	
G124	Other plastic/polystyrene items (identifiable)	
ID	RUBBER	Total No.
G125	Balloons and balloon sticks	
G127	Rubber boots	
G128	Tyres and belts	
G132	Bobbins (fishing)	
G134	Other rubber pieces	
ID	CLOTH/TEXTILE	Total No.
G136	Shoes	
G137	Clothing / rags (clothing, hats, towels)	

G141	Carpet & Furnishing	
G142	Rope, string and nets	
G145	Other textiles (incl. rags)	
ID	PAPER/CARDBOARD	Total No.
G146	Paper/Cardboard	
G148	Cardboard (boxes & fragments)	
G158	Other paper items	
ID	PROCESSED/WORKED WOOD	Total No.
G160	Pallets	
G170	Wood (processed)	
G173	Other (specify)	
ID	METAL	Total No.
G175	Cans (beverage)	
G176	Cans (food)	
G180	Appliances (refrigerators, washers, etc.)	
G182	Fishing related (weights, sinkers, lures, hooks)	
G185	Middle size containers	
G187	Drums, e.g. oil	
G193	Car parts / batteries	
G194	Cables	
G196	Large metallic objects	
G197	Other (metal)	
ID	GLASS/CERAMICS	Total No.
G200	Bottles incl. pieces	
G201	Jars incl. pieces	
G208	Glass or ceramic fragments >2.5cm	
G209	Large glass objects (specify)	
G210	Other glass items	
ID	SANITARY WASTE	Total No.
G95	Cotton bud sticks	
G96	Sanitary towels/panty liners/backing strips	
G98	Diapers/nappies	
G133	Condoms (incl. packaging)	
ID	MEDICAL WASTE	Total No.
G99	Syringes/needles	
TOTAL		

Appendix 2
Summary of the FfL Projects

PRACTICE / PROJECT	IMPLEMENTING ORGANISATION	SCOPE	PERIOD	LITTER REMOVED	ACTIVITIES UNDERTAKEN	ADDED VALUE
Ecological bags on board	Villajoyosa fishermen's association	Alicante Coast (E Spain)	2012-	Seabed and floating	<ul style="list-style-type: none"> 1 harbour, 38 boats (30 trawls, 8 trammels) 	<ul style="list-style-type: none"> Fishermen initiative
Ecopuertos	RELEC Chair (University of Cadiz, Spain)	Andalusian Coast (port of Motril, Granada)	August 2013-December 2014	Seabed	<ul style="list-style-type: none"> Until 30th September 2014: 41701 items of seabed litter collected and 17603 kg of fish donated On average 5 vessels participating each month (trawling fishing vessels) 	<ul style="list-style-type: none"> Integrated waste management system Fishing discards of the participating fleet provide food to charity canteens through Granada Food Bank Foundation The project finalised at the beginning of December 2014 but the continuity of this initiative is assured thanks to funding from the port of Motril
DeFishGear	Lead partner: National Institute of Chemistry (Slovenia) Project countries: Slovenia, Italy, Greece, Croatia, Bosnia and Herzegovina, Montenegro and Albania	Adriatic Sea	Beginning of 2014-ongoing	Seabed and fishing gears	<ul style="list-style-type: none"> Fishing for litter pilot actions started in October and will last from 6 to a maximum of 12 months 	<ul style="list-style-type: none"> Implementation of a Derelict Fishing Gear Management System in the Adriatic Region – DeFishGear Recovering and reuse fishing nets
Port of San Remo	Lead partner: OLPA (The Ligurian Observatory on Fishery and Environment) Partners: Liguria region; ARPA Liguria; Municipality of San Remo; fishery cooperatives (LegaPesca, Federco pesca, AGCI Pesca), port authority of San Remo; FLAG (Fisheries Local Action Group) 'Il mare delle alpi'; waste management companies (AIMERI SpA); Accordo Pelagos and RAMOGE; tourism industry (Consorzio Mediterraneo; Costa Crociere Foundation); ARPA Toscana; University of Genova; Institut Ruder Bošković	Ligurian Coast (Port of San Remo, Italy)	2015-	Seabed	<ul style="list-style-type: none"> 11 trawlers of San Remo are involved 	<ul style="list-style-type: none"> The objectives of the project are: improve the marine environment and in particular the environmental status of the sea bottom by reducing marine litter; promote behavioural change among stakeholders and raise awareness on marine litter issues; provide evidence on marine litter hot-spots in Liguria
Port of	Lead partner: Center for Marine Research of	Northern	2015-	Seabed	<ul style="list-style-type: none"> 20-25 vessels are 	<ul style="list-style-type: none"> The objectives of the project are:

PRACTICE / PROJECT	IMPLEMENTING ORGANISATION	SCOPE	PERIOD	LITTER REMOVED	ACTIVITIES UNDERTAKEN	ADDED VALUE
Rovinj	the Ruđer Bošković Institute Partners: fishermen of Rovinj; Port authority of Rovinj; Komunalni servis d.o.o (municipal waste management company); NGO Zelena Istra (Green Istria); Chamber of Commerce of Istria; Municipality of Rovinj	Adriatic Sea, Istrian Coast (Port of Rovinj, Croatia)			involved in the first stage of the project	Remove marine litter and contribute to the implementation of the Marine Strategy Framework Directive in Croatia and to achieving good environmental status; Collect data on marine litter in the Northern Adriatic Sea; Raise awareness on the problem of marine litter

Appendix 3
Elements for the Health and Safety Risk Assessment

Hazards

Hazard no:	
1	Working on fishing boat (MOD, collision, fire and flood)
2	Working with fishing gear on dock (ropes, wires, trawls and winch gear)
3	Ladders on quayside (ladders on vessel)
4	Landing debris (using landing derricks)
5	The fish quay (slippery surfaces, mooring ropes, blocks and bollards)
6	Handling debris (cutting hands on sharp objects)
7	Emptying skips (injury if craned from pontoon)

Persons affected Crew and Project Staff

Hazard no:	Hazard severity	Likelihood of occurrence	Risk factor
1	High / mod risk	Low likelihood	Severe
2	High / mod risk	Low likelihood	Severe
3	Low risk	Low likelihood	Medium
4	Low risk	Low likelihood	Medium
5	Moderate risk	Low likelihood	Minor
6	Moderate / low risk	Likely	Medium
7	Low risk	Unlikely	Medium

Likelihood / Consequence	Severe	Major	Medium	Minor
High likelihood	Very high risk	High risk	Moderate risk	Moderate risk
Likely	High risk	Moderate risk	Moderate / low risk	Low risk
Low likelihood	High / mod risk	Mod / low risk	Low risk	Negligible Risk
Unlikely	Moderate/low risk	Low risk	Negligible Risk	Negligible Risk

To assess the risk arising from the hazard:

1. Select the expression for likelihood which most applies to the hazard
2. Select the expression for degree of harm which most applies to the hazard
3. Cross reference using the above table to determine the level of risk

Existing Control Measures Re-assessed		
Hazard	Control Measures	Risk Factor
1	Vessel survey, trainee staff, good safety equipment	Medium
2	Vessel survey, trainee staff, good safety equipment	Medium
3	Survey the quay	Minor
4	Vessel survey, staff familiar with equipment	Minor
5	Survey the quay	Minor
6	Issue of safety equipment (gloves, boots, hard hat)	Minor
7	Staff to be familiar with craning procedures	Minor

Appendix 4
Costs of Fishing for Litter Projects

Summary

The overall costs of implementing Fishing for Litter schemes (passive approach) vary significantly from one project/ country to another, depending on the way they are organized, elements built in the schemes, their size (in terms of number of vessels and ports involved) and specific costs of staff time and waste disposal. The key cost elements are treatment and disposal of collected litter, staff time needed to manage/ coordinate the project, and the costs of ‘infrastructure’ – bags and containers used to collect and store litter on board the vessels and in the ports.

Experience with 10 projects implemented in different regional seas in the period 2000 - 2015 shows that mid-scale costs per ton of collected litter are in the range of 800 to 5,200 euros⁵. Among the 10 projects there are also those where the cost per ton of collected litter is as low as 350 euros⁶ and those where the costs range from 15,500 to 20,000 euros⁷ (the latter having waste separation and recycling as constituent parts of the schemes and incineration with energy recovery as the final disposal option). Annual costs per participating vessel range from around 300 to 3,500 euros. Project management inputs (in relation to the number of participating vessels) ranged from 19 to 207 vessels per one full-time manager (depending on what specific tasks are included in the manager’s job description).

Given the large variation in the available data on costs of already implemented projects, these figures should only be used as indicative. A sound approach in implementing the Guide i.e. in designing a new Fishing for Litter scheme would be to do rough project-specific cost estimation considering primarily the price of waste removal and treatment (for preferred/ possible options) per ton of marine litter targeted for collection under the scheme. Staff time for project management and costs of necessary bags and possibly containers/ port infrastructure (if non-existent) should be also included.

Full information

Even though there is a growing experience with implementing Fishing for Litter (FfL) schemes, information on how much does it cost to implement such an intervention is not widely available and/ or readily comparable from one project to another (or from one country to another). The total costs largely depend on the following:

- 1) Scope of the scheme (How many vessel/ fishermen are participating? How many ports are included?);
- 2) How are the costs of treatment and final disposal of collected litter covered (E.g. Does the FIF project pay to waste companies for this service or is it provided as a contribution of participating entities – local governments, port authorities or others?);
- 3) State of port infrastructure (Are containers to receive litter from participating vessels available and accessible at times suitable for fishermen free of charge?); and
- 4) Staff time needed to prepare and implement the project.

The main benefits associated with fishing for litter schemes include reduction in marine litter and associated negative environmental impacts, and positive publicity for fishermen. In addition to removal of the litter, FIF projects often have awareness raising and monitoring components/ functions which generate additional benefits. According to an assessment of the OSPAR Commission, ‘*financial costs of running the scheme are not onerous compared to benefits it brings*’.

General steps in preparing and implementing the scheme that entail certain costs are listed below:

⁵Data from the assessment of different Fishing for Litter schemes prepared under the MARELITT project (assessment report titled *Pilot project: removal of marine litter from Europe’s four regional seas*, prepared by Milieu Ltd in 2013) and individual project web sites (in cases where information on costs was available).

⁶E.g. the Dutch Vuilvis project where a private waste management company provides removal and treatment services as an in kind contribution to the project.

⁷ German NABU (Nature and Biodiversity Conservation Union) and Baltic KIMO (Local Authorities International Environment Organisation - an association of local authorities in coastal areas) respectively.

Preparation		Implementation	
<i>Activity</i>	<i>Costs</i>	<i>Activity</i>	<i>Costs</i>
Develop public relations/ awareness raising strategy	Staff time, consultations	Day-to-day management	Staff time
Develop management plan	Staff time, consultations	Provision of receptacles (bags) to fishermen	Purchase and distribution of bags
Develop public relations materials	Staff time, publications	Storing the bags in designated areas/ containers in ports	Provision of port infrastructure, handling of waste
Organise PR events to launch the scheme	Staff time, events, media time	Transport and treatment/ final disposal of collected litter	Transport, separation (if any), recycling and final disposal of waste
Develop guidelines for fishermen	Staff time, publications	Marine litter monitoring	Staff time
		Continuous awareness raising activities	Staff time, publications, media time

Principal cost elements of FLF scheme therefore include:

1. Preparation costs (strategy, plan, organisation of events, publications);
2. Project management costs;
3. Cost of bags distributed to fishermen to transport collected litter;
4. Costs of providing adequate port infrastructure (if not available);
5. Waste management costs; and
6. Project management cost.

The experience from a growing number of projects implemented during the past 10 – 15 years show that day-to-day management of the scheme is crucial for its success, which implies the necessity to employ a project manager/ coordinator on a full- or part-time basis, depending on the number of participating vessels and specific tasks to be addressed (e.g. delivery of bags, instructions to fishermen, monitoring, awareness raising, etc.).

Waste management costs are expected to represent the most substantial item in the budget of any FIF project. In addition to the quantity of collected litter, they will directly depend on whether there will be attempts to separate (for recycling) certain types of wastes and what final disposal option will be selected (e.g. landfilling or incineration with/ without energy recovery). The waste management arrangements can also affect project budget significantly, as the removal and disposal costs may be covered by local governments, port authorities and/ or waste management companies. If for example waste management companies directly cover waste removal and disposal costs (possibly as an in-kind contribution to the project) or if they charge the project at preferential rates, the amount of money that needs to be raised to implement the scheme can be reduced.

There is a wide range of experiences as to who bears the costs of FIF projects. Port authorities, national governments (in particular marine management/ protection authorities), local and regional authorities, are the most frequent funders. Furthermore, cost of FIF schemes are often covered through various partnerships and projects involving waste disposal companies, private sector as well as NGOs

and specialised public funds (e.g. fishery development fund). Experience shows that regional and/ or national schemes tend to be more effective and receive more publicity compared to the local ones.

Information on specific costs of already implemented projects is limited and the most comprehensive data and analysis can be found in the report prepared under the MARELITT project⁸. All together 14 projects were assessed (3 of them implemented in the Mediterranean Sea) for the purpose of this MARELITT report. Out of the 14 projects, two entailed direct payments to fishermen and as such, they were not analyzed for the purpose of the MED POL Guide on FIF and are not included in the overview table (table 1 below) presenting the key cost-related elements and data for the projects assessed in the MARELITT report.

⁸*Pilot project: removal of marine litter from Europe's four regional seas*, Milieu Ltd, 2013. The report presents a comparative analysis of the existing marine litter removal projects and was submitted to the European Commission as an annex to the MARELITT Progress Report of December 2013.

ANNEX II
Marine Litter Baselines Values

Common Indicator (CI)	minimum value	maximum value	mean value	Proposed baseline
16. Beaches (items/100 m) (CI 16)	11	3600	920	450-1400
17. Floating litter (items/km ²) (CI 17)	0	195	3.9	3-5
17. Sea floor (items/km ²) (CI 17)	0	7700	179	130-230
17. Micro-plastics (items/km ²) (CI 17)	0	892000	115000	80000-130000
18. Sea Turtles Affected turtles (%) Ingested litter(g) (CI 18)	14% 0	92.5% 14	45.9% 1.37	40-60% 1-3

It must be noted that the amount of existing information is limited to set definitive baselines that may be adjusted once the national monitoring programs could provide additional data. Moreover, Average values over large areas are difficult to harmonize, in particular for beach litter. Then, the setting or derivation of baselines should take the local conditions into account and may follow a more localized approach. Finally, additional specific baselines may be decided by the Contracting Parties on specific litter categories especially when they may represent an important part of litter found or a specific interest (targeted measures, etc.).

ANNEX III
Marine Litter Environmental Targets

EcAp Indicators	Type of Target	Minimum	Maximum	Reduction Targets	Remarks
Beaches (Common Indicator 16)	% decrease	significant	30	20% by 2024 [2030]	not 100% marine pollution
Floating Litter (Common Indicator 17)	% decrease	-	-	Statistically Significant	sources are difficult to control (trans border movements)
Sea Floor Litter (Common Indicator 17)	% decrease	stable	10% in 5 years	Statistically Significant	15% in 15 years is possible
Microplastics (Common Indicator 17)	% decrease	-	-	Statistically Significant	sources are difficult to control (trans border movements)
Ingested Litter (Common Indicator 18)					Movements of litter and Animals to be considered
Number of turtles with ingested litter (%)	% decrease in the rate of affected animals	-	-	Statistically Significant	
Amount of ingested litter	% decrease in quantity of ingested weight(g)	-	-	Statistically Significant	

Draft Decision IG.22/11

**Mid-term Evaluation of the Action Plan for the Implementation
of the ICZM Protocol for the Mediterranean (2012-2019)**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as the Barcelona Convention,

Recalling the ICZM Protocol adopted by the Conference of Plenipotentiaries on the Protocol for Integrated Coastal Zone Management in the Mediterranean (Madrid, Spain, January 2008) and entered into force in March 2011;

Recalling also the Decision IG.20/2 of COP 17 (Paris, France, February 2012) adopting the Action Plan for the Implementation of the ICZM Protocol for the Mediterranean (2012-2019), herein after referred to as Action Plan, which envisages that a Mid-term Evaluation of the progress in its implementation will be done to coincide with the end of the UNEP/MAP Five Year Programme of Work for 2010-2015;

Considering the findings of the Assessment of CAMP Projects carried out following the recommendation made by the MAP National Focal Points at their meeting in 2011 with the view to better understand the contribution of these projects to the implementation of ICZM in practice and to complement the Mid-term Evaluation of the Action Plan;

Noting with satisfaction the achievements and good progress made so far in the implementation of the Action Plan;

Takes note of the report on the Mid-term Evaluation of the Action Plan for the implementation of the ICZM Protocol for the Mediterranean (2012-2019) as contained in the Annex to this Decision;

Urges the Contracting Parties that have not yet done so, to ratify the ICZM Protocol as early as possible with the view to ensuring its entry into force for the entire Mediterranean Region within the Action Plan timeframe;

Invites the Contracting Parties to prepare national strategies for ICZM in order to scale up ICZM as the strategic option for sustainable development of their coastal zones and to reach the objective of having national strategies for ICZM adopted by all countries within the Action Plan time frame;

Requests the Coordinating Unit and PAP/RAC to develop a new cycle of CAMP projects that will take into account the recommendations of the report on the Assessment of CAMP Projects, especially with regard to embedding the projects into national policy frameworks, extending them to the marine part of the coastal zone, and making of them a privileged space of integration of all UNEP/MAP components work;

Invites the Coordinating Unit, PAP/RAC and all the other UNEP/MAP components to closely cooperate in order to ensure consideration of land-sea interactions and integration of terrestrial and marine planning and management in respect of the ecosystem integrity and with the aim to contribute to the implementation of the ICZM Protocol and its Action Plan and to reaching the EcAp-based Ecological Objectives of UNEP/MAP;

Calls upon the Coordinating Unit and PAP/RAC to strengthen the governance mechanisms for ICZM by establishing an official network of CAMP and CAMP-like projects to facilitate exchange of experience and good practices, cross-border cooperation and mutual assistance in implementing ICZM according to the principles and objectives enounced in the ICZM Protocol.

ANNEX

**Mid-term Evaluation of the Action Plan for the Implementation of the ICZM Protocol for the
Mediterranean (2012-2019)**

Mid-term Evaluation of the Action Plan for the Implementation of the ICZM Protocol for the Mediterranean (2012-2019)

Introduction

An important milestone for the implementation of the Integrated Coastal Zone Management (ICZM) in the Mediterranean Basin was the adoption, by COP17 (Paris, 2012), of the Action Plan for the implementation of the ICZM Protocol in 2012-2019. By adopting this Action Plan, the Contracting Parties (CPs) have decided to focus on three major objectives further articulated into a series of actions, entrusting PAP/RAC and UNEP/MAP to support them in their implementation, namely:

- **Objective 1:** Support the effective implementation of the ICZM Protocol at regional, national and local levels including through a Common Regional Framework for ICZM;
- **Objective 2:** Strengthen the capacities of CPs to implement the Protocol and use in an effective manner ICZM policies, instruments, tools and processes;
- **Objective 3:** Promote the ICZM Protocol and its implementation within the Region, and promote it globally by developing synergies with relevant Conventions and Agreements.

Besides the regular reporting on its implementation, the Action Plan envisages that a mid-term review and evaluation will be done “to coincide with the end of the 5-year MAP programme in 2014”. Since, by the decision of COP18 (Istanbul, 2013), the 5-year MAP programme was extended for one year, the mid-term evaluation was also postponed to 2015, which coincides perfectly with the half of the period covered by the Action Plan.

The Action Plan does not prescribe by whom the mid-term evaluation is to be done. However, PAP/RAC as the UNEP/MAP component designated to support the co-ordination of the implementation of the ICZM Protocol, is the best placed for that task.

Given the fact that two important assessments have been conducted in 2015, i.e. the evaluation of the UNEP/MAP programme implemented during the last six years and the assessment of CAMP projects implemented since 2001, we considered that another external evaluation was not needed, especially that no specific budget was foreseen for it. Therefore, the Mid-term evaluation of the ICZM Action Plan is proposed here as an overview and evaluation prepared by PAP/RAC and coupled with the main findings of the above-mentioned audits, to be shared with PAP/RAC National Focal Points (NFPs) prior to the official submission to MAP NFPs meeting in October 2015 and COP19 in February 2016.

The main objective of this report is to summarise the accomplishments made in relation to the objectives and actions undertaken jointly by the CPs, PAP/RAC and other partners – be they a part of the UNEP/MAP system or external, in implementing ICZM in the Mediterranean Region. Alongside this reminder about the main achievements, major difficulties encountered in implementing the Action Plan will be pointed out, although these have not significantly affected the good progress made in this first half-period.

Overview of the main results

A short overview that follows is structured according to the three Objectives of the Action Plan. It follows the same structure as the Progress Report for 2012-2013 prepared by PAP/RAC and endorsed by the PAP/RAC and MAP NFPs at their meetings in 2013. The overview also grasps on and summarises the most important information contained in that Progress Report.

In order not to overburden the report with too many details, direct links are provided to all major documents produced and events organised. We kindly invite you to have a look at them and to contact PAP/RAC for any additional information you may need.

Objective 1: Support the effective implementation of the ICZM Protocol at regional, national and local levels including through a Common Regional Framework for ICZM

Action 1.1: Ratification and transposition

The main objective of this Action is to advance with the ratification of the ICZM Protocol with the objective to have it ratified by all the CPs within the period covered by the Action Plan. The responsibility for the ratification and transposition of the Protocol provisions into national legislation lies on the CPs, while the PAP/RAC is to provide assistance upon request.

The ICZM Protocol was one of the fastest to enter into force, in March 2011 after the required minimum of six ratifications. Today, the number of CPs having ratified the Protocol has grown to 10 and the process is on-going in several other CPs. It is to be noted that the ratification of the Protocol by the European Union made of it a part of the *acquis communautaire*, i.e. the legal obligation even for the Mediterranean EU member-states that have not yet accomplished the process of ratification.

Even though the ICZM Protocol has entered into force rather quickly after the signature of its text, the process of ratification requires detailed consultations with all sectors due to the complexity of the legal instrument itself. To assist the countries in this process PAP/RAC has undertaken, together with its partner – IDDRI, the French Institute for Sustainable Development and International Relations, several studies aiming to facilitate the understanding of the Protocol’s provisions, namely:

- A contribution to the interpretation of legal aspects of the Protocol on Integrated Coastal Zone Management in the Mediterranean, with a special chapter containing an analysis of the Protocol in face of the EU law (in [English](#) and [French](#));
- An analysis of the [Croatian legal framework](#) in relation to the provisions of the Mediterranean ICZM Protocol;
- Assessment of Impacts of the Ratification of the Mediterranean Protocol on ICZM on Croatian Legislation, with a [Focus on Article 8](#).

These studies were presented during the “Regional workshop on harmonising the national legal and institutional framework with the ICZM Protocol“, which was organised by PAP/RAC within Component 1 of the “[MedPartnership](#)” project in December 2012. The aim of the workshop was to assist countries in understanding the legal aspects of the ICZM Protocol; building capacities for the ratification of the Protocol and its transposition into the national laws; and identifying the stakeholders who could lead the implementation of the ICZM Protocol in the Mediterranean countries, or those who could obstruct it or make it more difficult.

As it has been stated by the participants, the ratification enables all interested stakeholders to use the ICZM Protocol as a tool to push for a sustainable coastal development. It has also been pointed out that the ratification is only one step on the long path towards sustainable coastal development for which the efficient implementation of the ICZM Protocol is a crucial challenge. The report of the workshop (in English) is available at [this link](#).

Another important initiative within this Action was implemented within the EU IPA Adriatic project SHAPE that, among others, explored the ICZM practices in the Adriatic countries and their regions. Three major documents were produced to support the implementation of the ICZM Protocol in the project region but can be (and have been) used by any other country undertaking this effort. These are:

- An analysis of the [ICZM practice](#) in the Adriatic countries/Italian regions;
- Explanatory report on [institutional co-ordination](#), according to Art. 7 to assist the project partners in drafting reports on the establishment or improvement of such co-ordination bodies;
- Explanatory report on the implementation of the [setback zone](#) according to Art. 8, including technical assistance to six pilot projects where setback zone was defined.

Action 1.2: Strengthening and supporting governance

Good governance is a fundamental part of what ICZM is trying to achieve – a proactive and adaptive management of coastal zones, which encourages all interested parties to work together on specific coastal issues. This means in practice that success depends on forging partnerships and linking local-scale initiatives to higher-level policies, i.e. achieving horizontal and vertical co-ordination. The activities under this Action have been carried out in parallel at three levels: the regional (Mediterranean), the national and the local, as described below.

Governance structures are being established in all ICZM implementation projects (such as CAMPs or the “MedPartnership” pilot projects, or the recently launched MSP pilot project) as they are the best guarantee that the most appropriate solutions will be adopted for the managed areas. These will be pointed out in the presentation of individual projects. The same will be done for the inter-ministerial committees established within the process of preparation of national ICZM strategies supported by the “MedPartnership” project in Algeria, Croatia and Montenegro.

In this chapter we shall focus on two large initiatives detected as a priority under this Action:

- the Governance Platform created within the EU FP7 project [PEGASO](#) for the Mediterranean and Black Sea regions (in which two MAP components have participated: PAP/RAC and Plan Bleu); and
- the Common Regional Framework for ICZM (under the revised MSSD¹).

The Governance Platform

The main objective of the PEGASO project being to bridge the gap between science and decision-making on coastal issues, the establishment of an interactive governance platform was considered as a crucial element to ensure a constructive, two-way dialogue between those who have to take decisions at different levels – from regional to national and local, and those who have to provide quality data and tools for that.

The PEGASO ICZM governance platform was made of some 250 people (including representatives of international organisations, national and local stakeholders from the Mediterranean and Black Sea regions) that worked together to put in place effective ICZM plans and programmes by exchanging, learning together, sharing knowledge, designing and testing new planning and management tools. To do so, these people had at their disposal a powerful technical infrastructure to use: the *Intranet*, which is a common work space with an active forum and document repository; a *Spatial Data Infrastructure (SDI)* that supports interactive information sharing and assure that spatial data are organised and presented in a standardised way, complying with INSPIRE directive; and a *web portal* allowing contact with the “external world” and dissemination of the project results to wider audience. This collaborative work has yielded several important products of relevance for the implementation of the ICZM Protocol, which will be detailed as appropriate in the paragraphs that follow (all available at the project web site).

Already during the PEGASO lifetime this governance platform has associated many external actors, such as PAP/RAC NFPs or other coastal and marine projects, who have enriched it and boosted the network of coastal practitioners, scientists and decision-makers. After the closure of the PEGASO project in 2014, the technical infrastructure of the platform has continued operating owing to the effort of some of the project partners, who have secured the additional EU funding for it.

The question is how to ensure that the platform becomes THE governance platform for the implementation of ICZM in the Mediterranean, a sort of a hub for all projects, studies and other

¹ <http://planbleu.org/en/activites/developpement-durable-et-smdd>

initiatives related to the ICZM Protocol implementation. The CAMPs network that has started to develop at the initiative of the recently launched CAMPs in Italy and France could benefit from this kind of experience and infrastructure.

The Common Regional Framework for ICZM (under revised MSSD)

Already in the actual version of the Mediterranean Strategy for Sustainable Development (MSSD) the coastal issues were given particular attention. The preparation and adoption of the ICZM Protocol is probably the only objective of the actual MSSD achieved at 100 per cent. Therefore, the MSSD 2.0 has been identified as the most appropriate document to give a regional strategic context to ICZM.

Following the COP18 decision, the process of revision of the MSSD has started in February 2014 under the Maltese presidency of the Mediterranean Commission for Sustainable Development (MCSD), with the technical assistance of UNEP/MAP and Plan Bleu. Several consultation meetings and on-line consultations on six priority themes, as well as a large conference of the MCSD members (Malta, February 2015), were organised in order to advance with the revision of the MSSD text.

PAP/RAC has participated in these consultations and provided inputs, always trying to present the ICZM as a cross-cutting approach and include its elements in all relevant thematic fields of the Strategy: (1) Sea and coasts; (2) Natural resources, rural development and food; (3) Climate; (4) Sustainable cities; (5) Transition towards a green economy; and (6) Governance.

The MSSD revision is a complex process involving many stakeholders who are not always at the same track. It implies a lot of exchanges, consultations and understanding of each others' positions. Therefore, there is still a need to push for ICZM to be presented in an adequate way, as a management approach that offers tools and methods that can lead to sustainable coastal development. We count on the CPs to push in that direction.

Action 1.3: Adopting National Strategies and Action Plans and Programmes

In the application of Art. 18 of the ICZM Protocol, this Action has fixed as a main objective to have national ICZM strategies adopted by all countries, with the support of PAP/RAC and other MAP components.

Benefiting from the funding offered by the "MedPartnership", PAP/RAC led the preparation of two national ICZM strategies (in Algeria and Montenegro) and two coastal plans (Réghaïa in Algeria and Buna/Bojana in Albania/Montenegro). The preparation of the third strategy, supported by the "MedPartnership" replication fund, has started in Croatia while the coastal plan for the Šibenik-Knin County focused on climate change is about to be finalised within the "ClimVar & ICZM" project.

Algerian ICZM Strategy and Coastal Plan for Réghaïa

The lessons learned from the CAMP Algeria(2001-2006) called for the development of a National ICZM Strategy in order to keep progressing on the way to sustainability of the Algerian coast. This process started in 2012, when a comprehensive diagnosis of the Algerian coast was prepared, an *Inter-ministerial* Committee formed and the diagnostic analysis validated. Once the validation was finished, it became clear that the good governance would be at the heart of the success of the process and that all stakeholders should be able to take part in debates. To that end, and taking into account that the Algerian coast is particularly wide, with 1,600 km of the coastline, it was decided to organise participatory workshops in the three coastal regions (East, Centre and West) during which the participants discussed the key ICZM themes, namely, the institutional functioning, participation, and support to scientific and technical data in the context of ICZM.

In the next stage, when a consensus on the key issues, especially the institutional and legal ones, was reached, a draft strategy was developed. By the end of 2014, the document with a focus on 10 major

strategic orientations was presented at the validation workshops in the three coastal areas. This participatory process in which, directly or indirectly, 1,400 people were involved, was concluded with the organization of a final Conference in Oran, in March 2015, when the Strategy was presented by the Algerian Minister of Land Planning and Environment. The Minister raised hopes that the strategy would allow reframing actions for sustainable coastal development, and improving the efficiency of institutional and legal provisions, as well as that the stakeholders would now be fully engaged in its implementation.

The same participatory principle with relevant stakeholders was applied for the preparation of the coastal plan for the Réghaïa area, which has served as a demonstration project illustrating the implementation of the strategy at a lower level. The plan was adopted on the same occasion as the strategy.

National ICZM Strategy for Montenegro

The process of preparation of the National ICZM Strategy was entirely integrated with the CAMP Montenegro activities (see Objective 2, Action 2.2) in order to enable synergies and avoid duplications.

Having in mind that this process was also carried out hand in hand with the process of preparation of the physical plan for the coastal area of Montenegro (Coastal Area Spatial Plan – CASP), its first half was entirely based on innovative studies and methodological approaches necessary for the ICZM Protocol implementation, to allow for the mainstreaming of ICZM principles into the spatial planning practice. This was a complex process, with a strong capacity building component intended for the national administration staff and the institutions involved in coastal and planning issues, as well as numerous working meetings with expert institutions, ministries, spatial planning institutions and individual experts.

One of the important elements examined throughout this process is the possibility of using the Steering Committee of the project as a model and transforming it in a permanent institutional structure for the coastal zone management. Based on this experience, the ICZM Strategy recommended the coastal management governance structure including two main levels: the political and the administrative one. The initial step towards that direction has already been achieved when the National Committee for the Sustainable Development and Climate Change has been extended into a National Committee for the Sustainable Development, ICZM and the Climate Change thus becoming an intra-governmental body for ICZM.

In addition to specific management and systemic spatial planning requirements, mainly related to the methodology and the process for the preparation of spatial plans (such as those related to the establishment of a coastal observatory, the access to information, public participation, the co-ordination and integration mechanisms, etc.), specific guidelines related to criteria for the sustainable land-use planning within the Coastal Area Spatial Plan were elaborated within the Strategy. The Guidelines were structured around four main principles for the land-use planning based on the ICZM Protocol requirements contained in the Article 6c (ecosystem approach) and the Article 8 (protection and sustainable use of the coastal zone).

The Strategy was presented at the final CAMP conference in Budva, in December 2014, prior to its submission for adoption by the Parliament of Montenegro.

Marine and Coastal Strategy in Croatia

In 2012, Croatia has launched the process of preparation of the Marine Strategy, as requested by the EU's Marine Strategy Framework Directive. Soon after, the country ratified the ICZM Protocol. Knowing that 80% of marine pollution comes from the land-based sources, the Croatian Government decided to integrate these two strategies and to continue with the preparation of a joint Marine and

Coastal Strategy for Croatia. In 2014, the inter-ministerial committee established for the Marine Strategy in 2012, has been extended to encompass a wide array of coastal stakeholders, so that today, it counts more than 40 representatives of different Ministries and Agencies dealing with the coast and sea.

Moreover, in 2015, the Croatian Government has been finalising two other important strategic documents: the Regional development strategy and the Spatial development strategy. One of the objectives of the PAP/RAC efforts is to create favourable conditions for the integration of these three strategies thus allowing the country to rationalise efforts, time and money and have well-harmonised documents for the future.

The key characteristic of the ICZM – its adaptability, will be crucial for this task. The integration of analytical findings, the harmonisation of the objectives, targets, indicators, and of the future monitoring process would surely result with the most sustainable strategies for the future. Marine and coastal strategy will propose the optimal institutional framework for marine and coastal management, but also the measures for the future sustainability of the Croatian sea and coast. The process of preparation is highly participatory, through the inter-ministerial committee at the national level and the participatory workshops to be held in all coastal counties. County workshops are to insure that the local needs and priorities, as well as knowledge and ideas are taken into consideration, but also to build ownership and to increase chances for a successful implementation of the strategy.

Coastal Plan for Buna/Bojana in Albania/Montenegro

The Buna/Bojana Transboundary Integrated Management Plan has been jointly prepared in the framework of the “MedPartnership” project by PAP/RAC, the Global Water Partnership - Mediterranean (GWP-Med) and the International Hydrological Programme (UNESCO-IHP), in co-operation with a team of experts from the two countries, under the guidance of the Albanian Ministry of Environment, Forestry and Water Management and the Montenegrin Ministry of Sustainable Development and Tourism.

The Buna/Bojana Transboundary Integrated Management Plan is the first pilot case testing the integrated implementation of the Water Framework Directive (WFD) and the ICZM Protocol. It aims to assist in identifying the key problems and issues in the area related to transboundary management of coastal and water resources including aquifers. It will also propose to the competent authorities of the countries ways of addressing these problems and issues.

It is to be noted that such a complex task has been located in an even more complex location, i.e. a transboundary area. Therefore, a number of difficulties were encountered since the beginning of the plan preparation. These were related in the first place to the significant difference in availability and type of data, insufficient local expertise, different legal systems, etc. In spite of all that, the Plan has been drafted and it is undergoing the consultation and harmonisation process with national administrations and key stakeholders. Hopefully, it will represent a bundle full of lessons learned, ready to be replicated in other areas in the Mediterranean.

Coastal Plan for the Šibenik-Knin County in Croatia

In the frame of the “MedPartnership” sister project on Climate Variability and Change (CVC) and ICZM, PAP/RAC is assisting the authorities of the Croatian County of Šibenik-Knin to include the climate issues in the County spatial plan and the management plan of the protected areas. The project was officially launched in April 2013 during a workshop organised jointly by PAP/RAC and Plan Bleu, which was entrusted with the implementation of “Climagine”, an adaptation of the “Imagine” participatory and scenario building method focused on climate issues.

Through all the stages of the plan preparation, the “Climagine” workshops (four in total) were used to involve in average 50-odd representatives of national, regional and local authorities and institutions,

academic community and NGOs whose task was to discuss the various issues relevant to coastal management in view of climate change and identify those of highest priority. It is supposed to end in September 2015 with the adoption of the plan by the County Council.

The project is carried out in close relation with the other component of the CVC project led by PAP/RAC, which is the assessment of the socio-economic costs of CVC impacts at the national level in Croatia and Tunisia, by using the renowned DIVA method. A local assessment of vulnerability to CVC is being carried out for the Šibenik-Knin County. Besides the impacts of sea-level rise, this assessment covers the impacts on different economic sectors (i.e., tourism, agriculture, fisheries, aquaculture, etc.), water management, health, forest fires and the cultural heritage. The results of the assessment, together with the “Climagine” results, will feed into the Coastal Plan of the Šibenik-Knin County.

Action 1.4: Reporting on Protocol Implementation and Monitoring the State of the Mediterranean Coast

The main objective of this Action is twofold:

- (i) to ensure a regular reporting on the ICZM Protocol implementation within the Barcelona Convention (BC) reporting system; and*
- (ii) to periodically report on the state and evolution of the coastal zones.*

Reporting Format

The stock-take² of ICZM legal, institutional and implementation aspects in all 21 Mediterranean countries carried out within the PEGASO project in 2011 and updated in 2013 has served as a basis for the preparation of the official reporting format for the ICZM Protocol.

Given this thorough exercise, the PAP NFPs recommended that the preparation of the reporting format for the ICZM Protocol be split in two phases. Accordingly, the reporting format on legal and institutional aspects was prepared and adopted by COP18 while the reporting format on operational aspects will be submitted to COP19 for adoption.

Since only three countries have provided minor comments and opinion on the contents of the operational part of the reporting format, it was decided that the stock-taking format would be kept. In this way, the CPs will only have to regularly update the existing information.

The number of the CPs having submitted their reports on the legal and institutional aspects will be known by the end of this year.

Periodical reporting on the evolution of coastal zones

The PEGASO project has developed a [core set of 15 indicators](#) that are instrumental in measuring the implementation of ICZM policies and programmes. This core set of indicators addresses the specific requirement of Article 27 of the ICZM Protocol to “define coastal management indicators“ and “establish and maintain up-to-date assessments of the use and management of coastal zones“. It was widely built on previous and existing indicator sets developed by different institutions and projects, which are duly acknowledged. For each of the indicators listed below a methodological factsheet was developed:

- [Added value per sector](#)
- [Area of built-up space](#)

²http://www.pegasoproject.eu/images/stories/WP2/D2.2A_Final%20global%20results%20of%20the%20stock-taking.pdf

- [Bathing water quality](#)
- [Commercial fish stocks](#)
- [Coastal and marine litter](#)
- [Economic production](#)
- [Employment](#)
- [Erosion and instability](#)
- [Natural capital](#)
- [Hypoxia](#)
- [Number of enterprises](#)
- [Population size and density](#)
- [Risk assessment](#)
- [Sea level rise](#)
- [Water efficiency index](#)

Linkages and priorities to EcAp ecological objectives and indicators were made whenever possible. Moreover, the mapping of urban sprawl and natural capital in the parts of the Mediterranean Basin not covered by the CORINE land cover was prepared within the same project, with the idea to be used for the purpose of the EcAp process.

The ecosystem approach is one of the basic principles of ICZM, as stated in the Protocol itself. Therefore, it was logical to include specific coastal indicators in the EcAp list adopted by COP18, so to fully implement the UNEP/MAP legal obligations. These are: the Location and extent of the habitats impacted directly by hydrographic alterations (EO7); and Length of coastline influenced by manmade structures (EO8). Another coastal indicator (on Land-use change) was recommended for further analysis with the aim to be included for monitoring in 2016.

Currently, this candidate indicator is being tested within an EcAp pilot project in the Adriatic region. It will not serve to monitor the state of the coastal ecosystems and landscapes only but it will provide objective and comparable information needed to prepare regular reports on the state and evolution of coastal zones, as required by the ICZM Protocol.

Objective 2: Strengthen the capacities of CPs to implement the Protocol and use in an effective manner ICZM policies, instruments, tools and processes

Action 2.1: Methodologies and Processes

This Action aims at ensuring an up-to-date methodological guidance for the ICZM implementation.

The requirements of the ICZM Protocol as well as new developments in scientific, technological and societal fields make necessary regular updating of the methods and tools used in ICZM. This is an important part of the PAP/RAC's and its partners' work, in which some innovative proposals have been developed.

ICZM Process

Elaborated in co-operation between two major projects in which PAP/RAC is a partner – PEGASO and “MedPartnership”, detailed orientations for the implementation of ICZM as a gradual, proactive and interactive process were proposed, which are made available both in a [hard copy](#) and through the [Coastal Wiki](#), where they were uploaded by the PEGASO team. The process is designed as a “living” tool that can be easily amended by new explanations, good practices, specific tools, etc.

It has been used as a reference by the PEGASO pilot cases and by the two “MedPartnership” pilot projects, from which we expect a lot of feedback in terms of new elements to be included or improvements to be made.

Guidelines for National ICZM Strategies

The ICZM Process has served as a basis for the preparation of the Guidelines to assist the Contracting Parties in fulfilling one of the major obligations of the ICZM Protocol, which is the preparation of national ICZM strategies. These Guidelines were already used in Algeria and Montenegro, and will serve as a guidance for the Coastal and Marine Strategy in Croatia. They were also capitalised within the SHAPE IPA Adriatic project as the partners from the region considered them as a good tool for the elaboration of their own (national or regional) strategies.

Integrative Methodological Framework (IMF)

The “Integrative Methodological Framework (IMF) for coastal, river basin and aquifer management: Towards Converging Management Approaches for Mediterranean Coastal Zones” is another methodological document that has been developed using the ICZM Process as a starting point. This innovative document is the result of a joint effort of the three “MedPartnership” project partners – PAP/RAC, GWP-MED and UNESCO-IHP, undertaken to link closely related but in practice still separated management interventions, which take place in the same or adjacent territorial units, i.e. coastal and marine zones, coastal watersheds and coastal aquifers. Feedbacks from the Réghaïa and Buna/Bojana plans, in which the principles of joint interventions have been tested, are duly taken into account for the finalisation of the document.

Guidelines for Adapting to Climate Variability and Change along the Mediterranean coast

These guidelines were prepared in the frame of the “ClimVar & ICZM” project. In terms of background material, the document draws on an earlier PAP/RAC report showing how the issue of climate variability and change (CVC) can be included as an integral part of the different steps of ICZM. Building on that report, the present guidelines provide a more detailed understanding of different key CV&C aspects in the Mediterranean coastal zones and aid in interpreting the CVC dimension with regard to the format, content and provisions of the ICZM process. These guidelines also provide a critical review of CVC adaptation efforts and mitigation measures, paving the way toward the rational application of ICZM Protocol requirements for this specific dimension.

Study of banking and insurance practice with regard to climate variability and change

Within the “ClimVar & ICZM” project a study was prepared by PAP/RAC on the role of banking and insurance sector in addressing climate variability and change in the context of the ICZM in the Mediterranean. The study has analysed some national and local practices of banks and insurance companies with concrete examples and good practices. Special attention was paid to the insurance against the weather-related risks and availability of loans for the real estates in the close proximity of the sea. Best practices of major regional banks and insurance companies have been presented, such as: products/services offered as incentives for adaptation; opportunities/solutions for sectors with high climate change risks; spatial diversification of insurance/banking products, identifying the level of risk for location; introduction of suggestions for planning and real estate considerations; etc.

Action 2.2: Methodologies and Processes

In accordance with Art. 27 of the Protocol, under this Action the CPs envisage to carry out demonstration projects of ICZM in order to achieve practical results on the ground and disseminate good practice, with special emphasis on governance and coordination mechanisms.

The co-ordination of CAMP projects continues to be one of the major activities of PAP/RAC. CAMPs have always been a privileged space of co-operation of all UNEP/MAP components and an efficient way of applying their expertise in practice and in an integrated manner. This is even more evident in

this third generation of CAMPs, which are entirely focused on the implementation of the ICZM Protocol provisions.

CAMP Levante de Almeria

After three years of intensive work and activity, the [CAMP Levante de Almeria](#) was officially closed at the Final Presentation Conference held in Almeria in February 2013. The conference was attended by high-level political representatives of national, regional and municipal authorities that confirmed dedication to the project results and showed political will to support its continuation.

The numerous activities and their results were presented and the focus was on the [Sustainable Development Reference Framework \(SDRF\)](#) as the major outcome of the project. The project was evaluated as extremely good and innovative at the European level due to the well structured and functional institutional co-ordination and public participation throughout the project duration on the one side, and very well elaborated technical proposals on the other, which were both linked with the “Imagine“ workshops as a tool for scenarios building and indicators.

Everybody wished that the post-project phase would be equally successful. It is obvious that the success of the CAMP will be judged according to the results achieved in the follow-up phase for which an Action Plan was proposed with a plethora of possibilities for job creation and initiation of new economic activities, as well as for using the institutional co-ordination established for the future management of the Levante de Almeria coastal areas.

Prior to the Final Presentation Conference, the project results were presented and discussed by the Coastal Commission at a meeting held in December 2012 that was concluded with the adoption of the Declaration by which a political statement was expressed about the SDRF and the future implementation of the proposed actions. The Coastal Commission is composed of the mayors of eight municipalities, representatives of the Regional government, the Provincial council, Association of the municipalities and of the Ministry of the Environment and Rural and Marine Affairs. This important body was established as the decision-making and executive body of the three-level governance structure of CAMP providing for institutional co-ordination and social participation, while the other two are: the Coastal Council involving the interested parties, or public stakeholders, that, owing to their knowledge of the problems dealt with (i.e. issues related to water resources, landscape management, natural and cultural heritage, public domain, marine resources and the main productive activities in the area - agriculture, tourism, urban development), represent local associations, environmental organisations, NGOs or business sectors (46 altogether) and the Coastal Forum, a platform that involved all citizens or associations in order to catalyse debate on the issues addressed during the development of the project [through its website](#).

The CAMP Levante de Almeria [Final integrated report](#) was prepared and a very informative 25-minute [video](#) about the CAMP implementation in Spain was produced.

CAMP Montenegro

CAMP Montenegro was officially launched in March 2012 at the Inception Workshop in Podgorica to be closed at the Final Presentation Conference in Budva, in December 2014. Both meetings were organised by the Ministry of Sustainable Development and Tourism, with the support of PAP/RAC. Each meeting was attended by more than 70 participants including representatives of national and local authorities, as well as representatives of national institutions and civil society organisations concerned with the Montenegrin coastal zone.

CAMP Montenegro (integrated with the process of preparation of the ICZM Strategy) was designed in such a way to support the process of preparation of the Coastal Area Spatial Plan of Montenegro, through which the practical application of some of the specific articles of the ICZM Protocol can be secured. Focus was on the aspects of ICZM that can contribute to the rationalisation and

modernisation of the public management and spatial planning, such as co-ordination, integration and participation mechanisms, development of a coastal information system (observatory), utilisation of some specific tools and instruments (e.g. vulnerability and suitability analysis, tourism carrying capacity assessment, implementation of the coastal setback). Also, the concept of green economy was promoted and ways of how it can contribute to the sustainable coastal development were examined.

Like all other CAMPs this CAMP relied on a dynamic governance structure that enabled not only a good progress of the CAMP activities but also dynamic links with all other relevant initiatives related to the Montenegrin coastal area, which will ultimately be reflected in the Coastal Area Spatial Plan and the ICZM National Strategy.

More information on the CAMP Montenegro is available at the [project website](#), administered by the Ministry of Sustainable Development and Tourism. All the information available is still only in Montenegrin. Also, all the project outputs are in Montenegrin with summarised versions in English. All outputs will soon be shared at the PAP/RAC web site.

CAMP Italy

The CAMP Italy Agreement was signed in April 2014. The project's strategic objective is to test the integrated management of the coastal area, implementing both the ICZM Protocol and the EU ICZM Recommendation from 2002. The seven complementary objectives of the project will be achieved through activities specifically targeted at the following issues:

- i) management of the marine spaces (such as management of the mining of sand from the seabed, of fish farms, etc.);
- ii) protection and enhancement of the historical-cultural and environmental heritage and landscape;
- iii) diversification of the touristic offer (new offers focused on specific environmental and landscape aspects);
- iv) environmental and landscaping restoration;
- v) recovery and preservation of the coastal and marine environment at the river mouths;
- vi) description and representation of the territory and its resources, identifying values, opportunities and critical issues, reasons for the proposed choices and evaluating expected effects; and
- vii) definition of evolutionary scenarios which intervention policies must address.

The Inception Workshop took place in Sardinia, in November 2014. Representatives of all the three Italian regions participating in the project, namely: Emilia Romagna, Sardinia and Tuscany, as well as representatives of different authorities and MAP components, attended the meeting.

The project is important not only for solving of the immediate problems of coastal areas of the three involved regions but for its contribution to the national level as well. Moreover, this project is also meant to enhance networking with other CAMPs and provide an excellent opportunity for all MAP components to work closely during its implementation. It is envisaged to be concluded by early summer 2016.

More information can be found at the project web site: <http://www.camp-italy.org/>

CAMP France

The CAMP for the Var County of France was signed in September 2014 and preparatory activities for its official launching in June this year are on-going. The project was initiated following the official

request of the President of the General Council of Var to be an extension of the County's Sea and Coastal Scheme and bring, in an international framework, the additional expertise and analysis.

The project will support the implementation of an integrated management approach at the local level through pilot approaches and the application of internationally accepted methodologies. In addition, the CAMP aims to study the gradual creation of a system of "sea-coast" governance that should be linked with the existing management initiatives in the space between land and sea in the Var County (Natura 2000 in the sea, Land sites and PMD of the Conservatory of the Coast, bay-contracts, County scheme for spatial planning, Charter of the National Park of Port Cros, the coastal strategic document, etc.). Since from the beginning it was designed among the PAP/RAC, the Conservatory of the Coast (PAP/RAC's French Focal Point), the Ministries of Environment and Foreign Affairs, and the associated experts, such as those of the Var General Council and the Rhone-Mediterranean-Corsica Water Agency, their support is expected throughout the project.

Pilot project on Marine Spatial Planning (MSP)

Following the statement made at COP18 that "marine spatial planning was a significant avenue to be explored for the future of MAP and in particular for the implementation of the ICZM Protocol", PAP/RAC and the University of Thessaly in Greece have launched a pilot project entitled "Paving the Road to Marine Spatial Planning in the Mediterranean". The project intends to facilitate the implementation of the ICZM Protocol, in particular with regard to its provision on Marine Spatial Planning (MSP), by developing methodological tools, proposing possible co-operation/management schemes and identifying prerequisites and possible ways to deal with challenges, in an effort to assist the CPs to meet the common objectives of integrated marine spatial planning and management.

The Inception Meeting of this one-year project took place in Athens, in January 2015, with the participation of some 30 participants. All members of the core team were present as well as experts from the co-operating partners: Ministry of Environment, Energy and Climate Change (MEECC), Region of the Ionian Islands and the HCMR. One must mention the strong team from the Directorate of Spatial Planning of MEECC (recently renamed as the Ministry of Productive Reconstruction, Environment and Energy – MPREE), as well as representatives of the authorities from the Region of the Ionian Islands and the Marine Park of Zakynthos.

Action 2.3: Professional Development, Training and Education

The objective of this Action is to enhance the constituency of the state-of-the-art expertise needed for the implementation of ICZM.

Same as the governance, training and education are two compulsory components of all ICZM projects, which are delivered through workshops and training courses for a variety of national and local stakeholders. Also, practical experience gained by the National CAMP Co-ordinators and other national consultants recruited by PAP/RAC to implement this project over 2-3 years constitutes a unique opportunity to build ICZM capacities in the countries.

In this chapter we will not enter into detail of these numerous learning opportunities; instead, we would like to focus on the on-line regional training being delivered by PAP/RAC on a yearly basis – the [MedOpen](#) Virtual Training Course on ICZM in the Mediterranean targeting decision makers, policy advisors, project managers, staff and experts of international organisations and institutions, academic researchers, students, and all others interested in coastal management.

An updated version of the MedOpen Basic module has been continuously available to users, open to everyone and completely automated, while two runs of the Advanced module were delivered since 2012. This 4-months Advanced module requires a higher degree of commitment both by trainees and PAP/RAC staff as it includes lecturing by renowned ICZM experts, forum discussions, simulation game and a final essay.

The 2012 MedOpen ICZM Advanced edition was settled in the frame of the PEGASO project with one of its work packages devoted to education and training. However, due to high interest, it also included several other candidates from the Mediterranean region. The training course was attended by 32 candidates. A number of 15 candidates in total successfully completed the course and were awarded the PAP/RAC MedOpen Advanced certificate.

The 2013 ICZM Advanced edition was organised for the SHAPE project partners with the aim of getting them acquainted with the ICZM in general and in more detail with the ICZM process being crucial for the implementation of SHAPE Pilot Projects. A number of 22 applicants registered, more than a half of whom actively participated. In the end of the course, 14 candidates were awarded the PAP/RAC MedOpen Advanced certificate.

During 2014 the preparatory actions were completed for a specific module on climate change foreseen by the „ClimVar & ICZM“ project. The module has been prepared on the basis of the CV&C Guidelines and will be moderated by one of the authors. The opening of both, Basic and Advanced runs, is announced for May 2015. Out of 29 candidates who applied by 20 March 2015, which was the deadline for the submission of applications, 15 candidates in total were selected. According to the criteria used for the selection of candidates, the priority was given to the applicants from the GEF eligible countries in which the “ClimVar & ICZM” project is being implemented.

Objective 3: Promote the ICZM Protocol and its implementation within the region, and promote it globally by developing synergies with relevant Conventions and Agreements

Action 3.1: Public Participation and Awareness Raising

This Action aims to ensure a wide societal engagement in ICZM involving the civil society as well as governmental institutions.

Awareness raising of the coastal issues and ICZM is done in many ways and on many occasions: through promotional material, scientific and newspapers' articles, lecturing, assistance to conferences and other events. In this part we shall focus in particular on the main awareness activity that, since its launching in 2007, has become a tradition – the [Mediterranean Coast Day](#) celebration. Its main purpose is to raise awareness of the importance of the coast as both natural and economic resource, as well as to warn of the risks it is exposed to due to natural phenomena and human actions. This is done through a combination of technical workshops and public awareness raising campaigns including video projections, concerts, distribution of promotional material, contests for kids and adults, NGO fora and expositions, etc.

Each year the central Mediterranean celebration is organised in a different country, while other countries organise their own events. After Italy (2007 and 2008), Turkey (2009), Slovenia (2010) and Algeria (2011), the following countries hosted the central celebrations, under the auspices of the high-ranking state officials and with participation of representatives of Mediterranean countries, institutions and the civil society:

- Croatia: the 2012 central celebration was organised in Split as a part of the EU IPA Adriatic SHAPE project, and in collaboration with UNDP's “Coast” project. The theme of the celebration was “The Voice of the Coast” as some of the most famous Croatian singers accepted to give a free concert on that occasion;
- Italy: the 2013 central celebration was hosted by the Italian region of Emilia-Romagna. The event took place in the coastal city of Rimini, famous for its endless sand beaches, which was most appropriate since the focus of that year's celebration was on the beaches;

- Tunisia: the 2014 central event was celebrated in Gammarth, with focus on climate variability and change, organised in the framework of the “ClimVar & ICZM” project under the motto “[A good climate for change](#)”;
- The 2015 central celebration will be taking place in France. Besides promoting the ICZM Protocol, it will be the occasion to celebrate the 40th anniversary of MAP.

It would be unfair not to mention all local celebrations being organised every year by cities and regions around the Mediterranean for their inhabitants. The list of all events is too long to be included in this report (it has been done at the [Coast Day](#) website) and PAP/RAC expresses once again its gratitude to all those who contributed to our joint efforts to reach a number of people which becomes innumerable.

Finally, it has to be pointed out that the public participation is promoted in all ICZM projects and included as a compulsory activity (see Action 2.2 Protocol Implementation Projects).

Action 3.2: Excellence on ICZM Issues for the Mediterranean

To maintain and enhance the capacity of MAP components and CPs on the ICZM Protocol-related issues.

The Mediterranean Region, UNEP/MAP and PAP/RAC are undoubtedly at the forefront of ICZM, not only because of the unique legally binding instrument adopted to deal with ICZM issues but also because of the knowledge and expertise accumulated over years of ICZM implementation. That is why PAP/RAC and its collaborators are often consulted and invited to intervene. It would take pages to list all the occasions of the kind; hereafter are some of them for illustration:

- International Conference in Sète, France, on the occasion of the 2012 Marseille [World Water Forum](#) held in March 2012 when a local agreement on ICZM was confronted to the ICZM Protocol;
- “MedDays”, a high-level geo-political and socio-economic forum organised in Tangiers, Morocco, in November 2012, by the [Amadeus Institute](#) during which the PAP/RAC was invited to intervene within a panel chaired by the Moroccan Minister of Tourism;
- International conference “[Littoral 2012](#)” in Oostende, Belgium, in November 2012, where PAP/RAC delivered two key note speeches;
- Study visits to PAP/RAC by the members of the South Korean Maritime Institute (October 2012) and the Jordanian UNDP project “Mainstreaming Marine Biodiversity into ICZM Practice” (June 2013) to learn about ICZM in general and its specific topics;
- Meeting at the European Parliament in Brussels (September 2013) to present the ICZM Protocol prior to the first reading of the Draft MSP Directive;
- UN DESA workshop in Dubrovnik, Croatia (October 2013) to contribute to the preparation of the Global Report on Sustainable Development, when the role of ICZM with regard to coastal sustainability was presented and MSSD promoted;
- Meeting in Brussels (November 2013) to start the work on the Adriatic-Ionian macro-region strategy, within which PAP/RAC intervened in a panel on the environmental pillar of the strategy to promote the ICZM Protocol and the other BC legal instruments and on-going processes;
- UNEP/DTIE webinar where PAP/RAC was a guest speaker with the theme “Integrated Coastal Zone Management (ICZM) and Strategic Tourism Development Planning” (May 2014);
- EU and UfM meetings in Amman, Jordan (March 2014), on three main themes of concern for the UfM (Horizon 2020, SCP and CC) when the PAP/RAC was given the opportunity to present the climate change related work within the “ClimVar & ICZM” project;
- First Inter-parliamentary Conference on the Challenges of Sustainable Tourism, in Zagreb, Croatia (September 2014) to speak about the pressures made by tourism on the Mediterranean

coastal and marine environment and to propose the ICZM approach to the strategic planning of sustainable tourism development;

- Third European Ports & Shipping Conference in Amsterdam, The Netherlands (September 2014) to present the ICZM policy framework that could play a significant role in strategic planning for ports and shipping industry;
- Conference “EuroMED Co-operation: Inland and Marine Water Challenges” under the Italian Presidency of the Council of the European Union (November 2014) to deliver the key note speech at one of the four parallel thematic workshops held during this two-day Conference: the one on a Mediterranean integrated ocean observing system to support sustainable coastal and marine tourism;
- [2014 Think Forward Film Festival](#) as a part of the International Centre for Climate Governance, a joint initiative of *Fondazione Eni Enrico Mattei* and *Fondazione Giorgio Cini*, during which a short animated movie “A good climate for change” prepared for the 2014 Mediterranean Coast Day was presented;
- European-Mediterranean Conference (Parmenides II) of the association of ten academic institutions in Africa and southern Europe promoting one of the UN’s Millennium Development Goals (Bridging the Gap Between the Scientific Output and the Needs of the Stakeholders) to deliver speech about PAP/RAC’s and UNEP/MAP’s efforts in the field of coastal zone management;
- PAP/RAC membership in the Joint EU Member State Expert Group on MSP and ICZM that meets annually to deliberate of the land-sea interaction and their management;
- PAP/RAC acted as the External Quality Advisor of the EU COASTGAP project by orienting the project activities and providing an Audit Report.

Action 3.3: Promoting the Protocol

To promote the ICZM Protocol across and beyond the Mediterranean Region.

It would take pages to list all the occasions (many of them actually being the same as in the previous Action) and ways in which the ICZM Protocol has been promoted in the Mediterranean: through promotional material such as the ICZM Timeline exposed on several occasions, brochures, leaflets and videos, participation to conferences and other events.

Therefore, we shall mention here only some far-reaching echoes of the Protocol, such as:

- The co-operation with the Black Sea Commission within the PEGASO project to explore the possibility of adopting a similar legal instrument for the Black Sea region;
- The participation of a PAP/RAC representative in a meeting of the West Indian Ocean for which a regional legal instrument is being prepared following the model of the Mediterranean ICZM Protocol; or
- Presentation made by the IFREMER delegate in Martinique on behalf of PAP/RAC on the ICZM Protocol at the yearly BODLANME Forum of the French Antilles region.

Action 3.4: Networks

To collaborate with existing networks and establish a Mediterranean coastal zone network to promote best practices.

Even if the responsibility for the co-ordination of the implementation of the ICZM Protocol and its Action Plan is on the PAP/RAC and UNEP/MAP, this complex and demanding task would be impossible without the input and co-operation of a diversity of other actors and their networks. Over the past years, these are being generated at the regional (Mediterranean), national and sub-national level, and their initiatives and efforts are extremely important for the creation of the critical mass that will allow for the change of the unsustainable development and coastal management patterns. It would

be unrealistic, and in a way presumptuous, to expect that the UNEP/MAP system and the initiatives it can promote with the CPs can be enough to cover all the important coastal issues and to provide all the knowledge needed for their modern management.

Therefore, the wise approach has always been followed to benefit from the other existing networks, such as the networks of institutions and organisations with which UNEP/MAP has signed memoranda of co-operation (UfM, GFCM, IUCN, MedPAN, etc.) or networks born within and among projects in which PAP/RAC has participated as a partner (PEGASO platform; network of European regions promoted by the Bologna Charter; FaceCoast network of coastal initiatives, etc.) or the ever growing number of projects under the ICZM-related funding instruments of the European Union (such as ENPI, FP7, LIFE, DG MARE calls, etc.).

Of course, equally important are the networks established within the UNEP/MAP and PAP/RAC led projects, in the first place CAMPs and other ICZM Protocol implementation projects. Besides the internal ICZM networks created in these projects, the need is growing over the last years to strengthen the links among them. Even if the exchange and passing of experiences and lessons learned has always existed, it is time to think to a more formal network that will allow to these projects to grow together, to become a hub attracting the other similar projects to co-operate and the place where one can find solid information and help. Together with the most recent CAMPs, PAP/RAC is working in this direction.

Wrap-up

Despite the difficulties that the entire Mediterranean region and UNEP/MAP system in particular have been facing these last years, a high level of ICZM activity has been kept and some good quality results have been delivered. Scaling up ICZM as a strategic policy instrument at the national level, proposing innovative methodological approaches, strengthening governance mechanisms, acting “on the ground” through concrete territorial projects – these have been the fields in which major progress was made. Based on the achievements described in the previous chapter, the Table 1 below gives a very general estimate of the state of progress within each Action.

Table 1: PAP/RAC's estimate of the progress in implementing the Action Plan

Objective 1: Support the effective implementation of the ICZM Protocol at regional, national and local levels including through a Common Regional Framework for ICZM.	
Action 1.1 Ratification and transposition	+++
Action 1.2 Strengthening and supporting governance	+++
Action 1.3 Adopting National Strategies and Action Plans and Programmes	++
Action 1.4 Reporting on Protocol Implementation and Monitoring the State of the Mediterranean Coast	+++
Objective 2: Strengthen the capacities of CPs to implement the Protocol and use in an effective manner ICZM policies, instruments, tools and processes.	
Action 2.1 Methodologies and Processes	++++
Action 2.2 Protocol Implementation Projects	++++
Action 2.3 Professional Development, Training and Education	++++
Objective 3: Promote the ICZM Protocol and its implementation within the Region, and promote it globally by developing synergies with relevant Conventions and Agreements.	
Action 3.1 Public Participation and Awareness Raising	++++
Action 3.2 Excellence on ICZM Issues for the Mediterranean	++++
Action 3.3 Promoting the Protocol	+++
Action 3.4 Networks	+++

Poor (+); Moderate (++); Good (+++); Very good (++++); Excellent (+++++)

The scarcity of financial resources, sometimes coupled with difficult working and travelling conditions, made progress difficult in some of the fields. Several studies that were foreseen could not be completed, such as the screening of the national legal framework with regard to the ICZM Protocol in France, Italy and Lebanon. Methodological work on linking ICZM and Marine Spatial Planning (MSP) had to be postponed, and the same happened with the carrying capacity of coastal territories.

On the other hand, some other opportunities have been seized, like working on land-use changes in the Southern Mediterranean, deepening the work on the coastal indicators within the EcAp process, launching a small pilot project to better understand the MSP processes, opening MedOpen runs for external projects' needs and by using their funding.

As shown in the Figure 1 below, the progress with the implementation of the Action Plan has depended a lot on the external funding secured. This has also to some extent conditioned the type of activity and their geographical distribution, although we can say that a combination of EU and GEF funds with different eligibilities contributed to make balance in both terms (see the following chapter).

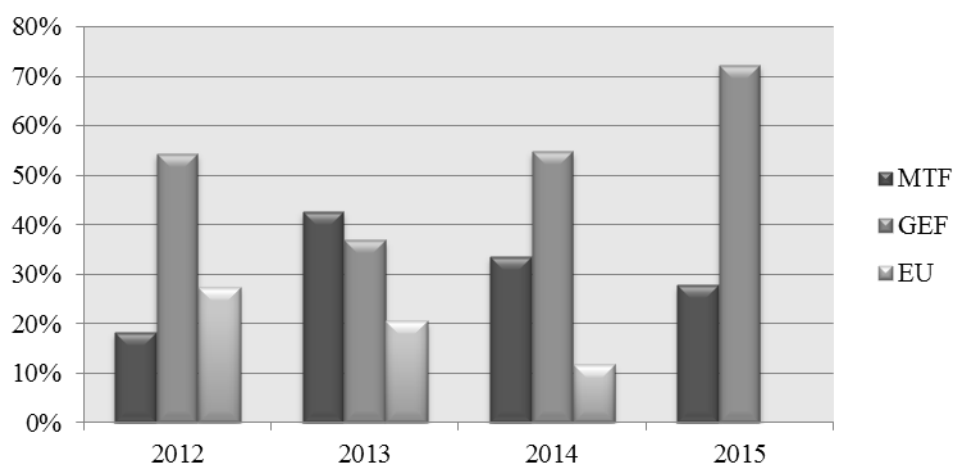


Figure 1: Funding of PAP/RAC-led activities during the first four years of the Action Plan implementation

Similarly to the key characteristic of the ICZM, the approach in implementing the Action Plan has been highly adaptive to the prevailing conditions and capacities. Actually, that was the message sent by the CPs when deciding to adopt an Action Plan that is not too prescriptive and that will allow each CP to implement it at its own pace and UNEP/MAP to act in conformity to its human and financial capacities.

Main findings of the external evaluations

Following the decisions and recommendations of the CPs, two external evaluations of relevance for the implementation of the ICZM Action Plan have been undertaken:

- the Outcome Evaluation of the Barcelona Convention / United Nations Environment Programme – Mediterranean Action Plan (UNEP/MAP) Five-Year Programme of Work 2010-2014; and
- the Assessment of CAMP projects implemented since the last assessment in 2001 (Algeria, Cyprus, Lebanon, Malta, Montenegro, Morocco, Slovenia and Spain).

The most important initial findings related to ICZM taken from the draft reports of these two evaluation processes are reproduced hereafter.

Evaluation of UNEP/MAP Five-Year Programme of Work

The Five-Year Strategic Programme of Work for the period 2010-2014 (PoW) was adopted by COP17 (Marrakesh, 2009). Implementation started in 2010 and in 2013 the CPs approved the extension of the programme by one year to the end of 2015 (COP18 Decision IG.21/17) to better synchronising the medium term and biennial planning cycles.

Out of the six themes of the PoW (Governance; ICZM; Biodiversity; Pollution prevention and control; Sustainable consumption and production; and Climate change) ICZM has been rated very high by the interviewed persons and respondents to the questionnaire carried out within this evaluation (Fig. 2). Pollution Control & Prevention and ICZM have been rated as the overall most relevant issues at country level, Basin level and with regard to the MAP mandate. However, respondents from three countries noted that their countries had not yet signed or ratified the ICZM Protocol and a fourth commented on its limited relevance in view of the country's short coastline.

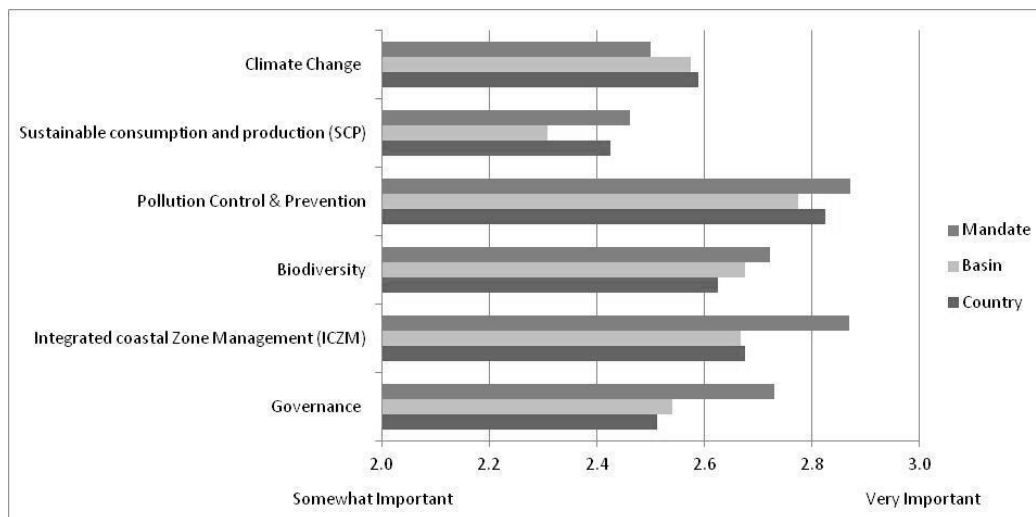


Figure 2. Summary of survey responses on relevance of PoW themes at basin level and at country level and with regard to MAP mandate (based on application of a numerical scale to survey ratings) Source: Evaluation Survey

The excerpts from the Draft Evaluation Survey (January 2015) that follow describe the progress with and the benefits of the implementation of the ICZM Protocol Action Plan since its adoption:

“2012-2013: There were nine expected results under ICZM in 2012-2013 organised under three activities (Implementing ICZM Protocol Action Plan: Assist countries in preparing ICZM Strategies and Plans; Updating and preparing ICZM methodologies; Implementing ICZM protocol through specific local and policy initiatives). The activity budget was EUR 2.15 million of which just EUR 0.71 million was secured when the plan was approved. ICZM related activities also appeared under the governance and climate themes. There were six related expected results under governance, spanning four activities, with a total budget of EUR 0.17 million that was fully secured and three related expected results under climate change, spanning two activities, with a total budget of EUR 0.61 million, also fully secured. Active projects contributing to this theme included the MedPartnership, ClimVar, PEGASO, SHAPE and ProtoGIZC projects.

...

2014-2015: There are seven expected results under two strategies (Implementing Priority actions as agreed in ICZM Action Plan, Technical Assistance and Capacity Building) with a total budget of EUR 2.27 million of which EUR 1.27 million had been secured.

Deliverables over the period covered by the evaluation form a coherent package of work spanning policy, pilot initiatives, capacity development and awareness. They reflect continuity across the biennia as well as adaptations and expansion of the scope of work to reflect the: i) entry into force of

the ICZM Protocol in March 2011 and ii) adoption of the Action Plan for the implementation of the ICZM Protocol for the Mediterranean (2012–2019) in February 2012.

In terms of programme coherence, the PoW deliverables contribute to a set of immediate outcomes that can be considered as complementary and mutually reinforcing with the policy work on regional and national action plans serving as an overall framework for policy implementation. This is well illustrated by the package or work on ICZM which was strengthened after adoption of the Protocol and related Action Plan.

...

Work to ICZM spans most of strategic approaches and drivers identified in the TOC¹ model including assessments, development of guidelines, capacity development, communications and visibility, and compliance reporting. Documented outcomes related to ICZM have been in two main areas: i) policy outcomes related to the entry into force of the ICZM Protocol, adoption of the Action Plan and development of a reporting framework) and ii) pilot interventions which can be expected to lead to stress reduction at the local level. The combination of policy framework, pilots and testing of guidelines are contributing to development of national ICZM plans or strategies in four countries. Identified 'risks' for the ICZM work, namely administrative delays at the national level, difficulties of coordination among partners and sectors on horizontal and vertical levels, lack of data availability and sectorial conflict of interest, reflect challenges to implementation at the national level. These issues have been directly tackled in the CAMPs and MedPartnership pilot projects and national ICZM planning and are also discussed in methodological guidance.

The consolidation of ICZM work leading up to and following adoption of the ICZM Protocol in 2011 demonstrates how the complementary programme strategies, including regional, methodological developments, capacity development and pilot initiatives, can act in a synergistic manner to promote and support delivery of a Protocol at a national level.”

Assessment of CAMP projects

The following major findings are taken from the draft assessment report on eight CAMPs undertaken since 2001:

- *“The majority of CAMP projects fully (or nearly) achieved their local objectives.*
- *Association of stakeholders has usually been very good, even when they had not been fully engaged in the project design.*
- *During their lifetime, all projects created a coastal community and produced a more or less inclusive vision of the desired future for the area.*
- *During their lifetime, all the projects contributed to demonstrating the relevance of an ICZM approach and developed implementation capacity of ICZM at local level.*
- *Given their cost (very limited) and their duration (often only 1.5 to 2 years of effective working) they have proved very efficient.*
- *There was weak follow-on in most of the projects, except where from its inception the project has been designed as a support for the development of high level coastal strategy or policy, and hence an institution has been committed to long-term implementation of the project.*
- *Despite the success of individual projects in meeting their planned objectives, they share some general limitations in terms of their lack of sustainability and limited contribution to the dissemination of ICZM in their countries, as well as regionally/internationally. Although the memory of purely local projects is kept, the capacity they built is lost by institutions within a few years.*
- *In terms of long term impacts, only those projects explicitly linked to institutional initiatives (changes in legislation and/or management strategies) had real persistent outcomes. “Standalone” local projects that were not integrated within national approaches towards coastal management vanish through a lack of institutional support (e.g. governance, funding).*

- *Where projects did not result in “mainstreaming” ICZM into policies or strategies, dissemination across sectors and organisations was limited leading to a reduced impact.*

Overall even if it could not completely solve the structural problem of changing policies through projects, the CAMP has proved an effective instrument to promote concepts of ICZM, and, in general, has led to a lasting institutional memory that permeates organisational practices beyond the lifetime of individual projects. Although there have been many institutional and technical changes that have taken place during the 25 years since the CAMP programme was launched, the assessment found there is still need, and demand, for at national and regional levels for a programme to support the development of coastal management and integrated approaches across the Mediterranean.”

Conclusion

The implementation of the Action Plan has been and remains quite a challenge for all: CPs, PAP/RAC and the entire UNEP/MAP. In order to advance with it, PAP/RAC had to invest a lot of effort to mobilise external resources due to the scarcity of the MTF funds that all UNEP/MAP components have to cope with and the economic crisis that almost all CPs have been facing over the last couple of years. Without these external resources and without efficient partnership forged with other Mediterranean actors, these results could not have been possible. Not to forget the crucial role of NFPs – the more they are dynamic and responsive, the more PAP/RAC can be successful not only in their countries but in the regional endeavours as well.

As shown in the previous chapters, good progress has been made. What could not be done will remain a challenge for the future. To fill the gaps and to keep alive its actual activities PAP/RAC will continue to closely collaborate with the CPs and to assist them in mobilising external resources for the implementation of ICZM. Two project proposals are currently being processed: a joint Plan Bleu, PAP/RAC and SCP/RAC project proposal on Blue Economy recently submitted to the MAVA Foundation; and a Medium-Size Project Proposal for the Adriatic Area to be soon submitted for GEF funding. Let's hope for the best!

Let's also hope that new opportunities will appear soon to prepare proposals in which other countries will be eligible. This could be a new project for the GEF eligible countries, or some of the EU funding instruments for the Member-States or the cross-border co-operation. To be fully prepared for these opportunities and to be able to react quickly, we invite you to share with us your priorities and preferences for action with regard to ICZM.

We hope that this document can be a source of inspiration for the CPs while considering the activities they would like to implement in the remaining period covered by the Action Plan. However, according to our experience and feedbacks from the first half of the Action Plan implementation period, we can already make same suggestions:

1. An additional effort would be needed by the CPs to reach the objective of the full ratification of the ICZM Protocol. In this, we invite them to ask for assistance with technical explanations, or to simply use the documents already produced. This practice has already yielded results in some countries.
2. In this document, only the activities led within UNEP/MAP are reported; we shall report on the others once we officially learn about them from the operational part of the reporting format for ICZM, e.g. when it becomes the obligation for the CPs. Regular reporting on the ICZM Protocol is crucial to know the progress made with regard to its implementation but it is also a valuable source of information for PAP/RAC and UNEP/MAP on the gaps to be filled-in and the needs of the CPs.
3. Given the proven usefulness of CAMPs and the interest of the countries for this kind of activity, CAMPs and similar ICZM demonstration projects will remain a core instrument for the

implementation of the Action Plan, i.e. the mainstreaming of the ICZM principles and the improvement of the coastal management practice.

4. The ever growing competition for the use of the marine space makes it necessary to design the future CAMP and other ICZM projects in a way to include a strong sea-use planning component and in particular to explore the land and sea interactions including in terms of uses.
5. Owing to the projects implemented at the local level, the ICZM has reached its maturity and it is time now to systematically scale it up as the strategic option. Therefore, and with the objective of fulfilling the relative Action Plan objective, the CPs are invited to adopt national strategies for ICZM reflecting the provisions of the Protocol. PAP/RAC will try and mobilise human and financial resources to accompany them in this endeavour if the interest and political will are ensured and clearly stated.
6. ICZM strategies can be an excellent management instrument for reaching sustainability in coastal zones. Therefore, they find their place within or in close relation with the strategies for sustainable development. This is to be ensured first at the Mediterranean level through the MSSD 2.0 and then to be reflected at the national level. The responsibility for both lies on the CPs but PAP/RAC and UNEP/MAP are aware of their important role in providing the support needed.
7. ICZM finds its place and role in two other major UNEP/MAP processes, namely EcAp and Regional Climate Change Adaptation Framework. With its integrative methods and tools, it offers the most operational management mechanism for implementing and reaching the objectives of both.
8. The Mediterranean governance on ICZM is crucial for its success. A combination of elements developed in previous or on-going projects (PEGASO, “MedPartnership” and “ClimVar & ICZM”) and the initiative promoted mainly by the recent CAMPs towards the establishment of an official network can make an important step forward in boosting the regional governance mechanism.

We are optimistic that even in the future the positive trend in the implementation of the Action Plan will continue. The critical mass of people, knowledge and experience is constantly growing and, if economic and political situation is to improve, we believe that the CPs will have more resources and energy to dedicate to the enhancement of the management of the precious coastal and marine space.

Draft Decision IG.22/12

**Updated Action Plans Concerning “Cetaceans”, “Coralligenous and Other Calcareous Bio-concretions”, and “Species Introductions and Invasive Species”;
mandate for update of the “Action Plan on Marine and Coastal Birds” and revision of the
“Reference List of Marine and Coastal Habitat Types in the Mediterranean”**

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling Articles 11 and 12 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, hereinafter referred to as the “SPA/BD Protocol”, on national measures for the protection and the conservation of species and on the formulation and implementation of action plans for their conservation and recovery respectively;

Recalling Decision IG.19/12 of COP 16 (Marrakesh, Morocco, November 2009) related to the Amendments of the list of Annexes II and III of the SPA/BD Protocol and more particularly the marine and coastal bird species included then in Annex II to the SPA/BD Protocol “List of endangered or threatened species”;

Recalling Decision IG.20/4 and IG.21/3 of COP 17 (Paris, France, February 2012) and COP 18 (Istanbul, Turkey, December 2013) respectively adopting Ecological Objectives, Operational Objectives, GES and related targets ;

Recalling Decision IG.21/17 on the Programme of Work of COP 18 (Istanbul, Turkey, December 2013) on the update of the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea and the Action Plan for the Conservation of the Coralligenous and Other Calcareous Bio-concretions in the Mediterranean Sea;

Having considered the report of the 12th Meeting of SPA/RAC Focal Points (Athens, Greece, May 2015);

Adopts the Updated Action Plan for the Conservation of Cetaceans in the Mediterranean Sea, as contained in Annex I to this Decision;

Adopts the Updated Action Plan for the Conservation of the Coralligenous and Other Calcareous Bio-concretions in the Mediterranean Sea, as contained in Annex II to this Decision;

[Adopts the Updated Action Plan concerning Species Introductions and Invasive Species in the Mediterranean Sea, as contained in Annex III to this Decision;]

Requests the Contracting Parties to take the necessary measures for the implementation of the updated Action Plans and report according to the cycle and format of the MAP/Barcelona Convention reporting system;

Requests SPA/RAC to provide support to the full implementation of the updated Action Plans;

Requests also SPA/RAC to update the Action Plan for the Conservation of Bird Species listed in Annex II to the SPA/BD Protocol including all 25 target species, and to revise the Reference List of Marine and Coastal Habitat Types in the Mediterranean for consideration by COP 20, taking in full account the biodiversity-related MAP Ecological Objectives, IMAP, and GES targets.

ANNEX I

Updated Action Plan for the Conservation of Cetaceans in the Mediterranean Sea

ACTION PLAN FOR THE CONSERVATION OF CETACEANS IN THE MEDITERRANEAN SEA

Amended Appendix:

Additional Points for the Implementation of the Action Plan for the period 2016-2020

Taking into account (i) the work done at national level for the conservation of cetacean species in the Mediterranean since the adoption of the Action Plan in 1991, (ii) the progress made so far in the implementation of the provisions of ACCOBAMS in the region and (iii) the available knowledge about the status of the Mediterranean cetacean populations, the Contracting Parties to the Barcelona Convention are invited to orient their action regarding the implementation of the Action Plan towards the following priorities during the period 2016-2020.

Legal and institutional measures

- To ratify the ACCOBAMS Agreement, if they have not already done so, and to implement its Resolutions and Recommendations of relevance for the Mediterranean Sea. As agreed during the 14th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Portoroz, Slovenia, November 2005), the common obligations relating to cetaceans under the SPA/BD Protocol are fulfilled by the implementation of ACCOBAMS. In this context, close cooperation at the national level between the SPA/RAC National Focal Points and the ACCOBAMS Focal Points is highly recommended.
- To ensure that cetaceans are covered, at national level, by appropriate regulation measures providing for the elimination of deliberate killing and for the mitigation of the adverse impacts from their interactions with human activities, in particular in relation to:
 - bycatch and depredation in fishing gears,
 - seismic surveys and other marine noise generating activities,
 - harassment by leisure boating and scientific activities and
 - collisions with ships (ship strikes)
- Ensure, through regulation or other appropriate approaches, that whale-watching activity is environmentally sound and sustainably conducted, using, as appropriate, high quality certification systems for whale-watching.
- Where relevant for cetacean conservation, to support the use of the compliance mechanisms set for the Barcelona Convention and the ACCOBAMS Agreement, in particular by encouraging the notification of non-compliance and of non-follow-up cases.
- SPA/RAC should pursue its collaboration with the Secretariat of ACCOBAMS, by facilitating the implementation of the Annex 2 (Conservation Plan) of ACCOBAMS, in particular in fulfilling its function of the Regional Coordination Unit for the Mediterranean of the ACCOBAMS Agreement.

Improving the knowledge about cetacean populations

- Considering the urgent need of obtaining reliable estimates of cetacean populations and data about their distribution, a special effort should be done in the period 2016-2020 to undertake the comprehensive survey of abundance and distribution of cetaceans being planned by ACCOBAMS (ACCOBAMS Survey initiative). Their contribution (funding, equipment, vessels, planes, etc.) and the involvement of their scientists in all the survey phases (planning, field work and data analysis) being a key factor for the success of the Survey, the Contracting Parties should facilitate and support the Survey Initiative and liaise closely with SPA/RAC to ensure that the data collected by the Survey serve also as baseline data for the Good

Environmental Status concerning cetacean species as defined by the contracting Parties under the Ecological Objective 1 of the EcAp process.

Reducing cetacean-fisheries interactions

- To assess the cetacean bycatch and depredation in their fisheries and adopt mitigation measures taking into account the requirements for cetacean conservation and the need for the development of sustainable and responsible fishing activities. In this context, the Contracting Parties are invited to conform to the recommendations from ACCOBAMS and GFCM on this issue.
- SPA/RAC should strengthen its collaboration with the Secretariats of ACCOBAMS and GFCM to provide assistance to the Mediterranean countries in mitigating the impacts of the interactions occurring between cetacean species and fishing activities, through investigating innovative and environmentally sound mitigation measures and by disseminating information on relevant best practices and successful initiatives.

Mitigating the impact of underwater noise

- Pursue the development and the implementation of a basin-wide strategy for underwater noise monitoring in the Mediterranean, as proposed by the ACCOBAMS/ASCOBANS/CMS Joint Noise working group, under the Ecological Objective 11 of the EcAp process.
- Development of acoustic mapping using standardised methodologies to build a comprehensive picture of the spatial and temporal distribution of anthropogenic noise sources. Mapping effort should be deployed in the noise hotspot areas identified in the Mediterranean by ACCOBAMS, taking into account the available knowledge regarding the distribution of cetacean species, including areas that are affected at different levels of noise.
- Promote awareness of the anthropogenic noise impacts on cetaceans, targeting in particular decision makers, key players in the industry organisations and the stockholders in the shipping sectors.
- Considering the increasing number of seismic surveys in the Mediterranean Sea, SPA/RAC should liaise closely with the Secretariat of ACCOBAMS, the national authorities of the Mediterranean countries and relevant companies to promote the collection and dissemination of cetacean data from MMOs (Marine Mammal Observers) during seismic surveys.

Habitat conservation

- In addition to implementing the provisions of the relevant international and regional agreements related to combatting pollution and eliminating sources of degradation of the marine environment (IMO regulations, relevant Protocols of the Barcelona Convention, Convention on Biological Diversity, etc.), each Contracting Party should establish a list of marine areas under its jurisdiction identified as of special importance for cetaceans, using as appropriate the tools developed at regional and international levels for inventorying sites of conservation interest, in particular the list of areas of special importance for cetaceans in the ACCOBAMS area .
- The areas of special importance for cetaceans should be granted a protection status that ensures the long term preservation of the species and the sustainable management of human activities having impacts on cetaceans.

ANNEX II
**Updated Action Plan for the Conservation of the Coralligenous and Other
Calcareous Bio-concretions in the Mediterranean Sea**

I. Current situation of coralligenous assemblages

I.1. Current knowledge

1. At present there is a general knowledge on the distribution, species composition and functioning of coralligenous assemblages and other calcareous bio-concretions. However, and despite the efforts conducted since the adoption in 2008 of the Action Plan for Coralligenous and other Calcareous Bioconstructions, in the Mediterranean, there are essential questions that need to be addressed to guarantee the conservation of these emblematic Mediterranean habitats (see specific sections).
2. Probably the number and quality of presentations during the 2nd Mediterranean Symposium on the Conservation of coralligenous and other calcareous bio-concretions (Portorož Eslovenia 29-30 October 2014) are the best example on the interest of Mediterranean scientific/managers community to improve the knowledge on these assemblages (Proceedings 2nd MSC&CBC 2014).
3. Despite of this, it was also noted that (i) most actions regarded individual- national- based efforts (ii) the lack of structures for coordination in an efficient way regional and/or pan-Mediterranean research actions. There was a general consensus at the Symposium to establish a series of Working Groups to coordinate the human and resources in order to provide the needed general view on the coralligenous/maërl assemblages these gaps.

I.2. Distribution

4. Coralligenous buildups and maërl beds are common all around the Mediterranean coasts, even in the easternmost coasts (Giakoumi et al. 2013, Martin et al. 2014). The coralligenous habitats are abundant in the Adriatic, Aegean and Thyrrenian Seas as well as in the Algero-Provençal Basin. The coralligenous is less abundant in the Levantine Sea and Tunisian Plateau/Gulf of Sidra (Martin et al. 2014). Overall, data available cover approximately 30% of the Mediterranean coasts while for the remaining 70% no information was found (Martin et al. 2014). Regarding the depth distribution, most information concern the 10 to 50 m depth less information exists for the deeper range of distribution of coralligenous 50-200 m depth. Besides these large-scale assessments on distribution, at local scale some progress cartographical data have been acquired in some areas specially in marine protected areas (e.g. Réserve Naturelle de Scandola, Parc National de Zembra, Area Marina Protetta di Tavolara Punta Coda Cavallo, Zakynthos Marine Protected Area). Overall, we lack of a complete and precise distribution information on coralligenous and other calcareous bioconstructions habitats.
5. The main constrains to the provide a global view on the distribution of coralligenous and other calcareous habitats are the (a) their intrinsic heterogenous distribution related with the spatial patterns of the geophysical and oceanographic conditions allowing their development, and 2) the technical and financial constraints of mapping field operations resulting in an unbalanced mapping efforts across the Mediterranean.
6. Geographical as well as depth distributional data are essential in order to know the real extent of these assemblages in the Mediterranean Sea as well as to implement appropriate management measures to guarantee their conservation.

I.3. Composition

7. Coralligenous concretions are the result of the building activities of algal and animal builders and the physical as well as biological eroding processes. The final result is a very complex structure composed of several microhabitats. Environmental factors (i.e., light, water

movement and sedimentation rates) can vary by orders of magnitude in parts of the same concretion situated very close to each other. This great environmental heterogeneity allows several different assemblages to coexist in a reduced space. Assemblages situated in open waters (from horizontal to almost vertical surfaces) can be easily distinguished from those situated in overhangs and cavities.

8. Algae usually dominate in horizontal to sub-horizontal surfaces although their abundance decreases with decreasing irradiance. Two main algal communities have been distinguished in the western Mediterranean: an assemblage dominated by *Halimeda tuna* and *Mesophyllum alternans* (*Lithophyllo-Halimedetum tunae*), thriving in relatively high light levels, and an assemblage dominated by encrusting corallines (*Lithophyllum frondosum*, *L. cabiochae*, *Neogoniolithon mamillosum*) and *Peyssonnelia rosamarina* (*Rodriguezelletum strafforelloi*), and receiving low light levels.
9. Animal assemblages can greatly differ according to light levels reaching the coralligenous outcrop but also in relation to current intensity, sedimentation rates and geographical areas. In the richest, relatively more eutrophic zones, with rather constant and low water temperature, gorgonians usually dominate the community, but they are completely absent or rare in the more oligotrophic or low-current areas with rather high or seasonally variable temperature, being replaced by sponges, bryozoans or ascidians.
10. Maërl beds are also very diverse. Even if corallines are the main constituents (*Spongites fruticosus*, *Lithothamnion corallioides*, *Phymatolithon calcareum*, *Lithothamnion valens*, *Lithothamnion minervae*, *Lithophyllum racemus*, *Lithophyllum frondosum*, and others), *Peyssonnelia* species (mainly *Peyssonnelia rosa-marina*) can also be very important. The cover of erect algae depends on each particular site, displaying several facies (*Osmundaria volubilis*, *Phyllophora crispa*, Kallymeniales, *Laminaria rodriguezii*).
11. The group of experts in Tabarka suggested using the Reference List of Habitat types appearing in the Standard Data-entry Form (SDF) for National Inventories when looking for the composition of coralligenous assemblages. In 2011 a list of species to be considered in the inventory and/or monitoring of coralligenous communities was provided by UNEP-SPA/RAC (2011)¹. The species were arranged in the following categories:
 - Algal builders
 - Animal builders
 - Agglomerative' animals
 - Bioeroders
 - Species of particular importance (particularly abundant, sensitive, architecturally important or economically valuable)
 - Invasive species
12. The characterization of coralligenous based on the above-mentioned categories list can greatly help in our understanding on the coralligenous patterns across the Mediterranean. Since different regions and areas within regions are characterized by different composition, the assessment considering the proposed morpho-functional categories can provide an interesting comparative basis towards a general view on Mediterranean coralligenous assemblages. This approach besides the composition data would provide a functional perspective which greatly facilitate the development of indicators for the monitoring of the Good Environmental Status (GES) within the Marine Strategy Framework Directive and "COP18 EcAp Decision" (see Legislation and regulation section).

¹ Proposal of standard methods for inventorying and monitoring coralligenous and rhodoliths populations UNEP-MAP-RAC/SPA (2011)

13. The suggestion when describing the composition of the coralligenous assemblages or the maërl beds would be to provide quantitative or semi-quantitative estimate on the abundance of typical/indicator species. Different visual and photographic methods as well as the combination of both have been proposed to obtain abundance estimates. For instance, the adoption of Braun-Blanquet (1979) methodology for marine assemblages characterization (Cebrian & Ballesteros, 2004). Through these assessments besides composition data, the abundance estimates of species found in the considered categories would provide insights in the ecological/conservation status of assemblages. For instance, the presence of invasive species (either alien or not normally occurring in the habitat) are often considered very good indicators of poor conservation status.
14. For maërl beds assemblages the same approach could be addressed although the current knowledge need to be improved to better define the categories and composition lists. In maërl beds, description is also possible naming the main maërl species and erect algae, as well as the main macroinvertebrates.

II. Data collection and inventories

II.1. Specific inventories

15. As mentioned the coralligenous habitat includes several assemblages due to its great heterogeneity. There is a small scale heterogeneity in environmental factors throughout the coralligenous outcrops that determine different micro-habitats containing different species. In the surface of coralligenous outcrops, coralline algae usually dominate, together with a variable amount of erect algae and of suspension-feeders. Holes and cavities within the coralligenous structure sustain complex communities without algae and dominated by suspension-feeders. Small crevices and interstices are inhabited by a diverse endofauna, while many vagile species swarm everywhere, thriving also in the small patches of sediment retained by the framework. Large fishes (e.g. *Epinephelus marginatus*, *Scorpaena scrofa*, *Phycis phycis*) and decapods (e.g. *Palinurus elephas*, *Homarus gammarus*) dwell in the coralligenous assemblages. One of the consequences of this great environmental heterogeneity is the presence of a high biodiversity and a wide array of organisms in each coralligenous outcrops.
16. Maërl beds are considerably less complex than coralligenous outcrops although they have some epiflora and epifauna that are more related to plants and animals usually found in rocky substrata, but also they harbour typically invertebrates from sedimentary bottoms.
17. A considerable amount of research has been done on the biodiversity hosted by coralligenous outcrops. Ballesteros (2006) estimates a preliminary account of up to 1666 species at the scale of the Mediterranean Sea. However these estimates are far from providing us a general view of biodiversity dwelling in the coralligenous assemblages. There are at least two levels of information which should be considered i) in fine detailed taxonomic studies specially in less studied groups and ii) comprehensive biodiversity surveys in targeted geographical areas. This information would be complemented by the determination of typical/indicator species of coralligenous in different areas/regions across the Mediterranean (see Point 1.3. Composition).
18. Overall with this information we could improve the estimates on the total number of species associated to the coralligenous and analyze geographical variability biodiversity patterns considering different spatial scales. The same approach should be adopted for maërl beds.
19. Methods. For data collection several methodologies have been used in sampling rocky benthic systems and maërl beds (e.g. Bianchi *et al.*, 2004, Kipson *et al.* 2011, Cechi *et al.* 2010, Gatti *et al.* 2015) and all of them present advantages and disadvantages. Moreover, suitability of

each sampling method depends on the purposes of the study and on the taxonomic group considered.

20. As no sampling methodology can be universally applied, a general recommendation when making the assessments on species composition is to take into account the following considerations:

- Use quantitative or semi-quantitative surveys instead of qualitative surveys wherever possible.
- Clearly state the sampling and quantification methodology, including the period of the year, in order that it could be repeated in the future by independent teams for further comparison of data.
- Samples have to be geographically positioned in the most accurate way.
- Sampling has to be representative. Therefore, sampling areas should be larger than minimal sampling areas. It has to be noted that different taxonomic groups must be sampled using completely different representative areas.
- Use photographic surveys to help in the identification of species

II.2. Sites of particular interest

21. Since the coralligenous and maërl assemblage in general thrive in deep waters, it is difficult to have an appropriate coverage of all the entire distribution range of the assemblage. Thus, it is recommended that inventories and monitoring be performed in selected sites of particular interest. The sites selection should be based in the most accurate previous information on the distribution, extension and ecological features and conservation status of coralligenous and maërl assemblages.

22. Amongst the criteria to be used in this selection, it is recommended the following ones:

- Existence of previous information on coralligenous assemblages or maërl beds at the site or, if there is no available information at all, sea bottom geomorphological features suitable for the development of coralligenous frameworks and/or rhodolites.
- Representatively of the coralligenous assemblages/maërl beds at a wide geographical area, whenever it is possible, according to present knowledge.
- Existence of control and/or management of anthropic activities at the site. In this sense, marine protected areas are suitable places to be selected.
- Especially healthy coralligenous and maërl assemblages are worth to be selected in order to assess the reference conditions.
- Coralligenous communities and maërl beds under the effects of direct or indirect anthropogenic disturbances are worth to be selected in order to assess the impact conditions.

III. Monitoring activities

23. Even if coralligenous/maërl assemblages are characterized by very slow dynamics (Garrabou *et al.*, 2002, Teixidó *et al.* 2011), at least in the absence of punctual catastrophic disturbances (Teixidó *et al.* 2013), develop monitoring activities is of great interest to track their conservation status and detect changes associated to press and punctual human related disturbances as well as due to natural processes.

24. Monitoring is necessary to understand the processes behind long-term dynamics in the assemblages and is a central element for the implementation and evaluation of efficient management plans. Besides the monitoring activities on coralligenous assemblages are required for the implementation of European Marine Strategy Framework Directive (MSFD

2008/56/EC) and the Convention of Barcelona Decision² (see Legislation and regulation section) seeking to maintain the Good Environmental Status of assemblages.

III.1. Types of monitoring

25. The basic scheme of surveillance includes periodic monitoring of reference parameters (indicators) informing about the conservation status of coralligenous / maërl assemblages. The monitoring should be designed to be as simple as possible. Neither standard methods have been proposed nor environmental or ecological quality indexes have been established yet for the coralligenous assemblages.
26. Due the heterogeneity and habitat complexity monitoring should be conducted by a combination of methods to gather habitat, species and degree of impacts data.
27. Monitoring parameters should provide information on:

Structural and functional parameters of assemblages:

- Species/Categories composition/abundance (semi- or quantitative data)
- Indicators on the degree of complexity of coralligenous habitats
- Indicators on coralligenous functioning: bioeroders and bioconstructors
- Qualitative, semi- and quantitative indicators on the impacts of different disturbances on coralligenous communities (e.g. presence of fishing nets, invasive species, high diving pressure)

Environmental parameters

-Temperature, sedimentation

III.2. Monitoring methods

III.2.1. General Considerations for sampling strategies for monitoring schemes

28. Bearing in mind the depth distribution of coralligenous / maërl assemblages monitoring methods have to be adapted to limited bottom working time by scuba divers (due to long decompression times and limitation of diver performance in deep waters; Tetzaff & Thorsen, 2005; Germonpre, 2006) and the limitation of the use of Remote Operate Vehicles (ROVs) beyond the operational depth of scuba divers (0-40m).

III.2.2. Spatial scales.

29. The high scale heterogeneity of coralligenous outcrops which implies a large sampling area to be representative (Ballesteros, 2006). At present, some studies have determined the minimum sampling areas in some assemblages (Kipson et al. 2011), similar approaches should be carried out in other coralligenous morpho-types. In general, in order to gather relevant data on the different indicators in each monitoring site the total sampling area (including different replication strategies) should cover about 5 to 30 m² (Deter et al. 2012, Garrabou et al. 2014, Gatti et al. 2015).
30. At each site, determine a specific depth range were the monitoring will be carried out (e.g. 30-35 m), in order to avoid the potential effect of depth in the outcome of the surveys. Within the depth range selected, in order to limit the effects of local heterogeneity on the outcome of the

² Decision IG.21/3 on the Ecosystems Approach including adopting definitions of Good Environmental Status (GES) and targets

surveys, determine when possible, with the help of remarkable seascape marks, the specific monitoring area (e.g. it should be an area of several 100 m²) of each sampling site. Eventually some marks can be fixed to help the sample in the same monitoring area. Finally, in each targeted geographic areas several sites should be monitored in order to better infer the conservation trends of assemblages.

31. When selecting monitoring sites one should keep in mind the existence of previous information on the extension and ecological quality of the coralligenous habitat. During selection process, it is recommended to consider the following questions:
 - Is there previous information available on coralligenous assemblages at the site or, if there is no available information at all, are the sea bottom geomorphological features suitable for the development of coralligenous frameworks?
 - According to the present knowledge, are considered coralligenous assemblages representative for a wider geographical area?
 - Are considered coralligenous assemblages especially healthy to be able to serve as reference points?
 - Are considered coralligenous assemblages under some clearly recognizable direct or indirect anthropogenic disturbance that would allow the assessment of the impact of these disturbances?

III.2.3. Temporal scales.

32. The low dynamic of coralligenous assemblages (Garrabou *et al.*, 2002, Casas *et al.* 2015) allows to set the sampling periodicity between 3-5 years for monitoring purposes. Regarding the period of monitoring, the ideal period is late summer (late August to early October). At that time water transparency and temperature allow better performances on data gathering and photosampling. In addition, if any mass mortality occurred during summer it can be observed in this period.

III.2.4. Sampling techniques

33. During the last years different approaches have been adopted for the assessment of conservation status of coralligenous assemblages using visual and/or photographic surveys (e.g. Cormaci *et al.*, 2004, Kipson *et al.* 2011, Deter *et al.* 2012, Garrabou *et al.* 2014, Gatti *et al.* 2015). The sampling approaches developed are based in non-destructive methods aiming to furnish rapid quantitative and semi-quantitative assessments of different parameters.
34. The basic parameters assessed by photographic sampling and visual census are abundance (e.g. coverage, density) of species found in the assemblages and estimations on the degree of impact of different key processes (e.g. mortality events, bioerosion, fishing) related with the conservation of coralligenous assemblages.
35. Monitoring of environmental parameters is also needed if we want to relate changes in the coralligenous/maërl assemblages with disturbances related to hydrographic conditions. The most important variables to be monitored are: water temperature, sedimentation rates, nutrient concentration in seawater, particulate organic matter and water transparency.
36. Different initiatives (this Action Plan and EU directives) are focused in the development of indicators about the conservation and good environmental status of coralligenous. Through the monitoring activities presented we could obtain useful indicators (See Annex). These indicators are intended to inform decision makers and stakeholders and to support conservation and management planning (including MPAs network design) to guarantee the conservation of the coralligenous habitat.
37. Standardized protocols for the characterization of coralligenous/maërl assemblages needs to be developed. The main goal of this Action would be to do a comparative evaluation of the

tools and sampling designs to be applied for the characterization of coralligenous habitats (e.g. in terms of species diversity (α , β , γ), structural complexity and main ecological processes) and to assess the level of impact of human pressures.

38. Indices and/or intercalibration initiatives to determine conservation environmental status of coralligenous should be developed to analyze the available indices developed to determine the Good Environmental Status of coralligenous to provide a common framework to compare the status of coralligenous across the Mediterranean.

IV. Research activities

IV.1. Taxonomy

39. Coralligenous/maërl assemblages probably are two of the most important hot-spots of species diversity in the Mediterranean, together with *Posidonia oceanica* meadows (Ballesteros, 2006; BIOMAERL team, 2003). In comparison to the large amount of literature devoted to the study of *Posidonia oceanica* meadows, studies devoted to strengthen the knowledge of coralligenous/maërl biodiversity are scarce. Therefore, due to the rich fauna, high heterogeneity at all scales, and complex structure of coralligenous/maërl assemblages, together with the paucity of studies dealing with coralligenous/maërl biodiversity, it can be assumed that at least coralligenous assemblages harbour more species than any other Mediterranean community. The check-list proposed in the second chapter of this Action plan should cover all the species found to date in coralligenous/maërl communities. However research in taxonomy is also needed as a large amount of taxonomic groups absolutely lack not only of a comprehensive study but almost any study dealing with species which can be found in coralligenous outcrops or maërl beds. The use of genetic tools can help in resolving taxonomic “problems” and discovering cryptic species (e.g. Dailianis et al. 2014).
40. Taking into account the current knowledge of biodiversity in coralligenous/maërl communities (Ballesteros, 2006), the following taxonomic groups need an important investment in research:
 - Copepods
 - Cumaceans
 - Isopods
 - Molluscs
 - Mysids
 - Nematods
 - Nemertean
 - Ostracods
 - Phyllocarids
 - Polychaeta
 - Pycnogonids
 - Tanaidaceans
41. Further research in other groups is also acknowledged, as it will surely provide new reports of species for coralligenous outcrops and maërl beds.

IV.2. Long term evolution

42. To understand long-term dynamics of coralligenous assemblages in some selected areas sentinel/reference sites should be setup. Processes taking place in coralligenous communities in absence of disturbances usually display slow dynamics – i.e. decades – (Garrabou *et al.*, 2002). Population dynamics of outstanding and key species show low growth rates and low population dynamics (e.g. Coma *et al.* 1998, Teixidó *et al.* 2011). Therefore, even if some of

the patterns and processes that have been described so far occur in short time periods (e.g. mortality events; Cerrano *et al.*, 2000; Garrabou *et al.*, 2009), evolution of coralligenous can only be understood from a long-term perspective. Maërl beds are even less known as there are no comprehensive revisions in this subject regarding Mediterranean rhodolits.

43. Sentinel/reference sites are recommended to be visited once a year to obtain a robust temporal series. Even if seasonality in coralligenous/maërl communities is not as important as it is in shallower environments (Ballesteros, 2006, Garrabou *et al.* 2002), the monitoring is recommended to be always performed at the same period of the year in order to facilitate comparisons between years and sites.
44. These sites should be selected according to (1) their representativeness at a large geographical scale, (2) their accessibility and (3) the logistical facilities that may contribute to guarantee and facilitate the monitoring operations. We recommend the setup of sentinel/reference sites in fully protected zones within Marine Protected Areas. MPAs offer excellent facilities for long-term studies and are optimum conditions to approach to the “pristine” functioning of coralligenous assemblages. This precious information would serve as reference for guiding the adoption of conservation and management goals at different international and national levels.

IV.3. Functioning

45. Special care is to be taken for the study of the functioning of particular associations and species. Specifically, long-lived plants and animals that usually are the engineering species of the coralligenous or the most abundant calcareous algae in maërl beds, need a detailed knowledge of their growth, demographic patterns, vulnerability to disturbances and recovery capacities.
46. Research actions to fill the gaps of current knowledge should focus on (a) Bioconcretion dynamics (building and erosion processes); (b) Population dynamics of typical/indicator species; (c) Establish response of key/typical species to different stressors

V. Conservation activities

V.1. Major Threats

47. Major threats affecting coralligenous/maërl communities roughly coincide with threats affecting Mediterranean marine biodiversity and are listed in the Strategic Action Program for the Conservation of Biological Diversity (SAP BIO). However, due to its special habitat and features, not all the threats listed in the SAP BIO affect coralligenous/maërl communities, but some of them are specially relevant. It follows a brief description of the main threats.

V.1.1. Trawling

48. Trawling is probably the most destructive impact currently affecting coralligenous communities. Trawling is also completely destructive in maërl beds, being the main cause of maërl disappearance in large Mediterranean areas. The action of trawling gear over coralligenous/maërl assemblages leads to the death of most engineering, dominant and builder species, completely changing the environmental conditions of the coralligenous microhabitats and from the maërl environment. As most of these species are particularly long-lived, have low recruitment and complex demographic patterns, destruction of the coralligenous/maërl structure is critical as their recovery will probably take several decades or even centuries. Trawling has also a great impact on target species that, although not as vulnerable as most suspension feeders, they also suffer from this indiscriminate method of fishing.

49. Finally, even the performance of trawling close to coralligenous outcrops or maërl beds affects negatively to algal growth and suspension-feeding due to an increase in turbidity and sedimentation.

V.1.2. Artisanal and recreational fishing

50. Both traditional and recreational fishing also have an effect on coralligenous communities, although they mainly affect the target species. Fishing leads to a significant decrease in mean specific number of fish species, producing changes in the community composition. Certain fishes, mainly elasmobranchs, are severely decimated by artisanal fishing practices when fishing pressure is outstanding. This is the case, for example, of several small sharks such as *Scyliorhinus stellaris*, *Mustelus* spp. or *Squalus* spp. In several places, other species such as groupers and lobsters (e.g. *Epinephelus marginatus* and *Palinurus elephas*) need the implementation of adequate fishery management. Besides, fishing activities can degrade habitat complexity due the breakage and mortality of fragile macrobenthic species during contact with fishing lines and nets (Bavestrello et al. 2000). The consequent erosion of complexity results from the reduction in the abundance and/or size of large gorgonian and other erect species (e.g. *Axinella* spp., *Hornera frondiculata*) (Tunési et al., 1991). The reduction of complexity could infer further biodiversity loss, however the extent of this impact and the associated mechanisms are still poorly understood (Cerrano et al. 2010).
51. Special care has to be taken with the commercial exploitation of red coral (*Corallium rubrum*), whose stocks have strongly declined in most areas. Adequate management of this extremely valuable and long-lived species is necessary.

V.1.3. Anchoring

52. Anchoring has a very severe impact in coralligenous concretions, as most of the engineering organisms are very fragile and are easily detached or broken by anchors and chains. Coralligenous concretions of frequently visited sites by recreational fishing or diving activities are degraded by the destructive potential of anchors.

V.1.4. Invasive species

53. Currently, at least three algal species are threatening coralligenous/maërl communities in the Western Mediterranean: *Womersleyella setacea*, *Acrothamnion preissii*, *Caulerpa racemosa* v. *cylindracea* and *Caulerpa taxifolia* (e.g. Cebrian et al. 2012, De Caralt & Cebrian 2013, Cebrian & Rodríguez-Prieto 2012). All of them are only invasive in relatively shallow water coralligenous outcrops and maërl beds (until 60 m), where irradiance levels are sufficient to permit their growth. However, they are especially dangerous, because they completely cover the basal stratum of encrusting corallines and increase sedimentation rates which lead to a total shut down of coralligenous growth or the survival of rhodolits. Most studies have been carried in the Western Mediterranean. There is an absolute lack of knowledge on the effects that lessepsian species have on coralligenous/maërl communities in the Eastern Mediterranean.

V.1.5. Global warming

54. Anomalous high water temperatures were concomitant with large scale mortalities of several suspension feeders (mainly sponges and anthozoans) growing in coralligenous assemblages (Cerrano et al., 2000; Garrabou et al. 2009). Thus, it is expected that under the current trend of global warming (Somot et al. 2008), coralligenous assemblages will be affected by new mortality events during next decades especially in areas where coralligenous assemblages are situated above the summer level of the thermocline.

V.1.6. Waste water discharges

55. Waste waters profoundly affect the structure of coralligenous communities by inhibiting coralline algal growth, increasing bioerosion rates, decreasing species richness and densities of the largest individuals of the epifauna, eliminating some taxonomical groups and increasing the abundance of highly tolerant species (Hong, 1980, 1982; Cormaci *et al.*, 1985; Ballesteros, 2006). Although no information is available on the impact of eutrophication in Mediterranean maërl beds, the effects must be similar to those reported for coralligenous concretions.

V.1.7. Aquaculture

56. Although there are no studies on the impact of aquaculture facilities situated over or at the proximity of coralligenous outcrops, nor maërl beds, their effects should match those produced by waste water dumping.

V.1.8. Changes in land use and coastal infrastructure construction and urbanization

57. Most anthropogenic changes in coastal areas or at their vicinity involve an increase in water turbidity and/or sediment removal that affect coralligenous/maërl communities.

V.1.9. Recreational activities (excluding fishing)

58. Uncontrolled or over-frequentation of divers in coralligenous communities has been described to produce an important effect over certain large or fragile suspension feeders inhabiting coralligenous communities (Sala *et al.*, 1996; Garrabou *et al.*, 1998; Coma *et al.*, 2004; Linares *et al.* 2012).

V.1.10. Mucilaginous and filamentous algal aggregates

59. Blooms of mucilaginous and filamentous algal aggregates can cause severe damage over erect suspension feeders (mainly gorgonians). These blooms are still not well understood but they are apparently caused by eutrophication (Giuliani *et al.* 2005, Danovaro *et al.* 2009).

V.2. Legislation and regulations

60. Coralligenous/maërl assemblages should be granted legal protection at the same level as *Posidonia oceanica* meadows. A first step would be the inclusion of coralligenous concretions and maërl beds as a priority natural habitat type in the EU Habitats Directive (92/43/EEC), which would enable EEC countries to undertake surveillance of the conservation status of coralligenous/maërl assemblages and also to set an ecological network of areas of conservation (LICs/ZECs) hosting coralligenous/maërl assemblages, which would ensure their conservation or restoration at a favorable conservation status. Although *Phymatolithon calcareum* and *Lithothamnion corallioides* are present in the Annex V of the Habitats Directive and as such they should be provided by management measures in case of exploitation (which is never the case in the Mediterranean), there is no specific protection for maërl beds. Similar actions should be encouraged in non-EEC countries through the existing tools of the Barcelona Convention.
61. Regarding again European countries, recently (21 December 2006), it was published a Council Regulation (EC) No 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94 which states that “Fishing trawl nets, dredges, shore seines or similar nets above coralligenous habitats and maërl beds shall be prohibited” (Article 4.2) and that this prohibition “shall apply to all Natura 2000 sites, all special protected areas and all specially protected areas of Mediterranean interest (SPAMI)

which have been designated for the purpose of the conservation of these habitats under either Directive 92/43/EEC or Decision 1999/800/EEC” (Article 4.4).

62. In 2008 the European Union adopted the Marine Strategy Framework Directive (MSFD 2008/56/EC) which requires to maintain European marine waters in “Good Environmental Status” (GES). The MSFD included 11 descriptors for the assessment of GES among them the Sea-floor Integrity is defined as “Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.” (Rice et al. 2012). This descriptor directly concerns biogenic structures such as the Mediterranean coralligenous and different initiatives are underway to determine the GES of coralligenous habitats (e.g. Gatti et al. 2015). The monitoring of different indicators (such as those indicated in this document and other proposed by other authors) should allow determining reference conditions at regional scales and the proposal of a quantitative index to evaluate the GES in each area. The final aim of MSFD is to guide management and conservation actions for maintaining and when necessary recover the good environmental of waters.
63. In line with the MSFD, the contracting parties to the Barcelona Convention set targets for achieving GES of the Mediterranean Sea and its coastal zone by 2020. In achieving these targets it has been recognized the importance to apply the ecosystem approach (EcAp) to the management of human activities that may affect the Mediterranean marine and coastal environment for the promotion of sustainable development (UEP/MAP 2007). In addition, through Decision IG 21/3 (the so-called “COP 18 EcAp Decision”) the contracting Parties agreed to design an Integrated Monitoring and Assessment Program for the next meeting of the contracting parties (COP19) and mandated the Secretariat to carry out an assessment of the state of the Mediterranean environment in 2017 which necessarily will include the coralligenous/maërl habitats (UNEP/MAP, 2013).

V.3. Creation of Marine Protected Areas

64. Within the Convention on Biological Diversity (CBD) countries have committed to protect by 2020 “10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and the effective area-based conservation measures“ (Target 11 of the Aichi Strategic Plan for Biodiversity 2020) and the Roadmap for a comprehensive coherent network of well managed MPAs to achieve Aichi Target 11 in the Mediterranean. Overall, only about 1% of Mediterranean coastal waters susceptible to harbor coralligenous/maërl assemblages are protected.
65. Most present Mediterranean MPAs are devoted to protect *Posidonia oceanica* meadows and other shallow water assemblages, in such a way that the percentage of coralligenous/maërl habitat currently protected in the Mediterranean is extremely low. Thus, it is necessary to protect representative coralligenous/maërl assemblages by applying the protection and management measures recommended by Articles 6 and 7 of the SPA/BD protocol. In fact, Marine Protected Areas (MPAs) have to be established taking into account the seascape diversity and trying to include places with several relevant assemblages, as has been already applied in the creation and zonation of some MPAs (Villa *et al.*, 2002; Di Nora *et al.*, 2007).
66. Countries have to identify and cartography as soon as possible sea bottoms covered by coralligenous outcrops and maërl beds in order to design a network of MPAs that enables the protection of coralligenous/maërl assemblages.

67. Those Mediterranean MPAs, which contain coralligenous/maërl assemblages and for which management and monitoring plans have not yet been developed and implemented, must develop and implement such plans as soon as possible.

V.4. National plans

68. To ensure more efficiency in the measures envisaged in the implementation of this Action Plan, Mediterranean countries are invited to establish national plans for the conservation of Coralligenous and other calcareous bio-concretions. Each national plan should take into account the concerned country's, or even areas', specific features. It must suggest appropriate legislative measures, particularly for the environmental impact assessment of coastal infrastructure (building works, pipelines out to sea, and deposits of material from dredging) and to control activities which could affect coralligenous/maërl assemblages. The national plan shall be based on the available scientific data and will include programmes for (i) collection and regular updating of data, (ii) training and refresher courses for specialists, (iii) awareness-raising and education for the general public, actors and decision-makers and (iv) the conservation of coralligenous/maërl assemblages of importance for the Mediterranean marine environment. The national plans must be brought to the attention of all concerned actors and, when possible, coordinated with the relevant national plans (e.g. emergency plan to deal with pollution).

VI. Coordination of this Action plan with other tools and initiatives

69. The Standard Data Form (SDF), developed by SPA/RAC, can be used to identify potentially good sites for the establishment of MPAs devoted to protect coralligenous/maërl assemblages. Besides the analysis of current data on the distribution of coralligenous assemblages along with information derived from distribution modelling tools can help guiding cost-effective future surveys and monitoring efforts towards the development of basin-wide marine protected areas network for coralligenous/maërl assemblages (Martin et al. 2014).
70. However the SDF is not appropriate to be used in the monitoring of coralligenous/maërl assemblages since it has been designed for the inventory of sites and habitats but not for an accurate assessment of multi-species population densities and their evolution. Annex B (habitat types) from the SDF should be slightly modified in the point IV.3.1 (Coralligenous biocenosis), according to current knowledge. Species appearing in Annex C should be slightly enlarged in order to include several engineering coralligenous species according to the adopted criteria for amendments of the Annexes (II & III) of the Protocol SPA-BD.
71. MPAs classified as SPAMIs and containing coralligenous/maërl assemblages inside their protected areas should develop management and protection plans to ensure their conservation.

VII. REGIONAL COORDINATION STRUCTURE

72. Regional coordination of the implementing of the present Action Plan will be guaranteed by the Mediterranean Action Plan's (MAP) secretariat through the Regional Activity Centre for Specially Protected Areas. The main functions of the coordinating structure shall consist in:
- collecting, validating and circulating data at Mediterranean level;
 - promoting the drawing up of inventories of species, coralligenous/maërl assemblages of importance for the Mediterranean marine environment;
 - promoting trans-boundary cooperation;
 - promoting and supporting the setting up of coralligenous/maërl assemblages monitoring networks;

- preparation of reports on progress in the implementation of the Action Plan, to be submitted to the meeting of national focal points for SPAs and to meetings of the Contracting Parties;
- organizing meetings of experts on specific subjects relating to coralligenous/maërl assemblages and training sessions.

73. Complementary work done by other international organizations, and aiming at the same objectives, shall be encouraged, promoting coordination and avoiding possible duplication of efforts.

VIII. PARTICIPATION IN THE IMPLEMENTATION

74. Implementing the present Action Plan is the province of the national authorities of the Contracting Parties. The concerned international organizations and/or NGOs, laboratories and any organization or body are invited to join in the work necessary for implementing the present Action Plan. At their ordinary meetings, the Contracting Parties may, at the suggestion of the meeting of National Focal Points for SPAs, grant the status of "Action Plan Associate" to any organization or laboratory which so requests and which carries out, or supports (financially or otherwise) the carrying out of concrete actions (conservation, research, etc.) likely to facilitate the implementation of the present Action Plan, taking into account the priorities contained therein.

75. The coordination structure shall set up a mechanism for regular dialogue between the participating organizations and, where necessary, organize meetings to this effect. Dialogue should be made mainly by mail, including E-mail.

ANNEX: IMPLEMENTATION TIMETABLE

Action	Deadline	to be implemented by
1. Build and publish the database of scientists and research institutions working on the coralligenous assemblages and maërl beds.	2016	SPA/RAC
2. Guidelines for the assessment of environmental impact on coralligenous/maërl assemblages		
3. Development of Working Groups on coralligenous assemblages and maërl beds.	2016	SPA/RAC- Contracting Parties
4. Build-up a coralligenous/maërl assemblages distribution on line database	2018	SPA/RAC- Contracting Parties
5. Improve habitat modeling methods could provide new predictive models on coralligenous distribution and guide cost-effective field surveys for data acquisition	2017	Contracting Parties
6. Characterization of coralligenous habitats at regional scale	2018	SPA/RAC- Contracting Parties
7. Build-up a Check-list / Reference species list for the coralligenous assemblages	2016	SPA/RAC
8. Development of standardized protocols for the characterization of coralligenous /maërl assemblages.	2017	SPA/RAC- Contracting Parties
9. Development of indices and/or intercalibration initiatives to determine conservation environmental status of coralligenous	2017	SPA/RAC- Contracting Parties
10. Set a network of sentinel sites on coralligenous across the Mediterranean	2020	SPA/RAC- Contracting Parties
11. Promote research programs on coralligenous assemblages and maerl beds	2016	Contracting Parties
12. Develop and implement legislation initiatives for the conservation of coralligenous assemblages	Ongoing	Contracting Parties
13. Coordinate the design of an Integrated Monitoring and Assessment Program for the assessment of the state coralligenous/maërl assemblages in view to be included the assessment of the state of the Mediterranean	2016	Contracting Parties
14. Promote the declaration of marine protected areas to preserve coralligenous assemblages in coastal and offshore areas	2018	SPA/RAC- Contracting Parties
15. Build-up a coordination platform on different initiatives devoted to the coralligenous/maërl assemblages	2017	SPA/RAC
16. Organize a Symposium on coralligenous assemblages and maërl beds every 3 years	2018	SPA/RAC
17. Preparation of a communication plan to raise the awareness on the importance of coralligenous assemblages and maërl beds for the conservation of Mediterranean biodiversity	2017	SPA/RAC

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ANNEX III
**Updated Action Plan concerning Species Introductions and Invasive Species
in the Mediterranean Sea**

INTRODUCTION

1. In 1975, 16 Mediterranean countries and the European Community adopted the Mediterranean Action Plan (MAP), the first-ever Regional Seas Programme under UNEP's umbrella. In 1976 these Parties adopted the Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention). Seven Protocols addressing specific aspects of Mediterranean environmental conservation complete the MAP legal framework.

2. In 1995, the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II) was adopted by the Contracting Parties to replace the Mediterranean Action Plan of 1975. At the same time, the Contracting Parties adopted an amended version of the Barcelona Convention of 1976, renamed Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.

3. Currently, MAP has been adopted by 21 countries bordering the Mediterranean Sea, and the European Union. The 22 Contracting Parties to the Barcelona Convention give priority to the conservation of the marine environment and to the components of its biological diversity. This has been confirmed on several occasions, particularly by the adopting (Barcelona, 1995) of the new Protocol concerning specially protected areas and biological diversity in the Mediterranean (SPA Protocol) and of its Annexes.

4. The SPA Protocol invites the Contracting Parties to take “all appropriate measures to regulate the intentional or non-intentional introduction of non-indigenous or genetically modified species into the wild and prohibit those that may have harmful impacts on the ecosystems, habitats or species” (Article 13.1).

5. For established alien³ species, the SPA Protocol stipulates that “the Parties shall endeavour to implement all possible measures to eradicate species that have already been introduced when, after scientific assessment, it appears that such species cause or are likely to cause damage to ecosystems, habitats or species” (Article 13.2).

6. The Convention on Biological Diversity calls on in its Article 8 (h) each Contracting Party, as far as possible and as appropriate “to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species”. In the tenth meeting of the Conference of the Parties, held from 18 to 29 October 2010, in Nagoya, Aichi Prefecture, Japan, a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period, was adopted. According to Aichi Target 9, “By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.”

7. Aichi Target 9 is reflected in Target 5 of the EU Biodiversity Strategy (European Commission COM/2011/244). Furthermore, the new EU Regulation (No 1143/2014) on the prevention and management of the introduction and spread of invasive alien species is a dedicated instrument to mitigate the impacts of biological invasions in Europe. The European Commission, European countries, and their relevant authorities will have, under the new EU legislative instrument, obligations and commitments in respect to invasive alien species (IAS). These include prioritising pathways for prevention, identifying the most harmful species for responses (list of species of EU concern), enforcing effective early warning and rapid response mechanisms for the IAS of EU concern, eradicating such species at an early stage of invasion, and taking management measures for IAS that are widely spread. In addition, the EU Marine Strategy Framework Directive (2008/56/EC) recognises alien marine species as a major threat to European biodiversity and ecosystem health, requiring Member States to consider them when developing strategies so that all European Seas reach Good

³Synonym of ‘non-indigenous’. The term alien is adopted herein as it is the term currently mostly used by the scientific community and recent legislation (e.g. the new EU Regulation No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species)

Environmental Status by 2020. The European Alien Species Information Network (EASIN)⁴ was launched in 2012 by the European Commission to facilitate the exploration of existing alien species information and to assist the implementation of the new Regulation and the other EU policies on biological invasions.

8. The trend of new introductions of alien species in the Mediterranean has been increasing. About 1000 marine alien species have been reported in the Mediterranean Sea up to now, of which more than half are considered established⁵. Many of these species have become invasive with serious negative impacts on biodiversity, human health, and ecosystem services.

9. There are many routes and mechanisms by which new alien species arrive in the Mediterranean Sea. Identification and assessment of the pathways of introduction is essential for predicting future trends of new introductions, identifying management options to mitigate invasions and to prevent new introductions, and communicating related risks and costs to policy makers and high level administration.[More than half of the marine alien species in the Mediterranean were probably unintentionally introduced through the Suez Canal. Shipping (by means of ballast waters and hull fouling) is the second most important pathway, followed by aquaculture and trade in live marine organisms (e.g. aquarium trade, fishing bait). The same vectors and some additional ones (e.g. fishing activities) may facilitate secondary introductions within and outside the Mediterranean].

10. In the Mediterranean Sea, despite the variability in monitoring and reporting effort among countries and the gaps in our knowledge of alien species distribution, there is an enormous amount of information scattered in various databases, institutional repositories, and the literature. By harmonizing and integrating information that has often been collected based on different protocols and is distributed in various sources, the needed knowledge basis to assess the distribution and status of marine alien species can be built.

11. Elaborating and implementing action plans to confront the threats to biological diversity is an effective way of guiding, coordinating and stepping up the efforts made by the Mediterranean countries to safeguard the region's natural heritage. The invasive alien species, including as a side effect of climate change, are seen as being among the main threats to marine biodiversity in the Mediterranean. The adopted Ecosystem Approach (EcAp)⁶ to management of human activities with a view to conserve natural marine heritage and protecting vital ecosystem services recognises that to achieve good environmental status "non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem". It is imperative to take immediate steps to prevent the introduction of alien species, control the spread of those already introduced and endeavour to mitigate the damage they cause to the marine ecosystem including through national actions as well as regional and international cooperation ensuring the availability of means of implementation inter alia capacity building, technology transfer, on mutually agreed terms and financing. The present Action Plan is being elaborated on the basis of the existing regional and international policies on invasive

⁴<http://easin.jrc.ec.europa.eu/>

⁵ Zenetos et al. (2012). Alien species in the Mediterranean Sea by 2012. A contribution to the application of European Union's Marine Strategy Framework Directive (MSFD). Part 2. Introduction trends and pathways. *Mediterranean Marine Science* 13(2): 328–352.

⁶ The 15th Meeting of the Contracting Parties to the Barcelona Convention (COP15) decided (through Decision IG.17/5) to progressively apply the ecosystem approach (EcAp) to the management of human activities that may affect the Mediterranean marine and coastal environment for the promotion of sustainable development.

The 17th Meeting of the Contracting Parties to the Barcelona Convention (COP17) confirmed the importance given to the EcAp in the Mediterranean, and agreed (through Decision IG.20/4) on an overall vision and goals for EcAp, on 11 ecological objectives, operational objectives and indicators for the Mediterranean, adopted the timeline for implementing the ecosystem approach until 2019 and established a six-year cyclic review process of its implementation, with the next EcAp cycle to cover 2016-2021.

At the 18th Meeting of the Contracting Parties to the Barcelona Convention (COP18), targets for achieving Good Environmental Status of the Mediterranean Sea and its coastal zone by 2020 were adopted. In addition, through Decision IG. 21/3 (the so called "COP18 EcAp Decision"), the Contracting Parties agreed to design an Integrated Monitoring and Assessment Programme by the next Meeting of the Contracting Parties (COP19), and mandated the Secretariat to carry out an assessment of the state of the Mediterranean environment in 2017.

species data available; it will be adapted and updated, if necessary, to reflect the latest policies and new data available.

12. The actions advocated by the present Action Plan are to be carried out over a five year period, starting from when the Action Plan is adopted by the Contracting Parties. At the end of this period, SPA/RAC will prepare a report on the progress so far made in implementing the advocated actions, and will submit this to the National Focal Points for SPAs, who will make follow-up suggestions to the Parties.

13. Considering the world-wide scope of the issue of alien species introduction, it is important that the implementation of the present Action Plan be done in consultation and collaboration with the initiatives undertaken in this field in other regions and/or by other international organisations.

A. OBJECTIVES OF THE ACTION PLAN

14. The main objective of the present Action Plan is to promote the development of coordinated efforts and management measures throughout the Mediterranean region in order to [prevent] [minimize / limit], monitor, and control marine biological invasions and their impacts on biodiversity, human health, and ecosystem services, particularly by:

1. strengthening the capacity of the Mediterranean countries to deal with the issue of alien species, within the framework of the EcAp;
2. supporting a regional information network for the efficient exploitation of alien species data and to support the regional policies on biological invasions;
3. further developing MAMIAS, an online platform for the collection, exploitation, and dissemination of information on marine biological invasions in the Mediterranean Sea to support relevant regional and international policies;
4. strengthening the institutional and legislative frameworks at the level of the countries of the region;
5. conducting baseline studies and establishing monitoring programmes, within the framework of the EcAp Integrated Monitoring and Assessment Programme, to collect reliable and pertinent scientific data that can be used for decision-making where necessary;
6. setting up mechanisms for cooperation and the exchange of information among the Mediterranean countries;
7. Elaborating guidelines and any other technical documentation.

B. PRIORITIES

B.1 At national level

15. Considering the lack of the data and knowledge necessary for impact and risk assessments, horizon scanning, and the implementation of management actions for prevention, control and eradication, priority at national level [in accordance with national laws] should be given to:

1. encouraging all necessary actions (e.g. research work, data collection, monitoring, national impact assessments, horizon scanning etc.) aimed at improving the available knowledge;
2. conducting baseline studies and establishing monitoring programmes to collect reliable and pertinent data on the distribution of alien species in the territorial waters;
3. coordinating the actions that are necessary for the regular provision of essential information for the national and Mediterranean-wide reference lists of alien species;
4. supporting, through the provision of essential information, the 'Marine Mediterranean Invasive Alien Species' (MAMIAS) database and online platform, which will include Mediterranean-wide national lists of alien species, including information on their taxonomic

classification, ecology, biology, habitats, and impacts on biodiversity, human health, and ecosystem services;

5. encouraging the implementation of scientifically-backed regionally-harmonised measures of prevention and control in particular for the high risk pathways of Non Indigenous Species (NIS);
6. developing training and raising awareness programmes on risks, legal issues, best practices, and management actions for prevention and mitigation of impacts.

B.2 At regional level

16. Considering the breadth and complexity of the issue of alien species introduction, the large amount of relevant information that remains scattered in various databases and repositories, and the need for harmonization and integration of alien-species data, priority at regional level should be given to:

1. coordinating, supporting, and updating the 'Marine Mediterranean Invasive Alien Species' (MAMIAS) database and online platform;
2. creating an active network of partners within the framework of MAMIAS for the continuous updating of the database and the early warning in case of new records of invasive species;
3. linking MAMIAS to other international networks, such as the European Alien Species Information Network (EASIN), increasing its visibility and use for the support of international policies on the management of alien invasive species;
4. elaborating and adopting at regional level guidelines intended to assist the relevant national authorities;
5. assisting national authorities to organise training on taxonomical issues, identification of target species, monitoring methods and reporting, and management practices;
6. coordinating the actions taken by neighbouring Parties to prevent and control the introduction of alien species;
7. supporting cooperation at international level.

C. ACTIONS REQUIRED TO ATTAIN THE OBJECTIVES OF THE ACTION PLAN

C.1 At national level

C.1.1. Data collection

17. The Contracting Parties are invited to assess the situation as regards the introduction of marine species and compile the available information to prepare updated national reports. The need to address the operational objectives 2.1, 2.2 and 2.3 for the implementation of the agreed EcAp should be reflected in the national reports. To this end, Contracting Parties will be assisted by SPA/RAC, if necessary. The national reports will particularly deal with:

- inventorying the alien marine species reported in the national territory, and providing the relevant documentation available;
- trends in abundance, temporal occurrence and spatial distribution in the wild of alien species, particularly invasive alien species, notably in risk areas, in relation to the main vectors and pathways of spreading of such species;
- ratio between invasive alien species and native species in some well-studied taxonomic groups (e.g. fish, macroalgae, molluscs) that may provide a measure of change in species composition;
- impacts of alien species on biodiversity, human health, and ecosystem services at national level;
- steps taken at national level to prevent and control the introduction of marine species
- the national institutional framework that governs the controlling of species introduction
- horizon scanning to identify future threats from invasive species
- participation at pertinent international initiatives, including joining international agreements and bilateral cooperation.

18. The Parties are requested to design and implement programmes for data collection, monitoring and assessment, within the framework of the EcAp Integrated Monitoring and Assessment Programme⁷, particularly of:

- the presence of alien marine species, the pathways of their introduction, and the state of their population trends, including those used in aquaculture;
- the ratio between alien and native species in some well-studied taxonomic groups (e.g. fish, macroalgae, molluscs) to provide a measure of change in species composition;
- the impact of alien species on biodiversity, human health and ecosystem services, including both negative and positive impacts.

C.1.2. Supporting MAMIAS

19. Considering the need of a comprehensive and continuously updated information system to support coordinated efforts and management measures throughout the Mediterranean region in order to prevent, control and monitor marine biological invasions and their impacts on biodiversity, human health and ecosystem services, the Parties [in accordance with national laws,] are requested to conduct a baseline study, reporting in particular:

- an inventory of all alien species in their territorial waters;
- for each species: the year of first record, the pathway of introduction (together with the level of certainty in assessing the pathway: direct evidence, most likely, possible), and the state of the population;
- georeferenced records of alien species presence and the date of each record;
- studies on the impact of the alien species at national level;
- any relevant documentation.

The baseline study should be submitted to SPA/RAC to feed MAMIAS. Reporting should follow the forms provided by SPA/RAC.

20. The baseline study should be updated annually based on the outputs of the national monitoring programmes (paragraph 18) and any new information should be submitted to SPA/RAC and made available to MAMIAS.

C.1.3. Legislation

21. Those Contracting Parties which have not yet enacted national legislation for controlling the introduction of marine species must do so as quickly as possible. All the Contracting Parties are strongly recommended to take the necessary steps to express in their national laws the provisions of the pertinent international treaties, especially the IMO Convention on the management of ballast waters, and guidelines and codes adopted on the subject within the context of international organisations⁸.

⁷ UNEP(DEPI)/MED WG.411/3

⁸ Many organisations have elaborated codes, guidelines or other tools providing technical and legal recommendations for the better control of species introductions and mitigation of their negative impacts. Those tools which are most pertinent for the Mediterranean region are:

- Guiding principles for the prevention, introduction and mitigation of impacts of alien species (elaborated within the framework of the Convention on Biological Diversity)
- Recommendation no. 57 on the Introduction of Organisms belonging to Non-Native Species into the Environment (adopted within the framework of the Bern Convention)
- The IUCN Guidelines for the prevention of biodiversity loss caused by alien invasive species
- The Code of Practice on the Introductions and Transfers of Marine Organisms (developed by the International Council for the Exploration of the Sea)
- Guidelines for preventing the introduction of unwanted aquatic organisms and pathogens from ships' ballast water and sediment discharges (adopted within the framework of the IMO)
- The precautionary approach concerning the introduction of species (developed by the FAO).

C.1.4. Institutional framework

22. A mechanism should be set up, if possible at the level of each country, to promote and coordinate the following actions:

- compiling an inventory of introduced species and assessing their pathways of introduction;
- cooperating with SPA/RAC and supporting regional initiatives, in particular supporting and updating MAMIAS;
- establishing a directory of relevant specialists and organisations;
- setting up a group of experts who will be responsible for assessing all relevant issues; regarding introduction, spatial distribution, pathways of introduction, and impacts of alien species, and analysing risks and possible consequences, in close consultation with the other Parties and relevant International Organisations
- developing relevant training programmes;
- strengthening and where necessary setting up systems to control the intentional import and export of alien marine species;
- developing and implementing risk-assessment techniques;
- promoting relevant scientific research;
- cooperating with the concerned authorities in neighbouring states regarding the detection of introduced species and risk assessment;
- participating in international initiatives on invasive species;
- promoting citizen science initiatives to support the monitoring of invasive species;
- developing programmes to raise the awareness of the general public and target groups, including decision-makers, concerning the risks associated with species introduction;

C.1.5. National Plans

23. To ensure more efficiency in the measures envisaged in the implementation of this Action Plan, Mediterranean countries are invited to establish National Plans to prevent the introduction of new alien marine species by controlling their pathways, and to mitigate their negative impact. Each National Plan, taking into account the concerned country's specific features, must suggest appropriate institutional and legislative measures. The National Plan shall be based on the available scientific data and will include programmes for (i) the collection and regular updating of data, especially for the support of EcAp (ii) the highest possible dissemination of data and relevant information, especially within the framework of MAMIAS (ii) training and refresher courses for specialists, (iii) awareness-raising and education for the general public, actors and decision-makers and (iv) coordination and collaboration with other states. The national plans must be brought to the attention of all concerned actors and, when possible, coordinated on a regional basis.

C.2 At regional level

C.2.1. Development of the MAMIAS platform

24. Considering that sufficient high quality information on alien species ecology, distribution, pathways of introduction, impacts, and effective management strategies is a prerequisite for the efficient prevention, early detection, rapid response, and management of biological invasions, a regional mechanism for collecting, harmonizing, and integrating information on alien species should be set up as part of the present Action Plan. The MAMIAS online platform will be at the core of this mechanism, and will be further developed to include:

- a comprehensive basin-wide database on all alien species with information on their taxonomic classification, establishment success, year of first introduction in the Mediterranean, years of first record in each Mediterranean country, pathways of both primary and secondary introductions, impacts on biodiversity, human health, and ecosystem services, links to factsheets and other databases with relevant information;
- for the most invasive and high-impact species, factsheets with details on their biology and ecology, diagnostic characters and field identification signs, native range, distribution maps in the Mediterranean and globally, history of its introduction, population trends,

impacts on biodiversity, human health, and ecosystem services, relevant links, and existing management measures for control or eradication;

- a user-friendly web site with online tools and web services for searching the database and extracting data;
- online mapping tools providing distribution maps of alien species in the Mediterranean Sea and possibilities to extract spatial data;
- an early warning system to issue notifications to the Parties, when there is an early new detection of invasive and high-impact species;
- online tools to produce statistics and indicators, such as trends in new introductions by pathway and trends in spatial distribution, especially to support the application of EcAp; these tools should be capable to assist the estimation of the common indicator 6 of the EcAp Integrated Monitoring and Assessment Programme⁹.

25. Considering that to effectively support international and regional policies and scientific research on biological invasions, and to efficiently use the already accumulated knowledge, there is a need for standardization, harmonization and integration of existing information systems, it is recommended that SPA/RAC will establish collaborations and close links between MAMIAS and other international information systems and organizations. An indicative list of collaborators includes:

- EASIN (European Alien Species Information Network) which is the official platform of the European Commission aiming to facilitate the exploration of existing alien species information in Europe and to assist the implementation of the European policies on biological invasions;
- the GIASI Partnership Gateway, assisting partners of the CBD to implement Article 8(h) and Target 9 of the Aichi Biodiversity Targets;
- IUCN-ISSG (Invasive Species Specialist Group of the International Union for Conservation of Nature) aiming to reduce the threat to natural ecosystems and native species by increasing awareness of invasive alien species, and of ways to prevent, control or eradicate them;
- WORMS (World Register of Marine Species) and WRIMS (World Register of Introduced Marine Species), which provide an authoritative and comprehensive list of names of marine organisms and relevant taxonomic information.

C.2.2. Training

26. To support the implementation of the present Action Plan, a regional training session should be organised in collaboration with the concerned international organisations. In particular, it will deal with the main following themes:

- Methods and protocols for impact and risk assessments, and horizon scanning regarding new introductions of alien species;
- Management measures for prevention, control and eradication of invasive alien species
- Taxonomic issues and identification of alien species;
- Monitoring methods and protocols for marine alien species.

C.2.3. Public education and awareness

27. With a view to promoting the Mediterranean countries' national programmes for raising the awareness of the general public and target groups, including decision-makers, about the risks associated with introducing alien marine species into the Mediterranean and with bad practices that assist the secondary spread of already established alien species, it is recommended that SPA/RAC, in collaboration with the relevant national authorities and international organisations, prepare brochures, posters and other educational and awareness materials. These will be made available to the National Focal Points for SPAs, to be circulated in their respective countries.

⁹Trends in abundance, temporal occurrence and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (EO2, in relation to the main vectors and pathways of spreading of such species) [UNEP(DEPI)/MED WG.411/3]

D. REGIONAL COORDINATION

28. Regional coordination of the implementation of the present Action Plan will be guaranteed by the Mediterranean Action Plan's (MAP) Secretariat through the Regional Activity Centre for Specially Protected Areas. The main functions of the coordinating structure shall consist in:

- taking in hand the implementation of those actions required at regional level to attain the present Action Plan's objectives (Section C.2 above)
- insofar as its means permit, assisting the Contracting Parties in implementing the actions required at national level to attain the present Action Plan's objectives (Section C.1 above);
- regularly reporting to the National Focal Points for SPAs about the implementation of the present Action Plan, and preparing the report mentioned in paragraph 12 above;
- collaborating with the concerned organisations and endeavouring to ensure that the Mediterranean region is involved in the pertinent international and/or regional initiatives;
- promoting exchanges among Mediterranean specialists.

E. PARTICIPATION IN THE IMPLEMENTATION

29. Implementing the present Action Plan is the province of the national authorities of the Contracting Parties. The concerned international organisations and/or NGOs, laboratories and any organisation or body are invited to join in the work necessary for implementing the Action Plan. At their ordinary meetings, the Contracting Parties may, at the suggestion of the meeting of National Focal Points for SPAs, grant the status of "Action Plan Associate" to any organization or laboratory which so requests and which carries out, or supports (financially or otherwise) the carrying out of concrete actions (conservation, research, etc.) likely to facilitate the implementation of the present Action Plan, taking into account the priorities contained therein

In addition to collaborating and coordinating with the Secretariats of the relevant Conventions, SPA/RAC should invite IMO and FAO/GFCM to join and contribute to the implementation of the present Action Plan. It will set up a mechanism for regular dialogue between the participating organisations and, where necessary, organise meetings to this effect.

ANNEX: IMPLEMENTATION TIMETABLE

Action	Deadline	Responsible
1. Preparation of national reports (paragraph 17)	2015	Contracting Parties
2. Set up a mechanism to promote and coordinate the actions listed in paragraph 22	2015	Contracting Parties
3. Launch MAMIAS (paragraph 24)	2015	SPA/RAC
4. Preparation of forms for reporting to MAMIAS (as provisioned in paragraph 19)	2015	SPA/RAC
5. Baseline study with information for MAMIAS (paragraph 19)	2016	Contracting Parties
6. Develop programmes for data collection and monitoring (paragraph 18)	2016	Contracting Parties
7. Launch the procedures for enacting or strengthening national legislation governing the control of alien species introduction (paragraph 21)	2016	Contracting Parties
8. Establish/update a directory of relevant specialists and organisations (paragraph 22)	2016	SPA/RAC, Contracting Parties
9. Develop programmes to raise the awareness of the general public and target groups, including decision-makers, concerning the risks associated with species introduction (paragraph 22)	2016	Contracting Parties
10. Develop online tools and web services for searching the database and extracting data (paragraph 24)	2016	SPA/RAC
11. Annual updates of national data for MAMIAS (paragraph 20)	2017-2019 (annually)	Contracting Parties
12. Develop and implement risk-assessment techniques (paragraph 22)	2017	Contracting Parties
13. Develop online mapping tools (paragraph 24)	2017	SPA/RAC
14. Organise the regional training session (paragraph 26)	2017	SPA/RAC
15. Elaborate the National Plans (paragraph 23)	2018	Contracting Parties
16. Develop an early warning system in the framework of MAMIAS (paragraph 24)	2018	SPA/RAC
17. Establish collaborations and links between MAMIAS and other international systems and organizations (paragraph 25)	2018	SPA/RAC
18. Preparation of material for public education and awareness (paragraph 27)	2019	SPA/RAC, Contracting Parties
19. Develop online tools in MAMIAS for statistics and indicators, especially to support EcAp (paragraph 24)	2019	SPA/RAC
20. Organise a symposium every 3 years	From 2015	SPA/RAC

Draft Decision IG.22/13

Roadmap for a Comprehensive Coherent Network of Well-Managed MPAs

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling the objectives of the Strategic Plan for Biodiversity 2011-2020, including the Aichi Biodiversity Targets, of the Convention on Biological Diversity (CBD), the outcomes of the United Nations Conference on Sustainable Development (Rio+20) including the Sustainable Development Goals (SDGs) aiming to conserve and sustainably use the oceans, seas and marine resources for sustainable development, and the Resolution of the 68th session of the United Nations General Assembly (10 September 2014) deciding that “the proposal of the Open Working Group on Sustainable Development Goals contained in the report shall be the main basis for integrating sustainable development goals into the post-2015 development agenda”;

Recalling further Decisions IG.19/13 of COP 16 (Marrakesh, Morocco, November 2009) regarding the Regional Working Programme for the Coastal and Marine Protected Areas in the Mediterranean including the High Sea, and IG.21/5 of COP 18 (Istanbul, Turkey, December 2013) regarding the preparation of a roadmap for a comprehensive coherent network of well-managed MPAs to achieve Aichi Target 11 in the Mediterranean for consideration by COP 19;

Recalling the Istanbul Declaration adopted by COP 18 (Istanbul, Turkey, December 2013) according to which the States resolved to develop, a comprehensive, well-managed, effective and equitable, ecologically representative and well-connected system of coastal and marine protected areas in the Mediterranean by 2020 in line with the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets adopted under the Convention on Biological Diversity (CBD), and in particular to meet by 2020 Target 11 in the Mediterranean;

Recalling Decision IG.20/4¹ and IG.21/3² of COP 17 (Paris, France, February 2012) and COP 18 (Istanbul, Turkey, December 2013) respectively adopting Ecological Objectives, Operational Objectives, GES and related targets;

Taking into consideration the outcomes of the Mediterranean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) (Málaga, Spain, April 2014), and the 6th IUCN World Parks Congress (Sidney, Australia, November 2014);

Having considered the description of the Mediterranean areas meeting the EBSA criteria, included by the Twelfth meeting of the Conference of the Parties to the CBD (Pyeongchang, Republic of Korea, October 2014) in the EBSA repository and information-sharing mechanism;

Adopts the Roadmap for a Comprehensive Coherent Network of Well-Managed MPAs to Achieve Aichi Target 11 in the Mediterranean, as set out in Annex I to this Decision;

[Strongly encourages the Contracting Parties to fully take into account this Road map as a guidance to timely implement the regional working programme for the Coastal and Marine protected areas in the Mediterranean including the high seas with the goal to achieve Aichi target 11 by 2020]

¹Implementing MAP ecosystem approach roadmap: Mediterranean Ecological and Operational Objectives, Indicators and Timetable for implementing the ecosystem approach roadmap

²Decision on the Ecosystems Approach including adopting definitions of Good Environmental Status (GES) and targets

Requests the Secretariat and SPA/RAC to support countries to undertake the activities provided for in the Roadmap in full coordination and synergy with the relevant partner organizations;

Encourages relevant international and regional organizations, including funding agencies, to contribute to the implementation of this Roadmap in a synergic and coordinated way, promoting sharing networks, experiences and resources, and assist countries to upgrade MPA management and undertake the appropriate steps to urgently increase the surface areas covered by MPAs in the Mediterranean;

Calls on the Secretariat and SPA/RAC to strengthen links with relevant international and regional organizations in order to ensure sustainable management of marine areas through appropriate area-based conservation measures, including on the high seas, as appropriate;

Calls on funding agencies and donors to consider increasing up to appropriate levels the funding for MPAs in the five coming years (2016-2020);

[**Welcomes** the suggested actions as included in objective 4, addressing the need to ensure the stability of the system of Mediterranean MPAs by enhancing their financial sustainability and requests SPA/RAC in coordination with the Secretariat to move, as appropriate, the actions included in this objective into the resource mobilization plan to ensure a strategic and coherent approach to meet the financial needs of MPAs]

Requests SPA/RAC to undertake a mid-term evaluation of the implementation of the Roadmap and report the results to COP 20.

ANNEX

Roadmap for a Comprehensive Coherent Network of Well-Managed MPAs to Achieve Aichi Target 11 in the Mediterranean

Roadmap for a Comprehensive Coherent Network of Well-Managed MPAs to Achieve Aichi Target 11 in the Mediterranean

Rationale

Being committed under the Convention on Biological Diversity (CBD) to achieve the Aichi Targets, the Contracting Parties to the Barcelona Convention requested SPA/RAC to prepare a roadmap aimed at guiding and harmonizing their efforts towards achieving the Aichi Target 11 by 2020 (Decision IG.21/5). The Roadmap should emanate from the “Regional Working Programme for the Coastal and Marine Protected Areas in the Mediterranean Sea including the High Sea”³ and build on the progress made so far in the Mediterranean to develop marine and coastal protected areas. It should also consider other effective area-based conservation measures having a potential to ensure the long-term conservation and sustainable use of the components of the marine and coastal Mediterranean biodiversity.

Relationship between this Roadmap and the strategic orientations under the Barcelona Convention

This Roadmap is not intended as a new binding document under the Barcelona Convention, but it rather includes recommended actions that are fully in line with the orientations set in the main strategic documents of the MAP system, in particular the Mid-Term Strategy (MTS)⁴, the SAP BIO⁵, the Ecosystem Approach (EcAp) process and the Mediterranean Strategy on Sustainable Development (MSSD). Furthermore, the biennial Programme of Work for 2016-2017 fully takes into account the actions proposed in the Roadmap. The added value of this Roadmap is to provide a compendium of actions emanating from the MAP strategic orientations and harmonized in a way that facilitates (i) joining the efforts of the Mediterranean countries to improve the Mediterranean network of MPAs in accordance with Aichi Target 11, (ii) harmonizing the contributions of the relevant international organizations in assisting countries towards achieving Aichi Target 11, and (iii) assessing the progress made as well as ensuring a better visibility, at regional and global levels, of the MAP contribution in building the comprehensive coherent network of well-managed MPAs referred to in Aichi Target 11.

Implementation approach

The proposed actions provide general guidance to achieve the agreed objectives, while the details about their implementation at national level will be defined by each Contracting Party according to its national legal and institutional context.

The Roadmap will be implemented within the legal framework provided by the Barcelona Convention and its Protocols and in line with the relevant provisions of the other international and regional instruments (agreements or conventions), such as CBD and the United Nations Convention on the Law of the Sea (UNCLOS).

In this context, the Resolution 69/292 related to the “Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction”, adopted by the UN General Assembly, on 19 June 2015, is welcomed.

Moreover, an initiative aiming at the contribution to the creation of a trust fund for Mediterranean MPAs was launched in 2013 by the Governments of France, Monaco and Tunisia. This initiative was welcomed by Ministerial Message conveyed by the Ajaccio High-level Policy meeting organized in

³ Adopted by the Sixteenth Ordinary Meeting of the Contracting Parties (Marrakesh, Morocco, 3-5 November 2009).

⁴ The UNEP/MAP Mid-Term Strategy 2016-2021.

⁵ The Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region, adopted by the Thirteenth Ordinary Meeting of the Contracting Parties (Catania, Italy, 11-14 November 2003).

the framework of the 3rd International Marine Protected Areas Congress (IMPAC 3, Marseilles and Ajaccio, France, 21-27 October 2013). This trust fund aims to contribute to enhancing Mediterranean MPAs sustainability.

Elements considered for the elaboration of the Roadmap

In preparing the draft Roadmap, SPA/RAC considered first the results of the 2012 Forum of Marine Protected Areas in the Mediterranean (Antalya, Turkey, 25-28 November 2012) and in particular the roadmap approved by the participants to the Forum, whose elaboration was based on a consultation process involving a wide range of stakeholders: MPA managers, scientists, decision-makers, IGOs, civil society, donors, etc. The roadmap issued in Antalya was not intended to be a document committing countries, but a tool providing detailed recommendations and proposing steps, principles and activities to decision-makers, MPA managers, sea users and other stakeholders, in order to strengthen the Mediterranean MPAs with the view of having them evolving towards a more coherent, representative and efficient network. The Roadmap also takes into account the outcomes of relevant initiatives at global and regional levels, in particular the decisions adopted by international (e.g. CBD, Ramsar, UNCLOS, UNESCO) and regional (e.g. ACCOBAMS, GFCM) fora.

SPA/RAC also considered the results of three particularly relevant events:

- The 3rd International Marine Protected Areas Congress (IMPAC 3, Marseilles and Ajaccio, France, 21-27 October 2013);
- The Mediterranean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) (Málaga, Spain, 7-11 April 2014);
- The 6th IUCN World Parks Congress (Sidney, Australia, 11-19 November 2014).

In addition, SPA/RAC took due account of the recommendations of the UNEP/MAP Secretariat's Initial Gap Analysis on existing measures under the Barcelona Convention relevant to achieving or maintaining good environmental status of the Mediterranean Sea, in line with the Ecosystem Approach (UNEP(DEPI)/MED WG.401/5), which highlight the need for strengthened and more coordinated implementation efforts, to achieve the agreed regional EcAp targets.

Furthermore, it built on the experience and knowledge generated through the EcAp-MED 2012-2015 EU financed project, which paved the way towards the establishment of a joint network of SPAMIs in the high seas (the "Joint Management Action of EC with UNEP/MAP for identifying and creating Specially Protected Areas of Mediterranean Importance (SPAMIs) in the open seas, including the deepseas" project), with the three priority sites for engagement are: the Alboran Sea, the Adriatic Sea and the Sicily Channel/Tunisian Plateau.

The outcomes and concepts that emerged from these events, analysis and projects provided additional elements that allowed a further refinement of the draft Roadmap proposed hereinafter.

Furthermore, SPA/RAC submitted the preliminary draft Roadmap to an ad hoc meeting⁶ (Tunis, Tunisia, 27-28 April 2015) to which it convened a group of MPA experts, including representatives of relevant partner organizations (ACCOBAMS, GFCM, IUCN, MedPAN, and WWF-MedPO). The draft Roadmap as reviewed and amended by the ad hoc meeting was then examined by the Focal Points for SPAs during their Twelfth Meeting (Athens, Greece, 25-29 May 2015) that made some changes to the text and invited SPA/RAC to pursue its consultation on the Roadmap with the Focal Points for SPAs and with the other MAP Components with a view to preparing a revised version of the Roadmap to be submitted to the MAP Focal Points Meeting (Athens, Greece, 13-16 October 2015).

⁶The convening of this ad hoc meeting was supported by FFEM in the framework of the MedMPAnet project. The MedMPAnet project is implemented in the framework of the UNEP/MAP-GEF MedPartnership with the financial support of: EC, AECID and FFEM.

The present version of the Roadmap takes into account the comments made by the Twelfth Meeting of Focal Points for SPAs as well as the comments collected during the email consultation undertaken during July 2015 among the Focal Points for SPAs, MAP Components and partner organizations.

Roadmap for a Comprehensive Coherent Network of Well-Managed MPAs to Achieve Aichi Target 11 in the Mediterranean

This Roadmap was elaborated to guide the Contracting Parties to the Barcelona Convention and harmonize their efforts to achieve the globally agreed Aichi Target 11.

To this end, the activities proposed in the Roadmap were oriented towards achieving the following four Objectives:

Objective 1: Strengthen systems of protected areas at national and Mediterranean levels, including in the high seas and in ABNJ, as a contribution to the relevant globally agreed goals and targets.

Objective 2: Improve the system of Mediterranean MPAs through effective and equitable management.

Objective 3: Promote the sharing of environmental and socio-economic benefits of Mediterranean MPAs, and the MPAs integration into the broader context of sustainable use of the marine environment and the implementation of the ecosystem and marine spatial planning approaches.

Objective 4: Ensure the stability of the system of Mediterranean MPAs by enhancing their financial sustainability.

Timeframe

Considering the short period remaining before 2020, the Roadmap proposed hereinafter contains only suggested actions to guide the Contracting Parties and relevant international and regional organizations, to timely implement the regional working programme for the coastal and marine protected areas in the Med including the high seas with the goal to achieve Aichi target 11 by 2020 .

The Contracting Parties will report to COP 20 (2017) about the steps they have done during the biennium 2016-2017 and steps they will undertake during the biennium 2018-2019.

SPA/RAC shall provide COP 20 with an assessment of the progress in implementing the Roadmap (based on the reporting by the Contracting Parties).

By the end of year 2019, an evaluation will be made at regional level to assess the progress made (including success and possible failure) by the Mediterranean countries towards achieving the Aichi Target 11.

Objective 1: Strengthen systems of protected areas at national and Mediterranean levels, including in the high seas and in ABNJ, as a contribution to the relevant globally agreed goals and targets

In order to meet Aichi Target 11, Mediterranean MPAs or other effective area-based conservation measures need to be organized into a network, or system of networks, with the following elements being enhanced in particular: a) **extension** through the designation of new areas, the expansion of existing areas, and the incorporation of areas benefiting from other types of protection measures; b) **ecological representativity**, through the selection of marine protected areas based on scientific information, which are to be identified within all marine areas, including within ABNJ; c) **ecological**

connectivity, with the new areas strategically located to ensure that they are spatially distributed in an ecologically meaningful way; and d) **geographical balance**, with area-based conservation more homogenously distributed across the region, both within and outside national jurisdiction.

In the long term, the Mediterranean countries should take into account/are invited to consider the Promise of Sidney made at the 6th IUCN World Parks Congress, in particular by ensuring that at least 30% of each Mediterranean marine habitat is covered by MPAs.

Suggested actions for the Contracting Parties

1.1) Undertake, at national level, gap analysis to identify the ecosystems and other components of marine biodiversity that are under-represented in the existing MPA system. The gap analysis should take into account the wide range of objectives for specially protected areas as provided for by the SPA/BD Protocol (Part II, Section One). The gap analysis should also identify the needed steps to enhance connectivity among Mediterranean MPAs. The gap analysis should be conducted through a scientifically based process that also ensures the full and effective participation of stakeholders (local communities, sea users, scientists, NGOs, etc.).

	2016	2017	2018	2019	2020
Action 1.1					

1.2) Identify and propose area-based conservation/management measures or candidate MPAs for listing in the regionally and globally recognized area-based management classifications, including, in particular, SPAMIs, GFCM's Fishery Restricted Areas (FRAs), UNESCO's Biosphere Reserves and World Heritage Sites.

	2016	2017	2018	2019	2020
Action 1.2					

1.3) Identify specific hotspots, in particular within Mediterranean areas meeting EBSA criteria and contained in the CBD EBSA repository and information-sharing system, applying scientific, environmental methodologies and criteria (focusing on important and fragile ecosystems, habitats and species) that deserve urgent conservation and protection or restoration and engage in discussions, wherever appropriate and possible, with neighbouring National Governments in the designation of transboundary MPAs or area-based conservation measures, extending over multiple jurisdictions and/or into ABNJ, also taking advantage from lessons learned in similar previous experiences (e.g. the Pelagos Sanctuary Agreement).

	2016	2017	2018	2019	2020
Action 1.3					

1.4) Establish and implement national plans to formally designate and/or extend, as appropriate, MPAs and other area-based marine management measures to address under-representation identified by the gap analysis, taking into account the engagement from Aichi Target 11. The elaboration of the national plans should be conducted through a scientifically based process that also ensures the full and effective participation of stakeholders (local communities, sea users, scientists, NGOs, etc.).

	2016	2017	2018	2019	2020
Action 1.4					

Suggested actions for Regional and International Organizations

1.5) Disseminate technical tools for gap analysis and MPA system planning and facilitate exchange of experiences and best practices, and where necessary, provide assistance to national authorities on these issues.

	2016	2017	2018	2019	2020
Action 1.5					

1.6) Offer assistance to national authorities and, where needed, facilitate the multilateral processes for the identification of potential MPA sites including in ABNJ, and where appropriate facilitating bilateral initiatives.

	2016	2017	2018	2019	2020
Action 1.6					

1.7) Ensure the continued functioning, updating and improvement of a regional database of protected areas, including regional inventories of sites of conservation interest.

	2016	2017	2018	2019	2020
Action 1.7					

1.8) Facilitate the application of the existing compliance mechanisms to monitor the implementation of the MPA related measures adopted to meet the commitments taken by Mediterranean Governments.

	2016	2017	2018	2019	2020
Action 1.8					

1.9) Undertake by the end of 2019 an assessment of the status of the Mediterranean network of MPAs with the view of evaluating the progress made by the Mediterranean countries towards achieving the Aichi Target 11 (encouraging countries to notify the designation to the regional database MAPAMED⁷).

	2016	2017	2018	2019	2020
Action 1.9					

Objective 2: Improve the system of Mediterranean MPAs through effective and equitable management

Aichi Target 11 requires protected areas to be “effectively and equitably managed”, and Mediterranean nations should invest a special effort to satisfy such condition as far as their area-based conservation measures are concerned, without prejudice to the rights and jurisdictions of the coastal State. Elements where improvement is urgently needed include ensuring that **management measures** are implemented in all areas through effective management mechanisms, with adequate availability of human, material and financial resources. Key to effectiveness success will be in particular the building and sharing of capacity to manage transboundary and High Sea areas, as well as engaging managers and stakeholders from the private sector and civil society in integrating and ensuring fulfilment of conservation needs with socio-economic opportunities provided by MPAs.

Suggested actions for the Contracting Parties

2.1) Review, and where necessary amend, existing institutional and legal systems applicable to MPAs. It is particularly important to (i) break down governance barriers that impede the adequate functioning of institutions and other bodies in charge of MPA management, (ii) establish institutional arrangements that ensure efficient surveillance and enforcement of legal measures, and (iii) promote

⁷ Database of Marine Protected Areas in the Mediterranean: www.mapamed.org.

participatory management in particular through the creation of consultation mechanisms at national and local level.

	2016	2017	2018	2019	2020
Action 2.1					

2.2) Assess the effectiveness of the existing governance and management system for each MPA, using and further developing management effectiveness indicators elaborated for Mediterranean MPAs⁸. It is highly recommended that the assessment be conducted regularly and through a participatory approach involving MPA managers, scientists, sea users, local communities and NGOs.

	2016	2017	2018	2019	2020
Action 2.2					

2.3) Ensure that for each MPA clear objectives and concrete measures, based on the best available knowledge and with appropriate stakeholder involvement, are prepared, adopted, implemented and revised when necessary (inclusive of measures such as zoning, monitoring, enforcement, research), and that all MPAs have adequate management teams in terms of skills and staff number.

	2016	2017	2018	2019	2020
Action 2.3					

2.4) Engage in discussions, wherever appropriate, with neighbouring Contracting Parties in the development of joint mechanisms for the management of networks of MPAs, and MPAs extending over multiple jurisdictions and/or into ABNJ, also taking advantage from lessons learned in similar previous experiences.

	2016	2017	2018	2019	2020
Action 2.4					

Suggested actions for Regional and International Organizations

2.5) Provide assistance to the relevant Contracting Parties in conducting evaluation of the effectiveness of MPA management. Assistance could involve: a) direct support in the conduction of effectiveness assessments; b) the development of harmonized technical tools including guidelines, standards and indicators for the MPA management evaluation, specifically adapted to the Mediterranean context; c) the compilation and dissemination of information on lessons learnt in the context of MPA management, including success and failure stories; and d) elaboration and/or review of existing MPA management plans.

	2016	2017	2018	2019	2020
Action 2.5					

2.6) Strengthen the existing capacity building mechanisms for MPA managers, and promote their coordination into a regional capacity building system, using a wide range of training approaches (e.g. training courses, on the field trainings, online trainings modules, exchange of visits). The system should target also other actors (e.g. enforcement and judiciary authorities, private sector) and decision-makers.

	2016	2017	2018	2019	2020
Action 2.6					

⁸ This could be done through considering and further developing existing indicators such as those developed by WWF-Italy and IUCN-Med in 2013 (Guide for quick evaluation of management in Mediterranean MPAs).

2.7) Facilitate the elaboration of management approaches for MPAs that promote harmonization and complementarities between MPAs.

	2016	2017	2018	2019	2020
Action 2.7					

2.8) In order to ensure the effective management of transboundary MPAs, or MPAs extending into ABNJ, offer assistance to Contracting Parties to facilitate the needed multilateral processes, without prejudice to the rights, the present and future claims or legal views of any State relating to the United Nations Convention on the Law of the Sea (UNCLOS).

	2016	2017	2018	2019	2020
Action 2.8					

Objective 3: Promote the sharing of environmental and socio-economic benefits of Mediterranean MPAs and the MPAs integration into the broader context of sustainable use of the marine environment and the implementation of the ecosystem and marine spatial planning approaches

Marine Protected Areas (MPAs) have proved their usefulness in the conservation of the marine environment and in restoring degraded habitats and depleted species populations. Their role in the economic and social development and in ensuring sustainable livelihood sources is being increasingly recognized. However, there is still need in the Mediterranean for integrating MPAs in a wider approach for the sustainable management of the marine and coastal resources and for strengthening their added values in terms of services provided to local communities, increasing food security and poverty alleviation. Once further integrated into the broader context of sustainable use of the marine environment and into the implementation of the Ecosystem Approach and taking into account the marine spatial planning approach to the management of human activities, the Mediterranean MPAs will be more effective in opening new income generating opportunities and in offering a framework for dialogue between sea users, while ensuring their primary biodiversity conservation role. Using MPAs as platforms for consultation among stakeholders may significantly contribute in the resolution of user conflicts and in promoting equitable sharing of benefits.

Suggested actions for the Contracting Parties

3.1) Ensure conciliation between the conservation objectives and the requirements for the local economic and social development by establishing and implementing adequate measures, such as zoning systems⁹ for MPAs that are regularly assessed.

	2016	2017	2018	2019	2020
Action 3.1					

3.2) Promote cross-sectorial policies and mechanisms for integrating the MPA national strategies and policies with other human activity sectors, in particular fisheries and tourism, through the development of appropriate governance frameworks, including the related legal and institutional arrangements. These could include, but will not be limited to, cross-sectorial coordination, marine spatial planning legislation, support groups from the business sectors for MPA management, and legal instruments for public-private partnerships.

	2016	2017	2018	2019	2020
Action 3.2					

⁹ Zoning schemes establishment should be based on internationally established and tested guidelines and guiding principles, such as those established by IUCN.

3.3) Develop systems enabling civil society to engage effectively in MPA management.

	2016	2017	2018	2019	2020
Action 3.3					

3.4) Establish MPAs in areas particularly suitable for the conservation of living marine resources, both for extractive and non-extractive use, and encourage the equitable sharing of social and economic benefits deriving from MPAs, including for poverty alleviation and for improving the standard of living of local populations, while encouraging conservation and sustainable use of these resources.

	2016	2017	2018	2019	2020
Action 3.4					

Suggested actions for Regional and International Organizations

3.5) Provide assistance to the relevant Contracting Parties in further integrating MPAs into their territorial, national heritage, social and economic contexts, in particular through the development of guidelines and promoting exchange of experiences, in promoting the sharing of environmental and socio-economic benefits of Mediterranean MPAs, and the MPAs' integration into the broader context of sustainable use of the marine environment, through the implementation of the Ecosystem Approach and taking into account the marine spatial planning approach.

	2016	2017	2018	2019	2020
Action 3.5					

3.6) Facilitate, through technical and financial support, stakeholder networking initiatives at national and regional level with the view of (i) generating further synergies between MPAs and other relevant human activity sectors, in particular fisheries and tourism, and (ii) ensuring continued monitoring of the development of these sectors.

	2016	2017	2018	2019	2020
Action 3.6					

3.7) Provide assistance to Mediterranean countries in integrating MPAs as key reference areas within the application of the Ecosystem Approach under the Barcelona Convention.

	2016	2017	2018	2019	2020
Action 3.7					

Objective 4: Ensure the stability of the system of Mediterranean MPAs by enhancing their financial sustainability

The long-term sustainability of the Mediterranean Marine Protected Areas (MPAs) will be ensured only if the legal framework governing their planning and management is appropriately adapted to the challenges they are facing. Where there is sufficient understanding or higher political will and real commitment from States to marine biodiversity conservation, the stability of Mediterranean MPAs may be increased by the setting up of stronger MPA legal frameworks. Legislation governing MPAs should ensure (i) long-term stability of the legal status of MPAs, (ii) participation and involvement of stakeholders in the planning and management processes, (iii) equitable access and sharing of resources and of benefits generated by MPAs, and (iv) securing the financial sustainability of Mediterranean MPAs. Such sustainability is a prerequisite to ensure their stability and the achievements of their objectives. Mediterranean countries decision-makers' higher awareness of the socio-economic benefits that MPAs could generate will help in properly integrating them into the local and national

development plans. Investing in marine protected areas, through long-term innovative financing approaches, has the potential to make MPAs not a financial burden for States, but rather a booster for income generation and the economy in general. [The actions suggested in this objective are meant to be considered for the inclusion in the resource mobilisation plan, that is the mechanism to address in a strategic manner all the operational and financial means for the full and timely implementation of the BC its Protocols and APs.]

Suggested actions for the Contracting Parties

4.1) Review, and where necessary, amend existing relevant legal and institutional frameworks with the view of improving the governance of existing MPAs and boosting the creation of new MPAs to urgently increase, in the Mediterranean, the marine surface area that is protected and effectively managed.

	2016	2017	2018	2019	2020
Action 4.1					

4.2) Assess the financial needs and gaps for MPAs and develop funding strategies, making use as appropriate of innovative funding approaches and ensuring a proper marketing of the services and benefits generated by MPAs. Applying the concepts of “user/payer” and “payment for (marine) ecosystem services” would help securing diversified and significant financial resources for natural resources conservation and particularly for MPAs.

	2016	2017	2018	2019	2020
Action 4.2					

4.3) Secure the financial resources necessary to the establishment of MPAs during their initial years; MPAs being indeed more dependent on steady financial resources during their first development stages (planning and creation). Achieving the Aichi Target 11 in the Mediterranean requires a special financial effort from States to boost the establishment and management of new MPAs.

	2016	2017	2018	2019	2020
Action 4.3					

4.4) Assist MPA managers in enhancing their fundraising capacities, in particular through the development of their business plans, by removing possible legal impediments discouraging or prohibiting autonomous fundraising by MPAs, and using financial management approaches based on efficiency, transparency and adequate financial reporting.

	2016	2017	2018	2019	2020
Action 4.4					

4.5) Establish national environmental funds and/or other mechanisms for supporting conservation actions and particularly MPAs creation and management.

	2016	2017	2018	2019	2020
Action 4.5					

Suggested actions for Regional and International Organizations

4.6) Assist countries to build national capacities for fundraising for MPAs through training activities, promoting exchange of experience and dissemination of information about best practices and innovative funding success in MPAs.

	2016	2017	2018	2019	2020

Draft Decision IG.22/14

List of Specially Protected Areas of Mediterranean Importance (SPAMI List)

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling Article 8 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, hereinafter referred to as the “SPA/BD Protocol”, on the establishment of the List of Specially Protected Areas of Mediterranean Importance (SPAMI List) and its Annex I related to the Common Criteria for the Choice of Protected Marine and Coastal Areas that Could be Included in the SPAMI List;

Considering the proposal made by Albania, pursuant to Article 9, paragraph 3 of the SPA/BD Protocol, to include a new area in the SPAMI List;

Having considered the report of the 12th Meeting of Focal Points of SPA/RAC (Athens, Greece, May 2015) regarding the evaluation of its conformity with the criteria provided for in Article 16 of the SPA/BD Protocol;

Recalling Decision IG.17/12 of COP 15 (Almeria, Spain, January 2008) on the Procedure for the Revision of the Areas Included in the SPAMI List, stating that for each SPAMI, a Periodic Review should be carried out every six years by a mixed national/independent Technical Advisory Commission;

Decides to include the Karaburun-Sazan National Marine Park (Albania) in the SPAMI List;

Requests the concerned Party to take the necessary protection and conservation measures specified in its SPAMI proposal in accordance with Article 9, paragraph 3 and Annex I to the SPA/BD Protocol;

Requests the Secretariat in cooperation with SPA/RAC to inform the competent international organizations of the new SPAMI including the measures taken in that SPAMI, as provided for in Article 9, paragraph 5 of the SPA/BD Protocol;

Takes note of the “Revised Format for the Periodic Review of SPAMIs” (UNEP(DEPI)/MED WG.421/Inf.27) prepared by SPA/RAC in consultation with the Focal Points of SPA/RAC;

Requests SPA/RAC to test it and, on this basis, to further develop it in consultation with Focal Points of SPA/RAC for consideration by COP 20, by:

- Preparing an online version of the Revised Format and using it on a trial basis for the evaluation of SPAMIs of 2017, along with the old version of the Evaluation Format;
- Investigating options to further adapt the Evaluation Format to the case of transboundary SPAMIs or SPAMIs covering ANBJ zones;
- Preparing guidelines for evaluators, aiming to provide them with information and guidance on the methodology, assessment criteria and scoring system; and
- Exploring the possibility of harmonization of the SPAMI Review Format with relevant tools used in similar contexts of other regional seas, e.g. OSPAR, and other relevant regulatory initiatives;

Requests SPA/RAC to work with the relevant authorities in Algeria and Italy to carry out during 2017 the Ordinary Periodic Review for the following three SPAMIs, according to the procedure adopted by the Contracting Parties, and while using the online version of the Revised Format on a trial basis, along with the old version of the Evaluation Format:

- Banc des Kabyles Nature Reserve (Algeria);
- Habibas Islands (Algeria); and
- Portofino Marine Protected Area (Italy).

Draft decision IG.22/15

Monitoring in terms of compliance, renewal of the Compliance Committee members, and Working Programme for the biennium 2016-2017

The 19th Meeting of the Contracting Parties to the Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred as the Barcelona Convention,

Recalling Article 27 of the Barcelona Convention;

Recalling Decision IG 17/ 2, amended by Decisions IG.20/1 and IG.21/1, regarding the Compliance Procedures and Mechanisms within the framework of the Barcelona Convention and its Protocols, hereinafter referred as “Compliance procedures and mechanisms”, particularly paragraphs 4, 5, 6, 7, 8, 9 and 35, as well as Decision IG 19/1 amended by Decision IG.21/1 regarding the Rules of the Procedures of the Compliance Committee;

Having examined the activity report of the Compliance Committee, submitted by the President to the Meeting of the Contracting Parties, by virtue of Section VI of Decision IG 17/2 for the biennium 2014-2015;

Recalling that the Compliance Committee’s main role is to assess the current or potential situations of non-compliance and general non-compliance issues by the Contracting Parties and, consequently, to provide advise and assist Contracting Parties to implement its recommendations, as well as those of the meetings of the Contracting Parties, in order to assist them to comply with their obligations by virtue of the Barcelona Convention and its Protocols;

Noting with satisfaction the implementation by the Compliance Committee, during these three meetings, of its Programme of Work, within the period 2014-2015 covered by its report;

Firmly insisting on the necessity for the Contracting Parties to comply, accurately and within the requested deadlines, with their reporting obligations by using the reporting form available online about the measures taken to implement the Barcelona Convention and its Protocols, as well as the decisions of the Meeting of the Contracting Parties;

Noting with concern, that the number of Contracting Parties which haven’t submitted their report within the set deadline or haven’t submitted their report at all, or with partial information, has regularly increased since the biennium 2012-2013;

Noting also that, despite the setting up of an online reporting system aiming at facilitating the access to information and the sending of Reports, the number of missing or incomplete reports for the Biennium 2012-2013, has continued to increase;

Drawing the attention on the factual situation that deprives the Meeting of the Contracting Parties of the assessment of the reports, as provided for in Article 18-2-ii of the Barcelona Convention;

Taking also note of the conclusions of the Recommendations of the Compliance Committee related, respectively, to the follow-up of the implementation of Decision IG.21/1 related to the Contracting Parties which haven’t submitted their reports, the reporting obligation as stipulated in Article 26 of the Barcelona Convention, and the functioning of the Compliance Committee stipulated in Annex I of the Activity Report for the Biennium 2014-2015;

Adopts the conclusions and recommendations of the Compliance Committee addressing, respectively, the follow-up of the implementation of Decision IG.21/1 regarding the Contracting Parties which haven't submitted their reports in accordance with the reporting obligations as stated in Article 26 of the Barcelona Convention, and the functioning of the Compliance Committee as contained in Annex I of the present Decision;

Urges the Contracting Parties to submit their reports of the past biennium in order to ensure full compliance with Article 26 of the Barcelona Convention;

Requests again all the MAP components to provide the Compliance Committee with any useful information, the necessary technical assistance and support to help them comply with their responsibilities, particularly to undertake a better assessment of the Reports submitted by the Contracting Parties and verify their content, as well as assessing the current or potential cases of non-compliance or general compliance issues by the Contracting Parties;

Requests the Compliance Committee, to examine in conformity with paragraph 17, sub-paragraph b) and c), Compliance Procedures and Mechanisms, the general issues related to compliance, particularly the recurrent problems of non-compliance with these obligations;

Adopts the Programme of Work of the Compliance Committee for the Biennium 2016-2017, contained in Annex II of the present Decision¹;

Elects and/or renews the Compliance Committee members and alternate members whose names are mentioned in Annex III of the present Decision, in accordance with the Procedures set by virtue of Decision IG 17/2 related to Compliance Procedures and Mechanisms as amended by Decision IG. 20/1.

¹ For its final adoption by the Committee at its 11th meeting.

Annex I

**National reports submitted by virtue of Article 26 of the Barcelona Convention,
as of 21 May 2015**

National reports submitted by virtue of Article 26 of the Barcelona Convention as of May 21, 2015

No	Contracting Parties	Biennium 2002-2003	Biennium 2004-2005	Biennium 2006-2007	Biennium 2008-2009	Biennium 2010-2011	Biennium 2012-2013
1	Albanie/Albania	•	•	•		•	
2	Algérie/Algeria	•	•		•		
3	Bosnie&Herzégovine/Bosnia & Herzegovina	•	•	•	•	•	•
4	Chypre/Cyprus	•			•	•	•
5	Croatie/Croatia	•	•	•	•	•	•
6	Union européenne/European Union	•	•	•	•	•	•
7	Égypte/Egypt		•		•		
8	Espagne/Spain	•	•	•	•	•	
9	France/France	•	•	•	•	•	•
10	Grèce/Greece	•	•	•	•	•	•
11	Israël/Israel	•	•	•	•	•	
12	Italie/Italy	•	•		•	•	•
13	Liban/Lebanon					•	•
14	Libye/Libya	•		•			
15	Malte Malta		•				
16	Maroc/Morocco	•	•	•	•	•	•
17	Monaco/Monaco	•	•	•	•	•	
18	Monténégro/Montenegro	•		•		•	•
19	Slovénie/Slovenia	•	•	•			
20	Syrie/Syria	•	•	•	•		
21	Tunisie/Tunisia	•			•		
22	Turquie/Turkey	•	•	•	•	•	•
Total of reports submitted for Biennium		19	17	15	16	15	11

Annex II
Programme of Work of the Compliance Committee for the Biennium
2016-2017

Programme of Work of the Compliance Committee for the Biennium 2016-2017

The Compliance Committee will carry out the following activities during the Biennium 2016-2017 according to the following steps:

- a. Examining the potential referrals by the Contracting Parties, in accordance with Paragraphs 18 and 19 of the Compliance Procedures and Mechanisms;
- b. Examining the potential referrals carried out by the Contracting Parties in conformity with Paragraph 23 of the Compliance Procedures and Mechanisms;
- c. Analyzing general non-compliance issues in accordance with Paragraphs 17 (b) and (c) of Compliance Procedures and Mechanisms deriving from reports submitted by the Contracting Parties for the Biennia 2012-2013 et 2014-2015;
- d. Setting-up a Guide/User's Manual providing explanatory information about the amended reporting form to the Barcelona Convention and its Protocols;
- e. Setting up criteria for using the relevant information within the Committee's power of initiative, in accordance with Article 23 bis of the amended Decision IG. 17/2;
- f. Analyzing more general issues raised by the Meeting of the Contracting Parties by virtue of paragraph 17, sub-paragraph c) Compliance Procedures and Mechanisms, including the deep examination of issues raised by the MAP components over the implementation of Protocols;
- g. Continuing the examination of proposals aiming at consolidating the Committee within the Barcelona Convention and its Protocols;
- h. Analyzing the effectiveness of the implementation of Compliance Procedures and Mechanism of the Barcelona Convention, taking into account the feedback of Parties regarding the modalities according to which the supporting role of the Committee can be improved;
- i. Assess the extent of the legally binding nature of programmes of measures and their implementation timetables agreed in the Regional tools developed (strategies, actions plans) as adopted in the framework of the Protocols of the Barcelona Convention for the Contracting Parties.
- j. Drafting the activity report of the Committee for the biennium 2016-2017 for submission for adoption by the twentieth Meeting of the Contracting Parties.

Annex III
Members and alternate members of the Compliance Committee elected and/or renewed
by the Nineteenth Meeting of the Contracting Parties

[Members and alternate members of the Compliance Committee elected and/or renewed by the Nineteenth meeting of the Contracting Parties

Group I – Contracting Parties of the South and the East of the Mediterranean Sea

-elected as a member for a four-year tenure
-elected as an alternate member for a four-year tenure

Group II – Contracting Parties members of the European Union

- Mr. Michel PRIEUR * renewed as a member for a four-year tenure
- Mr. José JUSTE RUIZ *, renewed as an alternate member, for a four-year tenure

Group III – Other Contracting Parties

- Mrs. Rachelle ADAM * renewed as a member for a four-year tenure
- [Mr. Tarzan LEGOVIC *, renewed as an alternate member for a four-year tenure]
-elected as a member for a four-year tenure
-elected as a member for a four-year tenure]

*The names mentioned on an indicative basis in this Table of election and/or renewal of Committee members are eligible for the renewal of their tenure for four years.

Draft Decision IG.22/16

**Revised reporting format for the implementation of the Barcelona Convention and its Protocols;
and Operational Section of the Reporting Format for the Protocol on the Integrated Coastal
Zone Management (ICZM) in the Mediterranean**

The 19th Meeting of the Contracting Parties to the Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred as the Barcelona Convention,

Recalling respectively Articles 26 and 27 of the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, as modified in Barcelona in 1995, hereinafter designed the Barcelona Convention, as well as the relevant articles of the Protocols of the Barcelona Convention stipulating the reporting obligation regarding implementation;

Expressing its deep concern regarding the fact that eleven Contracting Parties haven't submitted to the date of August 06, 2015, their biennial reports about the measures taken to implement the Barcelona Convention and its Protocols and that some reports were not received within the set deadlines;

Taking note of the favorable opinion given by the Priority Action Program of the Regional Activity Center during its meeting on May 14, 2015, regarding the draft operational section of the reporting format of the Protocol of Integrated Coastal Zone Management;

Taking also note of the Secretariat report exposing the general status of the progress in the Region, on the legal and institutional level, regarding the implementation of the Barcelona Convention and its Protocols;

Urges the Contracting Parties to officially submit their biennial report to the Secretariat in October 2017 at the latest, regarding the measures taken to implement the Convention and its Protocols for the biennium 2014-2015 by using the online reporting format;

Adopts the amended draft reporting format about the Convention of Barcelona and its Protocols prepared by the Secretariat (Annex I);¹

Adopts the operational section of the reporting format of the Protocol of the Integrated Coastal Zone Management (ICZM) in the Mediterranean, prepared by the Secretariat and the RAC/PAP (Annex II);

Requests the Contracting Parties having ratified the ICZM Protocol and invites the signatory Parties to submit, on a voluntary basis, a report of the implementation of the Protocol within the framework of the reporting system of the Barcelona Convention and its Protocols;

Requests the Secretariat to provide, subject to the availability of funds, advice to the Contracting Parties to submit, within the set deadlines, full reports about the implementation of all MAP legal instruments;

Requests the Secretariat to consult the Contracting Parties about the need to build capacities regarding the preparation of reports and inform the twentieth meeting of the Contracting Parties of the conclusions of this consultation;

Requests the Secretariat to undertake an analysis of the information mentioned in the national reports in order to draft a report addressing the general status of the progress in the region, on the legal,

¹The simplified draft reporting format is subject to ongoing consultation with the Compliance Committee.

institutional and technical points of view, in the implementation of the Barcelona Convention and its Protocols, if any, and submit this report to the twentieth meeting of the Contracting Parties.

Annex I
**Draft revised reporting format for the implementation of the Barcelona Convention and
its Protocols**

Currently under validation by the Compliance Committee

Annex II

Draft reporting format for the Protocol on the Integrated Coastal Zone Management in the Mediterranean (Operational Section)

**Reporting Format (institutional, legal and operational sections) for reporting on the implementation
of the Protocol on integrated Coastal Management in the Mediterranean**

I – Information on Contracting Party completing the Report	
1.1 Contracting Party	Reply :
1.2 Period covered by the Report	Reply :
Full name of national body responsible	Reply :
1.3 Name and functions of official completing the report	Reply :
1.4 Mailing address	Reply :
1.5 Telephone	Reply :
1.6 Email	Reply :

1.7 Validation by MAP Focal Point	Reply :
1.8 Date of dispatch of report	Reply :
II - Preparation of Report	
2.1 Public authorities consulted	Reply :
2.2 Stakeholders consulted	Reply :
III – Ratification and general legal transposition into national law Articles 37, 5 and 6	
3.1 Date of signature of Protocol	Reply :
3.2 Date of ratification or approval of Protocol	Reply :

3.3 Date of filing with the Spanish Government	Reply :
3.4 Date of publication in the country	Reply :
3.5 Date of entry into force in national law	Reply :
3.6 In the absence of ratification, status of the process for ratification	Reply :
3.7 Have the provisions of the Protocol been transposed into one or more general legal acts? Please specify titles and dates of such general legal acts?	Reply :

<p>Which provisions of the Protocol have been transposed into the country's general legal acts?</p> <p>Please give a synthetic description of each of them</p> <p>Please provide brief comparison between the requirements of the Protocol and Contracting Party legislation</p>	
<p>3.8 Are any such acts being prepared?</p>	<p>Reply :</p>

<p>Anticipated adoption date ?</p>	
<p>3.9 Are the objectives and general principles of Article 5 and 6 of the Protocol included in such acts?</p>	<p>Reply :</p>
<p>3.10 In case not, can you please explain why?</p>	<p>Reply :</p>
<p>IV - Informations on geographical coverage Article 3-3</p>	
<p>4.1 – How was Article 3-3 implemented at national and/ or local level in relation to the obligation to inform the public and stakeholders?</p>	<p>Reply :</p>

V – Institutional measures Article 7	
<p>5.1 Which department is responsible at central level for ICZM?</p>	<p><i>Reply:</i></p>
<p>5.2 Is there an interministerial/ national body for ICZM?</p> <p>Please, give a short description of name, establishment, competencies and process</p> <p>If there is no such body, is there an intention to create it?</p>	<p><i>Reply:</i></p>
<p>5.3 Is there coordination between maritime and land authorities (Art.7-1-b) ?</p> <p>How and and at what level ?</p>	<p><i>Reply :</i></p>
<p>5.4 Is there coordination between the national level and the local level :</p> <p>. on strategies, plans and programs?</p> <p>on permissions for activities?</p>	<p><i>Reply :</i></p>

How (article 7-1-c) ?	
5.5 – What measures contribute to the coherence and effectiveness referred to under Article 7-2?	<i>Reply :</i>
5.6 What difficulties have been encountered?	<i>Reply :</i>
5.7 How the application of the Protocol has supported the implementation of the provisions of other Protocols of the Barcelona Convention?	<i>Reply :</i>

VI – Operational measures Article 8	
8.2 a Has a zone not less than 100 meters in width where construction is not allowed been legally established?	<i>Reply :</i>
8.2.b – Have other existing measures have been adapted in a manner consistent with this article ?	<i>Reply :</i>
8.3.a – Has the national legislation identified and delimited areas in which urban development and other activities are restricted or, where necessary, prohibited ?	<i>Reply :</i>
8.3.b – Do national Legislation limit the linear extension of urban development and the creation of new transport infrastructure along the coast ?	<i>Reply :</i>

<p>8.3.c – Do national Legislation provide for freedom of access by the public to the sea and along the shore ?</p>	<p><i>Reply:</i></p>
<p>8 .3.d – Do national Legislation restrict or, where necessary, prohibit the movement and parking of land vehicles, as well as the movement and anchoring of marine vessels, in fragile natural areas on land or at sea, including beaches and dunes ?</p>	<p><i>Reply :</i></p>
<p>Article 9– Economic Activities</p>	
<p>Are there any specific economic indicators relating to the sustainable use of the coastal zone?</p>	<p><i>Reply :</i></p>

Article 10 – Specific coastal ecosystems, landscapes & cultural heritage	
<p><i>1. Wetlands</i> Are measures in place to regulate or, if necessary, prohibit activities that may have adverse effects on wetlands and estuaries?</p>	<p><i>Reply:</i></p>
<p><i>2.- Marine Habitats</i> a - Have measures to ensure the protection and conservation, through legislation, planning and management of marine and coastal areas been adopted?</p> <p>b – Are there any international cooperation programmes, agreements or activities to protect marine habitats?</p>	<p><i>Reply :</i></p>
Article 11 – Coastal landscapes	
<p>Have measures been adopted to ensure the protection of the specific aesthetic, natural and cultural value of coastal landscapes through legislation, planning and management?</p>	<p><i>Reply:</i></p>

Article 12 - Islands	
Are the specificities of Islands taken into account in coastal strategies, plans and programmes ?	<i>Reply:</i>
Article 13 – Cultural Heritage	
Have appropriate measures to preserve and protect the coastal cultural heritage including the underwater heritage been taken?	<i>Reply:</i>
Article 15 – Awareness raising, Training, Education & Research	
Have awareness-raising activities, educational programmes, training and public education on ICZM been undertaken at the following levels? : National Régional local	<i>Reply:</i>

Article 16 – Monitoring & Review	
<p>Has a national coastal inventory been prepared covering the following informations:</p> <p>Resources & activities</p> <p>Institutions</p> <p>Legislation and Planning</p>	<p><i>Reply:</i></p>
Article 18 – National coastal strategies, Plans & Programmes, Tranboundary cooperation	
<p>1. Has a national strategy for integrated coastal zone management been prepared?</p>	<p><i>Reply:</i></p>
<p>2 . Are there up-to-date assessments of the use and management of coastal zone</p>	<p><i>Reply:</i></p>
<p>3. Are appropriate indicators defined in</p>	<p><i>Reply:</i></p>

<p>order to evaluate the effectiveness of integrated coastal zone management strategies, plans & programmes, as well as the progress of implementation of the Protocol?</p>	
<p>Article 19 - Environnemental assessment</p>	
<p>1. Have your Country formulate, as appropriate, a strategic environmental assessment of plans and programmes affecting the coastal zone?</p>	<p><i>Reply:</i></p>
<p>2. Are appropriate EIAs required for public and private projects likely to have significant environmental effects on the coastal zones?</p>	<p><i>Reply:</i></p>
<p>Article 20 - Land Policy</p>	
<p>1. Have appropriate land policy instruments and measures, including the process of planning</p>	<p><i>Reply:</i></p>
<p>2. Are there mechanisms for the acquisition, cession, donation or transfer of land to the public domain and institute</p>	<p><i>Reply:</i></p>

<p>easements on properties in the coastal zone?</p> <p>3. What is the area or percentage of land acquired in the Country?</p> <p>4. Who is responsible for the management of the land?</p> <p>5. Are there examples of private or non-governmental organizations established for the preservation of coastal land through protective?</p>	
<p>Article 21 – Economic, financial & fiscal instruments</p>	
<p>1. Have measures to adopt relevant economic. Financial and? Or fiscal instruments intended to support local, regional and national initiatives for the integrated management of coastal zone been adopted?</p> <p>2. Are there economic, financial and/ or fiscal instruments which are potentially counter to the objectives of the integrated</p>	<p><i>Reply:</i></p> <p><i>Reply:</i></p>

<p>management of the coastal zone?</p>	
<p>Article 22 – Natural hazards & coastal erosion</p>	
<p>1. Have vulnerability and hazard assessments of coastal zones been undertaken?</p>	<p><i>Reply:</i></p>
<p>2. Have prevention, mitigation and adaptation measures to address the effects of natural disasters, in particular of climate change, been implemented in coastal areas?</p>	<p><i>Reply:</i></p> <p>:</p>
<p>3. Have measures to maintain or restore the natural capacity by the rise in sea levels, been adopted?</p>	<p><i>Reply:</i></p>
<p>Article 24 – Response to natural disasters</p>	
<p>Do you have a national contingency plan for natural disasters affecting the coastal</p>	<p><i>Reply:</i></p>

<p>zone and responsible organization?</p>	
<p>Article 27– Exchange of information and activities of common interest</p>	
<p>1. Have coastal management indicators been defined, established or carried out?</p>	<p><i>Reply:</i> :</p>
<p>2. Have up-to-date assessments of the use and management of coastal zones been defined, established or carried out?</p>	<p><i>Reply:</i></p>
<p>3 : Have activities of common interest, such as demonstration projects of integrated zone management been defined, established or carried out ?</p>	<p><i>Reply:</i></p>
<p>4. Have Centres of specific ICZM scientific capacity been defined, established or carried out in your country?</p>	<p><i>Reply:</i></p>

Article 28– Transboundary cooperation	
In contiguous coastal zones are bilateral or multilateral national coastal strategies, plans and programmes coordinated?	<i>Reply:</i>
Article 29– Transboundary environmental assessment	
Is there cooperation by means of notification, exchange of information and consultation in assessing the environmental impacts of plans, programmes and projects?	<i>Reply:</i>

Draft Decision IG.22/17

**Reform of the Mediterranean Commission on Sustainable Development (MCSD)
And Updated MCSD Constitutive Documents**

The 19th Meeting of the Contracting Parties to the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling the Extraordinary COP (Montpellier, France, July 1996) adopting the Terms of Reference and Composition of the MCSD, and COP 10 (Tunis, Tunisia, November 1997) adopting the Rules of Procedure of the MCSD;

Recalling also Decision IG.17/5 “Governance Paper” of COP 15 (Almeria, Spain, January 2008); the Decision IG.20/13 of COP 17 (Paris, France, February 2012), and Decision IG.21/11 of COP 18 (Istanbul, Turkey, December 2013), which invited the Steering Committee of the MCSD to work on reforming the MCSD taking into account the need to sharpen the mandate of the MCSD, strengthen the role and contribution to integrate the environment in other public policies, and revise the constitutive documents of the MCSD accordingly;

Taking note of the report of the 16th Meeting of the MCSD (Marrakesh, Morocco, June 2015) in particular with respect to the reform of the MCSD which considered that there was a need for further Secretariat support to the work and the reform of the MCSD;

[Adopts] the amended Rules of Procedure, Terms of Reference and Composition of the MCSD, as provided in Annex I to this Decision;

Requests the Secretariat to improve MCSD visibility notably at the United Nations High Level Political Forum and other relevant fora at global and regional level, relying on UNEP institutional capacities;

Requests the Secretariat to consider the need for at least one face to face meeting of the MCSD Steering Committee in the intersessional period between MCSD Meetings;

Encourages the members of the MCSD to support this process by hosting the meetings of the Steering Committee, to enable at least one face to face meeting in a biennium;

Decides on the new non-Contracting Party membership of the MCSD, as proposed by the MCSD and its Steering Committee, which add the parliamentarian group and therefore brings the total number of MCSD Members from 37 to 40:

- **The Local Authorities Group:** Association of Italian Local Agenda 21, MEDCITIES, the Mediterranean Commission of the United Cities and Local Governments (UCLG);
- **The Socio-economic Stakeholders Group:** Arab Network for Environment and Development (RAED), Union of Mediterranean Confederations of Enterprises (UMCE), ANIMA Investment Network (Cooperation platform for economic development in the Mediterranean);
- **The Non-Governmental Organizations Group:** World Wide Fund for Nature – Mediterranean Programme Office (WWF MedPO), Environnement et Développement au Maghreb (ENDA-Maghreb), Mediterranean Information Office for Environment Culture and Sustainable Development (MIO ECSDE);
- **The Scientific Community Group:** Forum Euroméditerranée des Instituts de Sciences Economiques (FEMISE), Mediterranean Programme for International Environmental Law and Negotiation (MEPIELAN) and Mediterranean Sustainable Development Solutions Network (Med-SDSN);
- **The Intergovernmental Organizations Group:** International Union for the Conservation of Nature (IUCN), Union for the Mediterranean (UfM) Secretariat, Centre for Environment and Development for the Arab Region and Europe (CEDARE).

- Parliamentarians: Parliamentary Assembly of the Union for the Mediterranean (PA-UfM), Circle of Mediterranean Parliamentarians on Sustainable Development (COMPSUD), Parliamentary Assembly of the Mediterranean (PAM).

Requests the Secretariat, in accordance with Rule 5 paragraphs 1 and 3 to invite and involve as observers other UN bodies active in the Mediterranean, *inter alia* UNDP (RBAS and RBEC), UN-HABITAT, UNIDO, GFCM, FAO, UN ESCWA, UN WTO, UNECE, UNECA, UNESCO and the World Bank. Additionally, it should be considered to involve representatives of youth organizations to MCSD as observers;

Requests the Secretariat to invite e Palestine to attend future MCSD meetings as an observer;

Invites Contracting Parties to participate on a voluntary basis in a simple peer review process as described in Annex II of this Decision and requests the Secretariat to support this process;

Encourages MCSD Members to be more involved between meetings, participating in projects and actions to follow-up on the MSSD implementation, sharing good practices, knowledge transfer, and peer review, and enhance the visibility of the MCSD.

Annex I

**CONSTITUTIVE DOCUMENTS OF THE MEDITERRANEAN COMMISSION ON
SUSTAINABLE DEVELOPMENT**

RULES OF PROCEDURE, TERMS OF REFERENCE AND COMPOSITION

AMENDMENTS PROPOSED BY THE MCSD STEERING COMMITTEE

At its 16th Meeting (Marrakesh, Morocco, 9-11 June 2015) the MCSD recommended to update the constitutive documents of the MCSD, i.e. its 'rules of procedure, terms of reference and composition in order to reflect the Decision IG 17/5: Governance Paper taken at COP-15 (Almeria, Spain, 15-18 January 2008) and the MCSD recommendations at its 16th Meeting. This document is submitted to the 19th Ordinary Meeting of the Contracting Parties of the Barcelona Convention and its Protocols (Athens, Greece, 9-12 February 2016) for approval.

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COMPOSITION**

**MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT (MCSD)
RULES OF PROCEDURE**

[Note by the Secretariat: the original Rules of Procedure as contained in UNEP(OCA)/MED WG.140/Inf.4 of 1998 are updated to reflect recommendations by the MCSD at its 16th Meeting and by the Secretariat]

PURPOSE

Rule 1

The Rules of Procedure shall apply to the meetings of the Mediterranean Commission on Sustainable Development (MCSD). They complement the framework for operation of MCSD, as described by the "Terms of Reference" and the "Composition of the Commission" in the annexed documents adopted by the Contracting Parties.

DEFINITIONS

Rule 2

For the purpose of these rules:

1. the word "Commission" shall apply to the "Mediterranean Commission on Sustainable Development";
2. the term "Barcelona Convention" shall apply to the 1976 Convention for the Protection of the Mediterranean Sea against Pollution as amended in 1995;
3. the term "Coordinator" shall apply to the Coordinator or the Coordinating Unit of the Mediterranean Action Plan or his designated representative;
4. the term "Secretariat" shall apply to the Coordinating Unit of the Mediterranean Action Plan (MAP) as provided in article 17 of the Barcelona Convention as amended.

PLACE OF THE MEETINGS OF THE COMMISSION

Rule 3

The meetings of the Commission shall be held at the seat of the Coordinating Unit of MAP, unless convened in other Mediterranean venues in pursuance of a recommendation of the Commission approved by the meeting of the Contracting Parties.

During the time between the Parties' meeting the approval maybe given by the Bureau of the Parties to the Convention.

For reasons of optimal use of available resources, the meetings within the MCSD context may be coordinated as appropriate with other relevant MAP meetings.

DATES OF THE MEETINGS OF THE COMMISSION

Rule 4

The Commission will hold an ordinary meeting on a biannual basis and extraordinary sessions on a need-be basis. *[Note by the Secretariat: As per Almeria Decision IG.17/5]*

The Coordinator shall convene the meetings of the Commission.

The Commission shall, at its ordinary meetings, fix the opening date and the duration of the next meeting.

At the commencement of the first sitting of each meeting, the Commission shall elect the Steering Committee, which is composed of a President, five Vice-presidents and a Rapporteur, on the basis of an equitable geographical distribution, and among the various groups in accordance with the distribution indicated in Rule 17.

INVITATIONS

Rule 5

The Coordinator shall invite to send representatives to participate in the Commission's meetings as observers, the United Nations and its competent subsidiary bodies, and the Specialized Agencies if they participate in the activities of the Mediterranean Action Plan, or have direct concern with environment and sustainable development issues in the Mediterranean.

The Coordinator shall, in agreement with the Steering Committee, invite to send representatives to participate in the Commission's meetings as an observer, any state which is a member of the United Nations which so requests and has direct concern with environmental and sustainable development issues in the Mediterranean.

The Coordinator shall, in agreement with the Steering Committee, invite to send representatives to participate in the Commission's meetings as an observer, any other inter-governmental organization, including financial institutions, which would interest itself directly in issues of environmental protection and sustainable development in the Mediterranean, the activities of which are related to the functions of the Commission.

Such observers may, as provided in Article 20(2) of the Barcelona Convention as amended, participate in the Commission's meetings and may present any information or report relevant to the work of the Commission and in matters of direct concern to the organizations they represent.

PUBLICITY

Rule 6

Plenary sittings of the meetings of the Commission shall be held in public, unless the Commission decides otherwise. Sittings of subsidiary bodies of the meetings of the Commission shall be held in private, unless the meeting of the Commission decides otherwise.

AGENDA

Rule 7

In agreement with the Steering Committee of the Commission, the Coordinator shall prepare the provisional agenda for the meeting of the Commission and shall communicate it to the members of the Commission at least four weeks before the opening of the meeting together with supporting documents.

Rule 8

The provisional agenda of each meeting shall include:

1. all items mentioned under the “MANDATE” section of the Terms of Reference of the Commission;
2. all items the inclusion of which has been requested at a previous meeting of the Commission;
3. any item proposed by a member of the Commission;
4. an analytical report of the Coordinator containing information on relevant sustainable development activities, the progress achieved in the implementation of the MSSD and other relevant activities undertaken, and emerging issues to be addressed;
5. the reports of the Task Managers and the Thematic Working Groups as per Rule 20;
6. all items pertaining to the financial arrangements relevant to the Commission.

Rule 9

The Coordinator shall, in agreement with the Steering Committee of the Commission, include any question suitable for the agenda which may arise between the dispatch of the provisional agenda and the opening of the meeting in a supplementary provisional agenda which the meeting of the Commission shall examine together with the provisional agenda.

Rule 10

At the opening of an ordinary meeting of the Commission, the members of the Commission, when adopting the agenda for the meeting, may add, delete, defer or amend items. Only items which are considered by the meeting to be urgent and important may be added to the agenda.

Rule 11

At the beginning of each meeting, subject to the provision of Rule 10, the Commission shall adopt its agenda for the meeting on the basis of the provisional agenda and the supplementary provisional agenda referred to in Rule 9.

Rule 12

The Commission shall normally consider for the meeting only agenda items for which adequate documentation has been circulated to members four weeks before the beginning of the meeting of the Commission.

REPRESENTATION

Rule 13

All members of the Commission shall participate in the Commission on an equal footing.

Each member of the Commission shall be represented by representative accredited, who may be accompanied by such advisers as may be required.

Rule 14

The names of representatives and advisers shall be officially submitted by the members of the Commission to the Coordinator, before the opening sitting of a meeting which the representatives are to attend.

Rule 15

At the first sitting of each meeting of the Commission, the President of the previous ordinary meeting, or in his absence a Vice-President designated by him, shall preside until the meeting has elected a President for the meeting.

Rule 16

If the President is temporarily absent from a sitting or any part thereof, he shall appoint one of the Vice-Presidents to assume his duties.

STEERING COMMITTEE OF THE COMMISSION

Rule 17

The Steering Committee shall include four members representing the Contracting Parties, including *ex officio* the President of the Bureau of the Contracting Parties, and three representatives from the six categories foreseen by the Terms of Reference of the MCS D.

At the commencement of the first sitting of each meeting, the Commission shall elect the Steering Committee, which is composed of a President, five Vice-presidents and a Rapporteur, on the basis of an equitable geographical distribution, and among the various groups in accordance with the distribution indicated in the paragraph above.

Rule 18

The MCS D Steering Committee oversees the work of the MCS D between sessions. The Steering Committee meets regularly on annual basis during the biennium - at least one of these meetings is to be face-to-face.

The work of the Steering Committee is supported by the Secretariat. In order to secure the necessary financial means, the Secretariat shall include adequate provisions in its biennial Programme of Work and Budget to be discussed and agreed by the Contracting Parties.

Members of the Commission are encouraged to hosting the meetings of the Steering Committee.

Rule 19

The President, or in his absence one of the Vice-Presidents designated by him shall serve as President

of the Steering Committee.

If a member of the Steering Committee resigns or otherwise becomes unable to continue to perform his functions, a representative of the same member of the Commission shall replace him for the remainder of his mandate.

ORGANIZATION OF THE MEETINGS OF THE COMMISSION

Rule 20

During the course of a meeting, the Commission shall establish thematic working groups and other working groups as it deems necessary, and to refer to them the themes identified by the Commission as of great importance for the sustainable development of the Mediterranean region for study, and proposal. Such working groups could sit while the Commission is not in session, ensuring thus, together with the Steering Committee, the continuity of the Commission between its sessions.

Unless otherwise decided, the Commission shall select task managers for each thematic working group and a chairman for other working groups.

The Commission shall define the mandate and composition of the working groups and Task Managers.

Rule 21

The Coordinator shall act as Secretary of any meeting of the Commission. He may delegate his functions to a member of the Secretariat.

Rule 22

The Coordinator shall provide the staff required by the Commission and shall be responsible for all the necessary arrangements for meetings of the Commission.

Rule 23

The Secretariat shall arrange for interpretation of speeches, receive, translate and circulate the documents of the meetings of the Commission and its working groups; publish and circulate the decisions, reports and relevant documentation of the meeting of the Commission. It shall have custody of the documents in the archives of the meeting of the Commission and generally perform all other work that the Commission may require.

LANGUAGES OF THE COMMISSION

Rule 24

Arabic, English, French and Spanish shall be the official languages of the Commission. English and French shall be the working languages of the Commission if available financial resources do not allow for the use of the four official languages. English and French shall be the working languages of meetings of the Steering Committee of the Commission and of working groups.

CONDUCT OF BUSINESS

Rule 25

The Rules of procedure for Meetings and Conferences of the Contracting Parties concerning Conduct of Business (Rules 30-41) shall apply *mutatis mutandis* to the Conduct of Business in the meetings of the Commission.

PROPOSALS OF THE COMMISSION

Rule 26

Proposals of the Commission shall be adopted by consensus. These proposals will be presented to the Contracting Parties' meetings.

RECORDS OF THE MEETINGS OF THE COMMISSION

Rule 27

Sound records of the meetings of the Commission shall be kept by the Secretariat in accordance with the practice of the United Nations.

AMENDMENTS OF PROCEDURE

Rule 28

Any amendments of the Rules of Procedure should be approved, after proposal of the Commission, by the meeting of the Contracting Parties to the Barcelona Convention.

MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT TERMS OF REFERENCE

[Note by the Secretariat: The text of the original terms of reference as per Document UNEP(OCA)/MED WG.140/INF.4 of 1998 is replaced by the “New Terms of Reference for the MCSD” as per Decision IG.17/5. The latter is also updated and revised to reflect the recommendations taken by the MCSD at its 16th Meeting and by the Secretariat.]

[Note by the Secretariat: As indicated in the previous note by the Secretariat, the following text is the “New Terms of Reference for the MCSD” as per Decision IG.17/5, updated and revised to reflect the recommendations taken by the MCSD at its 16th Meeting and by the Secretariat.]

Introduction

1. The Mediterranean Commission for Sustainable Development (MCSD) was established in 1995 in the framework of the Mediterranean Action Plan (MAP) as an advisory body to the Contracting Parties to assist them in their efforts to integrate environmental issues in their socioeconomic programmes and, in so doing, promote sustainable development policies in the Mediterranean region. The Commission is unique in its composition, in as much as government representatives, local communities, socioeconomic actors, IGOs and NGOs participate on an equal footing. The MCSD has so far carried out high-quality undertakings, mobilising work on priority themes for the Mediterranean, notably, water resources, integrated coastal zone management, tourism, industry etc., and developing the Mediterranean Strategy for Sustainable Development.

A. PURPOSE

2. The purpose of the MCSD is to assist the Contracting Parties to the Barcelona Convention to implement the objectives of sustainable development and other regional or local actors in their efforts to promote sustainable development in the Mediterranean region and to integrate environmental issues in their socio-economic programmes.

B. MANDATE

3. The MCSD is an advisory body to the Contracting Parties of the Barcelona Convention and represents a forum for debate with essentially the following mission:

- To assist Mediterranean countries and other stakeholders active in the region in the adoption and implementation of sustainable development policies, particularly the integration of environmental considerations into other policies;
- To ensure the follow-up of MSSD implementation through appropriate tools, mechanisms and criteria that would better enhance an efficient follow-up function;
- To promote the exchange of experience and good practices regarding the integration of environmental and socioeconomic policies, as well as examples which show the application of international sustainable development commitments at suitable scales in different countries;
- To identify the obstacles encountered and support regional and subregional cooperation for the effective implementation of the sustainable development principle;
- To coordinate the periodical drafting of the report on the state of implementation of the MCSD recommendations;
- To produce opinions of the overall MAP Work Programme, with the aim of integrating sustainability considerations into the MAP / Barcelona Convention system as a whole.

- To produce opinions and recommendations for integration and coordination of the work of the MCSD with the other existing international and regional sustainable development and environmental programmes, policy frameworks and initiatives.

C. FUNCTIONING

4. Each session of the Commission will focus on sectoral issues relevant to the MSSD, as well as other emerging sustainability issues.

5. MCSD recommendations will be presented for consideration to the Meeting of the Contracting Parties, following discussion at the meeting of the MAP Focal Points. The conclusions of the meetings should influence the Programme of Work of the MAP system, and the implementation of the Barcelona Convention by the Contracting Parties.

D. REPORTS

6. Before each session, each member should provide a concise report focusing on the implementation of MSSD and MCSD recommendations, following a template prepared by the Secretariat. The Secretariat will then prepare a summary report to be presented at the beginning of each session.

7. The analytical report of the Coordinator as per Rule 8 paragraph 4 of the Rules of Procedure will also include reports by the Regional Activity Centres (RACs) on the implementation of MSSD and MCSD recommendations relevant to their line of work.

MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT COMPOSITION

[Note by the Secretariat: The following chapter is based on UNEP(OCA)/MED WG.140/Inf.4, and reflects the definition of MCSD composition as per Almeria Decision IG.17/5, and recommendations by the MCSD at their 16th Meeting and by the Secretariat]

Introduction

1. The MCSD is an advisory body to the Contracting Parties to the Barcelona Convention and a forum for debate and exchange of experiences on sustainable development issues that concern all interested parties in the Mediterranean region. It is appropriate to involve the greatest possible variety of actors in the work of the Commission, so as to ensure the greatest possible dissemination of the concepts promoted by the MCSD.

A. NUMBER OF REPRESENTATIVES

2. The Commission shall be composed of 40 members, consisting of:

- 22 representatives designated by the competent bodies of the Contracting Parties
- 3 representatives of local authorities
- 3 representatives of NGOs
- 3 representatives of socio- economic stakeholders
- 3 representatives of the scientific community
- 3 representatives of intergovernmental organizations working in the field of sustainable development
- 3 representatives of regional parliamentary associations

3. Efforts should be made to ensure participation of representatives from both the environmental and development fields related to the topics of the agenda of each meeting of the MCSD. Appropriate geographical representation and media participation should be ensured.

4. Each Contracting Party to the Barcelona Convention shall be represented by one high-level representative (total 22), who may be accompanied by such alternates and advisers as may be required, in order to ensure interdisciplinary participation of relevant ministerial bodies of the Contracting Parties (e.g. ministries of environment, tourism, economy, development, industry, finance, energy, etc.).

5. All members shall participate in the Commission on an equal footing.

B. METHOD OF NOMINATION OF CANDIDATES OTHER THAN THOSE REPRESENTING THE CONTRACTING PARTIES

6. The Contracting Parties, MCSD members and the Secretariat (in consultation with UNEP/MAP Components, as appropriate) may nominate members of the Commission, other than those representing the Contracting Parties, based on written expressions of interest, and criteria and modalities provided for in Decision IG.19/6 on "MAP/Civil society cooperation and partnership".

Each biennium, the Steering Committee of the Commission, with the assistance of the Secretariat, shall review the list of the MCSD members, particularly in the light of those members whose mandate may be drawing to a close, and decide on any changes required.

The list of candidates shall be submitted for adoption by the next Ordinary Meeting of the Contracting

Parties.

7. The following general selection criteria will apply:

- I. The criteria established in Decision 19/6 on “MAP/ Civil society cooperation and partnership” shall be used as a reference text for selection of members representing NGOs.
- II. Priority for selection shall be given to Mediterranean local authorities, NGOs, socio-economic stakeholders, the scientific community, and intergovernmental organizations that are concerned with environmental and sustainable development issues in the Mediterranean.
- III. The principle of equitable geographical distribution should be respected (north/south and east/west).
- IV. Fragile and island ecosystems will be given due consideration;
- V. With reference to the six specific categories, the following are the selection criteria, giving priority to the groups or networks concerned:

(i) Local Authorities

Local authorities to be selected should be concerned with environmental and sustainable development issues.

(ii) Socio-economic Actors

Selection within this group should take into consideration the major problems and decisive factors in the Mediterranean as well as the following factors:

- north/south representation
- developed/developing countries
- rural/urban
- past and current activities at the Mediterranean level.

Priority of selection shall be given to socio-economic networks active in the Mediterranean.

(iii) NGOs

The members representing NGOs should be selected from the list of MAP/NGO partners.

The members should be selected from among three NGO categories, with priority being afforded in the following order:

- NGOs with regional or sub-regional Mediterranean scope
- NGOs with global scope
- NGOs with national or local scope

The NGOs to be selected should have a concrete and action-oriented approach towards the Mediterranean

(iv) IGOs

The members representing IGOs should be selected from organizations with global and/or regional scope, with mandates and activities of direct relevance to the work of the MCSD and the implementation of the MSSD.

(v) Scientific Community

The members representing the scientific community should be selected from among academic/research institutions and individuals with a proven track of relevant work and interest in fields of environment and sustainable development in the Mediterranean.

(vi) Parliamentarians

The members representing Parliamentary Associations should have a Mediterranean regional or sub-regional scope and include individuals with experience in the field of sustainable development.

8. The Secretariat shall develop with inputs from Contracting Parties, MCSD members and UNEP/MAP Components a roster of organizations and individuals from the above categories to be used for future nominations as members of the MCSD.

C. DURATION OF THE MANDATE

9. The duration of the membership of the Commission shall be as follows:

- I. All Contracting Parties to the Barcelona Convention shall be permanent members of the Commission;
- II. Three representatives from each of the six categories, shall be selected for a duration of two biennia by the meeting of the Contracting Parties. Their mandate is renewable for one additional term
- III. When members do not attend the Commission meetings, enquiries shall be forwarded by through the Steering Committee through the Secretariat to identify and address the reasons for the non-attendance. Non-Contracting Party organizations who have not attended two successive meetings of the MCSD should be considered for replacement.

Annex II
PEER REVIEW

Introduction

The Contracting Parties to the Barcelona Convention have been developing national activities and putting in place structures and processes pertaining to sustainable development, with varying degrees in scope, content, approach and level of implementation. They are also engaged, at the regional level, in the activities developed in the framework of the Mediterranean Action Plan – Barcelona Convention in the fields of environmental governance and sustainable development.

The approaches for the development of sustainable development policies and actions are diverse and consist, generally, of cyclical and interactive approaches for planning, participation and action to foster progress towards sustainability goals. Globally, one of the key noted weaknesses is the feedback mechanisms, including monitoring, learning and adaptationⁱ. Similarly, the Contracting Parties, collectively, or individually, are facing varying challenges in elaborating, implementing, monitoring and reviewing their strategic and operational actions towards sustainable development.

These challenges offer a great potential for exchange of experiences and sharing of good practice, as well as gathering information that could be used for the assessment of progress across the Mediterranean in terms of adoption and implementation of sustainable development in general and more specifically of Mediterranean Strategy for Sustainable Development.

As recommended by the 15th Ordinary Meeting of the Mediterranean Commission on Sustainable Development (MCSD), and endorsed by the 18th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (COP 18), there is clear potential and need for putting in place a simplified and affordable peer review process through which Mediterranean countries will exchange on their respective experiences and share good policies and practices on implementing sustainable development at a national level: a process for learning from other experiences and adaptation of national approaches.

Mandate to put in place a simplified peer review

The mandate to prepare a proposal on putting in place a simplified peer review is given by the Contracting Parties to the Barcelona Convention, through the adoption of the Decision IG. 21/12, at their 18th Ordinary Meeting (COP 18) in Istanbul, December 2013. Key statements of this Decision read as follows (excerpts):

- *Request the MCSD to encourage, through its meetings and operations, the exchange of good practice; and*
- *Request the Secretariat to prepare a proposal for the consideration of the MCSD on how a simplified peer review process could be put in place.*

This decision was based on the recommendations of the 15th Ordinary Meeting of the MCSD (Floriana, Malta, June 2013) on the reform of the MCSD and its mission. Among these recommendations were:

- *In terms of the periodic review of national implementation of the MSSD, a simplified peer-review mechanism was suggested by several participants as a way to upgrade the very useful role of the MCSD as a regional platform for exchanges of experiences on sustainable development which the MCSD had always been useful for; and*
- *Encourage the exchange of good practice, for which a simplified peer review could be a tool.*

Examples of peer review mechanisms

According to the Organisation for Economic Co-operation and Development (OECD), “peer review is basically an examination of one state’s performance or practices in a particular area by other states. The point of the exercise is to help the state under review improve its policymaking, adopt best

practices and comply with established standards and principles". It relies heavily on mutual trust among the actors involved, as well as on their shared confidence in the processⁱⁱ.

Although there is no single recipe or a standardized mechanism for the peer review, there are certain structural elements shared by all existing peer reviewsⁱⁱⁱ: (i) a basis for proceeding; (ii) an agreed on set of principles, (iii) standards and criteria against which the performance of the reviewed country will be assessed; (iv) designated players to carry out the review; and (v) a set of procedures leading to the final result.

Among the existing peer reviews, three are relevant to the development of a simplified peer review process as they represent two different approaches: OECD peer review, BRICS+G and African Peer Review Mechanism (APRM).

The OECD peer review process – A tool for cooperation and change^{iv}: Defining the peer review as a combination of the activity of several actors (the body within which the review is undertaken; the reviewed country; the examiner countries; and the Organisation Secretariat), the procedure consists of three major phases:

- The preparatory phase: The first phase of the review often consists of background analysis and of some form of self-evaluation by the country under review. This phase includes work on documentation and data as well as a questionnaire prepared by the Secretariat.
- The consultation phase: The examiner countries and the Secretariat conduct the consultation by maintaining close contact with the competent authorities of the reviewed country, and in some cases, they carry out site visits. At the end of this phase, the Secretariat prepares a draft of the final report.
- The assessment phase: The draft report is discussed in the plenary meeting of the body responsible for the review. The examiners lead the discussion, but the whole body is encouraged to participate extensively. Following discussions, and in some cases negotiations, the final report is adopted, or just noted, by the whole body.

BRICS+G - Dialogue About Sustainability And Growth In Six Countries - Brazil, Russia, India, China, South Africa (the BRICS) and Germany^v: This is a platform for exchange among experts (government, economic actors and civil society) of the countries involved about their experiences with sustainability and growth, with emphasis on: (i) examples from thematic areas such as energy, resource management and the social dimension, and (ii) concrete experiences with designing, managing and implementing national strategies for sustainability or comparable approaches. It consists of national conferences within which discussions are guided by four lead questions (excerpts from^{vi}):

- *What is the current state of the National Strategy for Sustainable Development (Overview/Stocktaking)?*
- *How is the National Strategy for Sustainable Development linked to Sector Policies (evaluating experiences from at least two exemplary sectors: Energy, Natural Resources and /or the Social Dimension)?*
- *What were factors for successes and failures of the national Sustainable Development Strategy and why? What consequences are being drawn?*
- *What are the conclusions regarding the relation of the national Sustainable Development Strategy, sustainability and growth?*

African Peer Review Mechanism (APRM)^{vii}: In the framework of NEPAD^{vii}, the APRM has been put in place with the mandate to ensure that the policies and practices of participating countries conform to the agreed values in the following four focus areas: democracy and political governance, economic governance, corporate governance and socio-economic development. As part of the APRM there are

periodic reviews of the participating countries to assess progress being made towards achieving the mutually agreed goals.

Structurally the peer review mechanism is constituted as such:

- The Committee of Participating Heads of State and Government (APR Forum) is the highest decision making authority in the APRM;
- The Panel of Eminent Persons (APR Panel) oversees the review process to ensure integrity, considers reports and makes recommendations to the APR Forum;
- The APRM Secretariat provides secretarial, technical, coordinating and administrative support for the APRM; and
- The Country Review Mission Team (CRM Team) visits member states to review progress and produce an APRM Report on the country.

Based on the above mentioned MCSD recommendations and the requests of the Decision IG. 21/12, it is suggested to consider the BRICS+G approach for dialogue as basis for a simplified peer review, with a suggestion of “designated actors” based on the OECD approach. The reasons for this choice are among others: (i) the approach consist of a dialogue among willing countries and it is not a classical “peer review”; (ii) in addition to their voluntary commitment, the countries engaged in the simplified peer review are required to contribute their own resources (human and financial) throughout the process; and (iii) an equal participation of all involved countries without focus on a specific country’s structures and processes.

Proposed simplified peer review on implementing sustainable development for Mediterranean countries

Aim

To undertake a simplified peer review, in form of a dialogue about national sustainable development structures and processes through which two or more Mediterranean countries engage in a mutual improvement and learning process. This peer review mechanism will contribute to Mediterranean Strategy for Sustainable Development (MSSD) implementation.

Scope

The thematic scope of the peer review process will be the reviewed country’s overall structures and processes that have been put in place to implement sustainable development at the national level, with focus placed on concrete experiences in designing, managing, implementing and monitoring national policies and activities for sustainability. One or more proposed MSSD objectives, along with their social dimension, might be the core themes for exchange and dialogue. Proposed MSSD objectives are: 1. Ensuring sustainable development in marine and coastal areas; 2. Promoting resource management, food production and food security through sustainable forms of rural development; 3. Planning and managing sustainable Mediterranean cities; 4. Addressing climate change as a priority issue for the Mediterranean; 5. Transition towards a green and blue economy; 6. Improving governance in support of sustainable development.

Underlining Principles

The following main principles are essential to the peer review process:

Voluntary: The involvement in the simplified peer review process is entirely voluntary and it is the choice of two or more countries to undertake a collaborative meaningful process of mutual improvement and learning.

Learning by doing and sharing: Countries involved engage in constructive and positive joint process based on gathering and sharing information on respective practices and experiences.

Participatory: The participation of relevant national stakeholders (e.g. government departments, economic actors, civil society), at the level of experts and/or practitioners, is crucial to the success and credibility of the process.

Flexibility: There should be sufficient flexibility so that involved countries can agree adapted and adequate thematic scopes as well as procedures leading to final results.

Enabling conditions

Commitment and ownership: The improvement and learning process can function properly only if there is an adequate level of commitment of and ownership by the involved countries. The political back-up is essential to its success.

Resources: Involved countries should secure sufficient resources (financial and human) to undertake this joint cooperative process. If Contracting Parties agree, Mediterranean Trust Fund may contribute to two workshops per biennium as part of the Programme of Work. External funding shall also be sought.

Criteria for success

Value sharing: Participating countries should share the same views on the standards and criteria for a successful improvement and learning process.

Mutual trust: A climate of mutual respect and sharing and large degree of mutual trust are important to the success of the improvement and learning approach.

Credibility: The effectiveness of the improvement and learning process heavily relies on the credibility of the review process and its mechanisms. For this it is key to involve an independent body (namely UNEP/MAP staff supporting the MCSD and staff from Plan Bleu) and, if at all possible, external experts (from another country or organization).

Mechanism

Designated Actors: A proper functioning of the simplified peer review requires the active involvement of the following actors:

- The participating countries: Two or more countries will be involved in the improvement and learning process. The participation of at least three countries would be a more effective option as it will enrich the exchanges and dialogue, provided sufficient funds are secured by the countries themselves or through a third party. The Coordinating Unit of the Mediterranean Action Plan will initiate the process through a call for proposals, for the Contracting Parties, to undertake a bilateral or multi-lateral improvement and learning process.
- Entity in charge: The MCSD, through its supporting staff at UNEP/MAP, will be the overall collective body within which the review is undertaken. This is in line with COP 18 Decision IG. 21/12, requesting the MCSD to encourage, through its meetings and operations, the exchange of good practice.
- Organization Secretariat: The Coordinating Unit of the Mediterranean Action Plan, through its staff supporting the MCSD, along with the support of Plan Bleu, will be the entity responsible for the peer review. It will, among others, support the process by

producing documentation and analysis, facilitating interactions with involved countries, organising meetings, stimulating the exchanges and ensuring conformity and continuity.

- External experts: Depending on the scope of the improvement and learning process the participating countries will chose, there might be a need to involve external experts who can bring an independent perspective and enhance the credibility of the process.

Functioning: The proposed approach is not a classical peer review, but rather a cooperative, constructive and positive process of mutual improvement and learning. It should operate on the following basis:

- Guiding principles: (i) concerned countries participate at an equal level (no reviewed country, no examiner country); (ii) in-country multi-stakeholders involvement (government, economic actors, NGOs, civil society, academia, etc.); and (iii) high ranking participation to ensure credibility and commitment.
- Guiding questions: The participating countries, with the assistance of the Organization Secretariat and the guidance of the MCSD Steering Committee, should agree on lead questions that will guide the overall dialogue discussions and related round-tables.
- Implementation process: It should consist of (i) national preparatory round-tables; (ii) international (bilateral) joint meeting, and (iii) joint presentation of the outcomes at the MCSD Meeting.

Sought benefits for involved countries

Enhanced cooperation and partnership: The improvement and learning process can further the cooperation among the involved countries, and lead to enhanced partnerships among various stakeholders, nationally and internationally.

Contribution to capacity-building: The proposed process can be an important capacity building instrument. It will foster sharing information and skills, benefiting concerned countries and involved stakeholders. The national experts and/or practitioners, otherwise focussed on domestic issues, will be engaged in international exchanges and experiences.

Encouragement and enhancement of compliance: As the Mediterranean countries are engaged in environmental governance, under the Barcelona Convention and its Protocols, this improvement and learning process offers a platform for encouraging and enhancing the compliance for the Contracting Parties.

Cost-effectiveness: The participating countries will have access to expertise from other countries, free of charge. This simplified form of peer review will be definitely be more cost-effective than the expensive assessments by consultants and specialised firms.

ⁱ Swanson DA and Pinter L et al. (2004): National Strategies for Sustainable Development: Challenges, Approaches and Innovations in Strategic and Co-ordinated Action International Institute for Sustainable Development (IISD).

ⁱⁱ <http://www.oecd.org/site/peerreview/peerreviewataglance.htm>

ⁱⁱⁱ <http://www.oecd.org/site/peerreview/howdoesitwork.htm>

^{iv} <http://www.oecd.org/site/peerreview/theprocedures.htm>

^v PRIME-SD - Peer Review Improvement through Mutual Exchange on Sustainable Development: A guidebook for peer reviews of national sustainable development strategies; 2006.

^{vi} PRIME-SD - Peer Review Improvement through Mutual Exchange on Sustainable Development: A guidebook for peer reviews of national sustainable development strategies; 2006.

^{vii} The New Partnership for Africa's Development (NEPAD), an African Union strategic framework for pan-African socio-economic development, is both a vision and a policy framework for Africa in the twenty-first century. NEPAD is a radically new intervention, spearheaded by African leaders, to address critical challenges facing the continent: poverty, development and Africa's marginalisation internationally.

Draft Decision IG.22/18
Cooperation and Partners

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling the Marrakesh Declaration of 2009 and *reaffirming* the commitment of the Contracting Parties to the Barcelona Convention to continue strengthening synergy, cooperation and partnership with relevant regional and global institutions and initiatives;

Recalling Decision IG.19/6 on MAP/Civil society cooperation and partnership of COP 16 (Marrakesh, Morocco, November 2009) and Decision IG.20/13 on Governance of COP 17 (Paris, France, February 2012);

Further recalling Decision IG.21/14 on Cooperation Agreements of COP 18 (Istanbul, Turkey, November 2013);

Having considered the reports of the 78th, 79th and 80th meetings of the Bureau regarding Cooperation Agreements with relevant regional and international organisations as well as MAP partners;

Recognising the need to enhance coordination among international and regional marine pollution response and assistance mechanisms and institutions in order to face major accidental pollution in the Mediterranean in the most effective manner;

Endorses the list of new MAP Partners attached as Annex I to this Decision;

Welcomes the cooperation agreement contained in Annex II of this Decision and ***invites*** the Secretariat of the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS) to sign it;

Further Welcomes the cooperation agreement contained in Annex III of this Decision and ***invites*** the Permanent Secretariat of the Commission on the Protection of the Black Sea Against Pollution (BSC PS) to sign it;

Requests the Secretariat to initiate discussions with relevant regional and international organisations with the aim to optimise synergies and coordination on response and assistance in case of major accidental pollution in the Mediterranean; and

Requests the Secretariat to further expand the cooperation with regional and international organisations, bilateral and multilateral cooperation agencies, and other relevant actors, including the private sector, with a view to mobilising as many actors as possible in support of implementing in a coherent, synergistic and effective manner the priorities established by the Contracting Parties.

ANNEX I

List of New MAP Partners

LIST OF NEW MAP PARTNERS

The following institutions are accredited as new MAP Partners:

- Aegean Energy Agency (AEA)
- Arab Network for Environment and Development (RAED)
- Arab Office for Youth & Environment (AOYE)
- Association for Nature, Environment and Sustainable Development (SUNCE)
- Association of Continuity of Generations (ACG)
- Egyptian Sustainable Development Forum (ESDF)
- Global Balance Association
- Institut de Prospective Economique du Monde Méditerranéen (IPEMED)
- Mediterranean Association to Save the Sea Turtles (MEDASSET)
- Slovenian Marine Mammal Society (MORIGENOS)
- Turkish Marine Environment Protection Association (TURMEPA)

ANNEX II¹

Memorandum of Understanding

Between

**Secretariat of the Barcelona Convention of the Barcelona Convention and the Mediterranean
Action Plan (Barcelona Convention-UNEP/MAP)**

And

**The Permanent Secretariat of the Agreement on the Conservation of Cetaceans of the Black
Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)**

¹ Final version pending clearance by UNEP Headquarters.

MEMORANDUM OF UNDERSTANDING**BETWEEN****SECRETARIAT OF THE BARCELONA CONVENTION AND THE MEDITERRANEAN ACTION PLAN (UNEP/MAP-Barcelona Convention)****AND****THE PERMANENT SECRETARIAT OF THE AGREEMENT ON THE CONSERVATION OF CETACEANS OF THE BLACK SEA, MEDITERRANEAN SEA AND CONTIGUOUS ATLANTIC AREA (ACCOBAMS)**

WHEREAS the United Nations Environment Programme (hereinafter referred to as UNEP) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment;

WHEREAS the Secretariat of the Barcelona Convention and the Mediterranean Action Plan (hereinafter referred to as UNEP/MAP-Barcelona Convention) is administered by UNEP and has the mandate as per the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean adopted in 1976 and revised in 1995, to assist the Mediterranean countries, with its main objectives through its seven protocols respectively to assess and control marine pollution; to ensure sustainable management of natural marine and coastal resources; to address common challenges related to the prevention and reduction of pollution from land-based sources, ships, dumping, off-shore installations and the movement of hazardous substances; to ensure the protection of biodiversity; and, the integrated management of coastal zones;

WHEREAS UNEP/MAP has also the mandate to assist in the implementation of the Mediterranean Action Plan (MAP) which was adopted in 1975 and became MAP II after its revision in 1995;

WHEREAS in this context, the Contracting Parties to the Barcelona Convention adopted Regional Strategies, Actions Plans and Programmes as well as put in place regional structures including a consolidated system of focal points, the Secretariat and six Regional Activity Centers², which have a mandate for carrying out activities aimed at facilitating implementation of the seven Protocols of the Barcelona Convention, the decisions of the Meetings of the Contracting Parties to the Barcelona Convention and its Protocols;

WHEREAS the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS) was adopted in 1996 as a result of a consultation process involving the Secretariat of the 1979 Convention on the Conservation of European Wildlife and Natural Habitats ("Bern Convention), the 1979 Convention on the Conservation of Migratory Species of wild animals ("Bonn Convention" or CMS) and the 1995 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean ("Barcelona Convention") and its Protocols;

WHEREAS the ACCOBAMS aims to achieve and maintain a favourable conservation status for cetaceans through measures to eliminate deliberate killing of cetaceans and to mitigate the impacts of harmful human activities;

² Six MAP Regional Activity Centres (RACs) are based in Mediterranean countries, each offering its own environmental and developmental expertise for the benefit of the Mediterranean community in the implementation of MAP activities. These six RACs are the following: 1.Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)-Malta, 2.Blue Plan Regional Activity Centre (BP/RAC)-France, 3.Priority Actions Programme Regional Activity Centre (PAP/RAC)-Croatia, 4. Specially Protected Areas Regional Activity Centre (SPA/RAC)-Tunisia, 5.Cleaner Production Regional Activity Centre (CP/RAC) –Spain and, 6. INFO/RAC-Italy.

WHEREAS the Secretariat of the ACCOBAMS (hereinafter referred to as ACCOBAMS Secretariat) has in its mandate to liaise and facilitate co-operation with international and national bodies whose activities are directly or indirectly relevant to the conservation of cetaceans in the ACCOBAMS Agreement area;

WHEREAS UNEP/MAP-Barcelona Convention and ACCOBAMS (hereinafter collectively referred to as “the Parties”) share common objectives with regard to the conservation, protection, enhancement and support of nature and natural resources, including biological diversity, and wish to collaborate to further these common goals and objectives within their respective mandates and governing rules and regulations;

WHEREAS the 14th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Portoroz, Slovenia, 8-11 November 2005) recommended the Contracting Parties to recognize that common obligations relating to cetaceans under the Specially Protected Areas and Biodiversity Protocol are fulfilled by the implementation of ACCOBAMS.

WHEREAS the 18th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Istanbul, 3-6 December 2013) welcomed the steps taken by UNEP/MAP-Barcelona Convention for the initial discussions regarding a cooperation agreement with ACCOBAMS, and requested UNEP/MAP-Barcelona Convention to finalize the agreement;

WHEREAS several UNEP/MAP-Barcelona Convention regional activity centers and Programmes address issues of importance for ACCOBAMS;

WHEREAS Resolution 1.4 approved at the First Meeting of the Parties to ACCOBAMS entrusted the RAC/SPA of UNEP/MAP-Barcelona Convention with the duties of the ACCOBAMS Coordination Unit for the Mediterranean region;

WHEREAS an Action Plan for the conservation of cetaceans in the Mediterranean Sea was adopted in 1991 by the Contracting Parties to the Barcelona Convention at their Seventh Ordinary Meeting and for which RAC/SPA provides technical follow-up for its implementation;

WHEREAS the Parties share common goals and objectives with regard to conservation of marine environment and ecosystems in the Mediterranean region and intend to conclude this Memorandum of Understanding (hereinafter referred to as “MoU”) with the aim of consolidating, developing and detailing their cooperation and effectiveness to achieve the common objectives and strengthen regional synergy within their respective mandates and governing rules and regulations;

NOW, THEREFORE, UNEP/MAP-Barcelona Convention AND THE ACCOBAMS SECRETARIAT HAVE AGREED TO COOPERATE UNDER THIS MEMORANDUM OF UNDERSTANDING AS FOLLOWS:

Article 1
Interpretation

1. References to this MoU shall be construed as including any Annexes, as varied or amended in accordance with the terms of this MoU. Any Annexes shall be subject to the provisions of this MoU, and in case of any inconsistency between an Annex and this MoU, the latter shall prevail.
2. Implementation of any subsequent activities, projects and programmes pursuant to this MoU, including those involving the transfer of funds between the Parties, shall necessitate the execution of appropriate legal instruments between the Parties. The terms of such legal instruments shall be subject to the provisions of this MoU.
3. This MoU represents the complete understanding between the Parties and supersedes all prior MoUs, communications and representations, whether oral or written, concerning the subject matter of this MoU.

4. Any Party's failure to request implementation of a provision of this MoU shall not constitute a waiver of that or any other provision of this MoU.

Article 2

Duration

1. This MoU shall be effective upon the last date of signature of the approving officials and remain in effect for three years, unless terminated in accordance with Article 15 below.

Article 3

Purpose

1. Having regard to the respective mandates of the Parties, the purpose of this MoU is to provide a framework of cooperation and understanding, and to facilitate collaboration between the Parties to further their shared goals and objectives in regard to the conservation of marine environment and ecosystems in their fields of competence.
2. The objectives of this MoU shall be achieved through:

- a. Regular dialogue and meetings between UNEP/MAP-Barcelona Convention and the ACCOBAMS Secretariat;
- b. Execution of separate legal instruments between the Parties to define and implement any subsequent activities, projects and programmes pursuant to Article 1.2.

Article 4

Areas of Cooperation

1. Areas of Cooperation are agreed jointly through the cooperation mechanism in the MoU. Policies and priorities under this MoU may also be jointly updated by the Parties pursuant to Article 5 to allow the Parties to respond to newly emerging issues in the realm of environment and sustainable development.
2. The Parties have agreed to the following preliminary and overarching areas of cooperation for this MoU, which form part of UNEP/MAP-Barcelona Convention's mandate and programme of work and have been approved by Ordinary Meetings of Contracting Parties to Barcelona Convention. The areas of cooperation items listed below are also priorities or ongoing activities of the ACCOBAMS Secretariat, in accordance with its mandate. All could be strengthened through the cooperation of the Parties.
 - a. Collection and assessment of information relating to the conservation of cetaceans;
 - b. Identification, protection and management of marine areas of particular importance for cetaceans, in particular transboundary areas and areas beyond the national jurisdiction of coastal States;
 - c. Promotion of ecosystem based approaches for the conservation of marine environment and ecosystems through the assessment, monitoring and mitigation of adverse human-cetacean interactions, such fisheries, ship strikes, offshore noise-producing activities and marine litter;
 - d. Legal, institutional and policy related cooperation;
 - e. Development of capacity building activities (e.g. training programmes, dissemination of relevant information, building awareness, etc.).
3. The above list is not exhaustive and should not be taken to exclude or replace other forms of cooperation between the Parties on other issues of common interest. The details about the activities to be developed under the areas of cooperation indicated above are included in, but not limited to, the Appendix to this MoU. The Annex shall be reviewed by the Parties every three (3) years in order to adapt it to the activities and possible new orientations that might be decided by the respective governing bodies of the UNEP/MAP-Barcelona Convention and/or the ACCOBAMS Agreement.

4. Specific activities may be identified and will be carried out on the basis of separate legal instruments established between the ACCOBAMS Secretariat and UNEP/MAP-Barcelona Convention, as well as between the ACCOBAMS Secretariat and one or more components of the UNEP/MAP-Barcelona Convention, including the Regional Activity Centre for Specially Protected Areas (RAC/SPA), the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) and the Med POL Programme.
5. In particular, a Memorandum of Understanding will be concluded, and regularly reviewed between the ACCOBAMS Secretariat and RAC/SPA in its quality of ACCOBAMS sub-regional Coordination unit in the Mediterranean. It will cover activities identified in accordance with the ACCOBAMS and the RAC/SPA work programmes.
6. The ACCOBAMS Secretariat and UNEP/MAP-Barcelona Convention shall work together, to the extent possible, within the remit of their respective mandates, for the implementation of the activities undertaken pursuant to this MoU.
7. This MoU seeks to consolidate and intensify cooperation between the Parties and to strengthen regional synergy. In this context, ACCOBAMS and UNEP/MAP-Barcelona Convention-Barcelona Convention will inform each other of their respective capacity development and capacity development related initiatives so as to strengthen cooperation through a permanent platform, such as websites of the Parties.

Article 5

Organization of the Cooperation

1. The Parties shall hold bilateral meetings on matters of common interest, in accordance with an agenda agreed to in advance by the Parties, for the purpose of developing and monitoring collaborative activities. Relevant international organizations and relevant initiatives/projects may be invited by both Parties to join such consultations that will take place at least once per year, through face-to-face meetings or remote conferences. The following two items should be examined at least once per year in occasion of consultations:
 - a. discuss technical and operational issues related to furthering the objectives of this MoU; and
 - b. review progress of collaboration and related work between the Secretariat of ACCOBAMS and the components of the UNEP/MAP-Barcelona Convention, (as RAC/SPA, REMPEC,...) and Med POL covered by separate legal instrument in accordance with Article 4.4 above.
2. In implementing activities, projects and programmes in the agreed priority areas, the Parties shall execute a separate legal instrument appropriate for the implementation of such initiatives in accordance with Article 1.2 above. In identifying the areas of cooperation under this MoU, due regard shall be given to ACCOBAMS' and the UNEP/MAP's-UNEP/MAP-Barcelona Convention geographic coverage.
3. Where one of the Parties is organizing a meeting with external participation at which policy matters related to the aims of this MoU shall be discussed, it shall, as appropriate, either invite the other Party to participate in the meeting or update it on relevant policy matters discussed at the meeting.
4. The ACCOBAMS Secretariat and UNEP/MAP-Barcelona Convention-Barcelona Convention will inform their relevant governing bodies on the progress made in implementing this MoU by including this issue in the agenda of each Ordinary Meeting of their respective governing bodies (Meeting of the Parties for ACCOBAMS and Contracting Parties Meeting for UNEP/MAP-Barcelona Convention).
5. Nothing under this MoU imposes financial obligations upon either Party. If the Parties mutually agree to allocate specific funds to facilitate an activity undertaken pursuant to this MoU, such an agreement will be reflected in writing and signed by both Parties. In particular, for the implementation of joint activities within the framework of this MoU that might involve payment of funds, a specific separate legal instrument will be entered into, as appropriate, taking into account those relevant administrative

and financial rules and procedures applicable to the Parties.

6. The Parties will undertake, within their global knowledge network and to the extent possible, to facilitate mutual access to relevant information and body of work as well as dissemination between them. The Parties will consider the possibility of joint missions and the hosting of joint training activities and information sessions.

Article 6

Status of the Parties and their Personnel

7. While confirming their strong willingness to cooperate and to the extent possible create synergies in the implementation of their respective activities, the Parties acknowledge and agree that they are separate and distinct entities and that ACCOBAMS is separate and distinct from the United Nations and UNEP. The employees, personnel, representatives, agents, contractors, affiliates or Partners of the ACCOBAMS Secretariat, including the personnel engaged by the ACCOBAMS Secretariat for carrying out any of the project activities pursuant to this MoU, shall not be considered in any respect or for any purposes whatsoever as being employees, personnel, representatives, agents, contractors or affiliates of the United Nations, including UNEP, nor shall any employees, personnel, representatives, agents, contractors or affiliates of UNEP be considered, in any respect or for any purposes whatsoever, as being employees, personnel, representatives, agents, contractors or affiliates of the ACCOBAMS Secretariat. Neither Party shall be entitled to act or make legally binding declarations on behalf of the other Party. Nothing in this MoU shall be deemed to constitute a joint venture, agency, interest grouping or any other kind of formal business grouping or entity between the Parties.

Article 7

Fundraising

1. To the extent permitted by the Parties' respective regulations, rules and policies, and subject to sub-article 2, the Parties may engage in fundraising from the public and private sectors to support the activities, projects and programmes to be developed or carried out pursuant to this MoU.
2. Neither Party shall engage in fundraising with third parties in the name of or on behalf of the other, without the prior express written approval of the other Party in each case.

Article 8

Intellectual Property Rights

1. Nothing in the MoU shall be construed as granting or implying rights to or interest in, intellectual property of the Parties, except as otherwise provided in Article 8.2.
2. In the event that the Parties foresee that intellectual property that can be protected shall be created in relation to a particular activity, project or programme to be carried out under this MoU, the Parties shall negotiate and agree on terms of its ownership and use in the relevant legal instrument concluded as per Article 1.2.

Article 9

Use of Name and Emblem

1. Neither Party shall use the name, emblem or trademarks of the other Party, its subsidiaries and/or affiliates, or any abbreviation thereof, in connection with its business or for public dissemination without the prior expressly written approval of the other Party in each case. In no event shall authorization of the UN, UNEP and/or UNEP/MAP-Barcelona Convention name or emblem be granted for commercial purposes or for use in any manner that suggests an endorsement by UNEP/MAP-Barcelona Convention of ACCOBAMS products, business practices or services.
2. ACCOBAMS acknowledges that it is familiar with the independent, international and impartial status of the UN, UNEP and/or UNEP/MAP-Barcelona Convention, and recognizes that their names and emblems may not be associated with any political or sectarian cause or otherwise used in a manner inconsistent with the status of the UN, UNEP and/or UNEP/MAP-Barcelona Convention

3. The Parties agree to recognize and acknowledge this collaboration, as appropriate. To this end, the Parties shall consult with each other concerning the manner and form of such recognition and acknowledgement.

Article 10 **United Nations Privileges and Immunities**

4. Nothing in or relating to this MoU shall be deemed a waiver, express or implied, of any of the privileges and immunities of the United Nations, including its subsidiary organs.

Article 11 **Confidentiality**

1. The handling of information shall be subject to each Party's corporate confidentiality policies.
2. Before disclosing internal documents, or documents that by virtue of their content or the circumstances of their creation or communication must be deemed confidential, of the other Party to third parties, each Party shall obtain the express, written consent of the other Party. However, a Party's disclosure of another Party's internal and/or confidential documents to an entity the disclosing Party controls or with which it is under common control, or to an entity with which it has a confidentiality agreement, shall not be considered a disclosure to a third party, and shall not require prior authorization.
3. For UNEP, a principal or subsidiary organ of the United Nations established in accordance with the Charter of the United Nations shall be deemed to be a legal entity under common control.

Article 12 **Responsibility**

1. Each Party will be responsible for dealing with any claims or demands arising out of its actions or omissions, and those of its respective personnel, in relation to this MoU.
2. The ACCOBAMS Secretariat shall indemnify, hold and save harmless and defend at its own expense, the UN, UNEP and/or UNEP/MAP-Barcelona Convention, their officials, personnel and representatives, from and against all suits, claims, demands and liability of any nature or kind which may arise in relation to this MoU due to any actions or omissions attributable to ACCOBAMS.

Article 13 **Dispute Settlement**

1. The Parties shall use their best efforts to settle amicably any dispute, controversy or claim arising out of this MoU. Where the Parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the UNCITRAL Conciliation Rules then prevailing, or according to such other procedure as may be agreed between the Parties.
2. Any dispute, controversy or claim between the Parties arising out of this MoU which is not settled amicably in accordance with the foregoing sub-article may be referred by either Party to arbitration under the UNCITRAL Arbitration Rules then in force. The arbitral tribunal shall have no authority to award punitive damages. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy, claim or dispute.

Article 14 **Notification and Amendments**

1. Each Party shall promptly notify the other in writing within 3 months of any anticipated or actual material changes that will affect the execution of this MoU.
2. Upon receipt of such notification, the Parties shall consult each other with a view of reaching an agreement on any actual or proposed change(s) suggested in accordance with Article 14.1.
3. The Parties may amend this MoU by mutual written agreement, which shall be appended to this MoU

and become an integral part of it.

Article 15 Termination

1. Either Party may terminate this MoU by giving three (3) months' prior written notice to the other Party.
2. Upon termination of this MoU, the rights and obligations of the Parties defined under any other legal instrument executed pursuant to this MoU shall cease to be effective, except as otherwise provided in this MoU.
3. Any termination of the MoU shall be without prejudice to (a) the orderly completion of any ongoing collaborative activity and (b) any other rights and obligations of the Parties accrued prior to the date of termination
4. The obligations under Articles 8-13 do not lapse upon expiry, termination of or withdrawal from this MoU.

Article 16 Additional Parties

1. Another entity seeking to become a Party to this MoU must notify the other Parties in writing of its wish, providing its reasons and intended contributions. Following consultation, should all the Parties agree in writing to the requesting entity's accession to the MoU, UNEP/MAP- Barcelona Convention and ACCOBAMS acting on behalf of the other Parties, shall effectuate the accession as a Party to the MoU by exchanging letters with the requesting entity.

IN WITNESS WHEREOF, the duly authorized representatives of the Parties affix their signatures below.

For UNEP/MAP-Barcelona Convention

Name:

Date:

For the ACCOBAMS Secretariat

Name:

Date:

Appendix

ACTIVITIES RELATING TO THE AREAS OF COOPERATION OF THIS MoU

1. Promotion of ecosystem based approaches for the conservation of marine environment and ecosystems through the assessment, monitoring and mitigation of adverse human-cetacean interactions, such fisheries, ship strikes, underwater noise-producing activities and marine litter

- Contribute to the formulation of a regional strategy based on agreed indicators and reference points (ecological, biological, etc.) to monitor the status of the marine environment and ecosystems and that of marine living resources by providing specific recommendation in particular regarding underwater noise;
- Cooperate in undertaking assessments of the state of marine environment and ecosystems and that of marine living resources, including aspects relating to the impacts of fisheries, marine litter and offshore activities on marine environment taking into account socio economic aspects;
- Collaborate in developing key regional strategies to integrate the environment in social and economic development especially in relation to maritime traffic, underwater noise-producing activities and fisheries;
- Collaborate in the elaboration, including external fundraising, of joint projects for the implementation of activities of common interest in relation to this MoU;
- Strengthen scientific advice on issues of common interest, including the negative effects of pollution of the marine environment and ecosystems on marine living resources, in particular noise pollution and derelict fishing gears;
- Consider initiatives to develop the concept of marine spatial planning in a manner that takes into account activities for the preservation of marine habitats and possible conflicts between these activities and other uses of the sea (e.g. shipping, marine renewable energies, etc.);
- Enhance collaboration with other relevant organizations as appropriate, including those whereby other MoUs have been signed, to share a common regional database of sites of particular importance for biodiversity conservation (in particular cetaceans critical habitats)
- Exchange views regarding the governance of the Mediterranean, with particular regard to those areas located beyond national jurisdiction and take part, where possible, to ongoing initiatives aimed at improving the said governance.

2. Development of capacity building activities (e.g. training programmes, dissemination of relevant information, building awareness, etc.).

- Collaborate with relevant MAP components on initiatives that raise awareness and promote the mitigation of adverse human-cetacean interactions, such fisheries, ship strikes, underwater noise-producing activities and marine litter.

ANNEX III

**MEMORANDUM OF UNDERSTANDING
BETWEEN**

**THE UNITED NATIONS ENVIRONMENT PROGRAMME, ON BEHALF OF THE
COORDINATING UNIT FOR THE MEDITERRANEAN ACTION PLAN/ SECRETARIAT
OF THE BARCELONA CONVENTION (UNEP/MAP-Barcelona Convention)**

AND

**THE PERMANENT SECRETARIAT OF THE COMMISSION ON THE PROTECTION OF
THE BLACK SEA AGAINST POLLUTION (BSC PS)**

**MEMORANDUM OF UNDERSTANDING
BETWEEN**

**THE UNITED NATIONS ENVIRONMENT PROGRAMME, ON BEHALF OF THE
COORDINATING UNIT FOR THE MEDITERRANEAN ACTION PLAN/ SECRETARIAT
OF THE BARCELONA CONVENTION (UNEP/MAP-Barcelona Convention)**

AND

**THE PERMANENT SECRETARIAT OF THE COMMISSION ON THE PROTECTION OF
THE BLACK SEA AGAINST POLLUTION (BSC PS)**

WHEREAS the United Nations Environment Programme (hereinafter referred to as UNEP) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment;

WHEREAS the Coordinating Unit of the Mediterranean Action Plan/Secretariat of the Barcelona Convention (hereinafter referred to as UNEP/MAP-Barcelona Convention) is administered by UNEP and has the mandate as per the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean adopted in 1976 and revised in 1995, to assist the Mediterranean countries, with its main objectives through its seven protocols respectively to assess and control marine pollution; to ensure sustainable management of natural marine and coastal resources; to address common challenges related to the prevention and reduction of pollution from land-based sources, ships, dumping, off-shore installations and the movement of hazardous substances; to ensure the protection of biodiversity; and, the integrated management of coastal zones;

WHEREAS UNEP/MAP has also the mandate to assist in the implementation of the Mediterranean Action Plan (MAP) which was adopted in 1975 and became MAP II after its revision in 1995;

WHEREAS the 18th Ordinary Meeting of the Contracting Parties to Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols (Barcelona Convention) (Istanbul, 3-6 December 2013) welcomed the cooperation established between the UNEP/MAP-Barcelona Convention and relevant international and regional Organizations and asked the Secretariat to extend cooperation with other relevant Organizations with whom synergy is needed for reaching the objectives of the Barcelona Convention/MAP;

WHEREAS, The Convention on the Protection of the Black Sea Against Pollution (hereinafter referred to as Bucharest Convention) signed in Bucharest in April 1992, and ratified by all six riparian states of the Black Sea in 1994, fully recognizing the need to preserve the Black Sea ecosystem as a valuable natural endowment of the region, whilst ensuring the protection of its marine and coastal living resources as a condition for sustainable development of the Black Sea coastal states, well-being, health and security of their population;

WHEREAS, Contracting Parties to Bucharest Convention adopted the Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea in 2009 that contains challenges and policy actions to overcome these challenges threatening the sustainability of marine resources of Black Sea;

WHEREAS, Contracting Parties to Bucharest Convention agreed to further strengthen cooperation with international organizations such as GEF, UNDP, UNEP, BSEC (Black Sea Economic Cooperation), European Union, the World Bank, and IMO, in support of the implementation of the Convention on the Protection of the Black Sea Against Pollution and its protocols;

WHEREAS, the Parties, acknowledge the commitment of Republic of Turkey, expressed in several fora, in its capacity as a Party to both Conventions, on facilitating this Memorandum of

Understanding;

WHEREAS Barcelona Convention UNEP/MAP and BSC PS (hereinafter on referred as the Parties) intend to conclude this Memorandum of Understanding (hereinafter referred to as “MoU”) with the aim of consolidating, developing and detailing their cooperation and effectiveness to achieve the common objectives in the field of protection of the marine and coastal environment;

WHEREAS the Parties intend to conclude this Memorandum of Understanding (hereafter referred to as “MoU”) with the aim of consolidating and intensifying their cooperation, improving exchange of information and strengthening regional synergy to achieve their common goals and objectives,

NOW, THEREFORE, the Parties HAVE AGREED TO COOPERATE UNDER THIS MEMORANDUM OF UNDERSTANDING AS FOLLOWS:

Article 1 Interpretation

1. References to this MoU shall be construed as including any Annexes, as varied or amended in accordance with the terms of this MoU. Any Annexes shall be subject to the provisions of this MoU, and in case of any inconsistency between an Annex and this MoU, the latter shall prevail.
2. Implementation of any subsequent activities, projects and programmes pursuant to this MoU shall necessitate the execution of appropriate legal instruments between the Parties. The terms of such legal instruments shall be subject to the provisions of this MoU.
3. This MoU represents the complete understanding between the Parties and supersedes all prior MoUs, communications and representations, whether oral or written, concerning the subject matter of this MoU.
4. Any Party’s failure to request implementation of a provision of this MoU shall not constitute a waiver of that or any other provision of this MoU.

Article 2 Duration

1. This MoU shall be effective upon the last date of signature of the approving officials and remain in effect until 2021, unless terminated in accordance with Article 14 below.

Article 3 Purpose

1. The purpose of this MoU is to provide a framework of cooperation and understanding, and to facilitate collaboration between the Parties to further achieve their shared goals and objectives in regard to the conservation of marine environment and ecosystems in their fields of competence and geographical coverage.

Article 4 Areas of Cooperation

1. Areas of Cooperation are agreed jointly through the cooperation mechanism in the MoU. The relevant priorities under this MoU may also be jointly reviewed every two (2) years by the Parties pursuant to Article 5.
2. Both parties will endeavor, as fast as possible, to complete the process of granting each other mutual observership status.

3. The Parties have agreed to the following preliminary and overarching areas of cooperation for this MoU, which form part of mandate and programme of work of both Parties:
 - a. Collection and assessment of information relating to integrated marine monitoring programmes focusing on delivering data to manage regional seas in sustainable manner.
 - b. Collection and assessment of information relating to ecosystem-based approach and in particular facilitation of implementation of other relevant environmental legislation, i.e. Marine Strategy Framework Directive, in regional scale.
 - c. Assessment of State of the Environment and indicator development underpinning this assessment.
 - d. Collection, assessment and exchange of information regarding implementation of Integrated Coastal Zone Management protocols.
 - e. Awareness raising, and joint action against marine litter; legal, institutional and policy related cooperation.
 - f. Development of capacity building activities (e.g. joint projects, training programmes, dissemination of relevant information, building awareness, etc.).
4. The above list is not exhaustive and should not be taken to exclude or replace other forms of cooperation between the Parties on other issues of common interest.
5. The areas of cooperation are relevant within the context of the mandates of the Parties. As appropriate, they will be revised to be in line with those decisions of the governing bodies of the Conventions that might have a bearing on their respective mandates.
6. BSC and UNEP/MAP-Barcelona Convention shall work together, to the extent possible, within the remit of their respective mandates, for the implementation of the activities undertaken pursuant to this MoU.

Article 5

Organization of the Cooperation

1. The Parties shall hold bilateral meetings on matters of common interest, in accordance with an agenda agreed to in advance by the Parties, for the purpose of developing and monitoring collaborative programmes and projects. Relevant international organizations and relevant initiatives/projects may be invited by both Parties to join such consultations that will take place at least once per year, through face-to-face meetings or remote conferences:
2. In implementing activities, projects and programmes in the agreed priority areas, the Parties shall execute separate legal instruments appropriate for the implementation of such initiatives in accordance with Article 1.2 above. Both Parties will inform the governing bodies of their respective Conventions on the progress made in implementing this MoU by including this issue in the agenda of Ordinary/Regular Meetings of the respective governing bodies.
3. Nothing under this MoU imposes financial obligations upon either Party. If the Parties mutually agree to allocate specific funds to facilitate an activity undertaken pursuant to this MoU, such an agreement will be reflected in writing and signed by both Parties. In particular, for the implementation of joint activities within the framework of this MoU that might involve payment of funds, a specific separate legal instrument will be entered into, as appropriate, taking into account those relevant administrative and financial rules and procedures prevailing for the Parties.
4. The Parties undertake to share knowledge and information in their areas of operation and expertise

relevant to this MoU. The Parties will consider the possibility of joint missions and the hosting of joint training activities and information sessions.

Article 6
Status of the Parties and their Personnel

1. The employees, personnel, representatives, agents, contractors or affiliates of BSC-PS, including the personnel engaged by BSC-PS for carrying out any of the project activities pursuant to this MoU, shall not be considered in any respect or for any purposes whatsoever as being employees, personnel, representatives, agents, contractors or affiliates of the United Nations, including UNEP, nor shall any employees, personnel, representatives, agents, contractors or affiliates of UNEP be considered, in any respect or for any purposes whatsoever, as being employees, personnel, representatives, agents, contractors or affiliates of BSC-PS. Neither Party shall be entitled to act or make legally binding declarations on behalf of the other Party. Nothing in this MoU shall be deemed to constitute a joint venture, agency, interest grouping or any other kind of formal business grouping or entity between the Parties.

Article 7
Fundraising

1. To the extent permitted by the Parties' respective regulations, rules and policies, and subject to sub-article 2 of this Article, the Parties may engage in fundraising from the public and private sectors to support the activities, projects and programmes to be developed or carried out pursuant to this MoU.
2. Neither Party shall engage in fundraising with third parties in the name of or on behalf of the other, without the prior expressed written approval of the other Party in each case.

Article 8
Intellectual Property Rights

1. Nothing in the MoU shall be construed as granting or implying rights to or interest in, intellectual property of the Parties, except as otherwise provided in sub-article 2 of this Article.
3. In the event that the Parties foresee that intellectual property that can be protected shall be created in relation to a particular activity, project or programme to be carried out under this MoU, the Parties shall negotiate and agree on the terms of its ownership and use in the relevant legal instrument concluded.

Article 9
Use of Name and Emblem

1. Neither Party shall use the name, emblem, logo or trademarks of the other Party, its subsidiaries and/or affiliates, nor any abbreviation thereof in connection with its business or for public dissemination without the prior expressed written approval of the other Party in each case.

Article 10
Confidentiality

1. The handling of information shall be subject to each Party's corporate confidentiality policies.
2. Before disclosing internal documents, or documents that by virtue of their content or the circumstances of their creation or communication must be deemed confidential, of the other Party to third parties, each Party shall obtain the expressed written consent of the other Party. However, a Party's disclosure of another Party's internal and/or confidential documents to an entity the disclosing Party controls or with which it is under common control, or to an entity with which it has a confidentiality agreement, shall not be considered a disclosure to a third party, and shall not require prior authorization.

3. For UNEP, a principal or subsidiary organ of the United Nations established in accordance with the Charter of the United Nations shall be deemed to be a legal entity under common control.

Article 11 Responsibility

1. Each Party will be responsible for dealing with any claims or demands arising out of its actions or omissions, and those of its respective personnel, in relation to this MoU.

Article 12 Dispute Settlement

1. The Parties shall use their best efforts to settle amicably any dispute, controversy or claim arising out of this MoU. Where the Parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the UNCITRAL Conciliation Rules then prevailing, or according to such other procedure as may be agreed between the Parties.
2. Any dispute, controversy or claim between the Parties arising out of this MoU which is not settled amicably in accordance with the foregoing sub-article may be referred by either Party to arbitration under the UNCITRAL Arbitration Rules then in force. The arbitral tribunal shall have no authority to award punitive damages. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy, claim or dispute.

Article 13 Notification and Amendments

1. Each Party shall promptly notify the other in writing of any anticipated or actual material changes that will affect the execution of this MoU.
2. Upon receipt of such notification, the Parties shall consult each other with a view of reaching an agreement on any actual or proposed change(s).
3. The Parties may amend this MoU by mutual written agreement, which shall be appended to this MoU and become an integral part of it.

Article 14 Termination

1. Either Party may terminate this MoU by giving three (3) months' prior written notice to the other Party.
2. Upon termination of this MoU, the rights and obligations of the Parties defined under any other legal instrument executed pursuant to this MoU shall cease to be effective, except as otherwise provided in this MoU.
3. Any termination of the MoU shall be without prejudice to (a) the orderly completion of any ongoing collaborative activity and (b) any other rights and obligations of the Parties accrued prior to the date of termination.
4. The obligations under Articles 8-13 do not lapse upon expiry or termination of this MoU.

Article 15 United Nations Privileges and Immunities

1. Nothing in or relating to this MoU shall be deemed a waiver, express or implied, of any of the

privileges and immunities of the United Nations, including its subsidiary organs.

IN WITNESS WHEREOF, the duly authorized representatives of the Parties affix their signatures below.

For UNEP/MAP-Barcelona Convention

**For the Permanent Secretariat of the
Commission on the Protection of the Black
Sea Against Pollution**

Name:

Name:

Date:

Date:

Draft Decision IG.22/19
Environment Friendly City Award

The 19th Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, hereinafter referred to as “the Barcelona Convention”,

Recalling Article 4 of the Barcelona Convention and the MSSD;

Recalling also the Istanbul Declaration made at COP 18 (Istanbul, Turkey, December 2013),

Acknowledging the role and efforts made by Mediterranean coastal cities towards the sustainable development of the region;

Expressing appreciation to the Government of Turkey for its leadership and financial support to the establishment of the Award including the outlining of the process and criteria for the Award;

Takes note of the main elements of the Award process as contained in the Annex to this Decision;

Decides to establish the Environment Friendly City Award to be conferred to Mediterranean coastal cities;

Requests the Secretariat, using extra budgetary resources, to finalize the procedure for the nomination and selection criteria, on the basis of the elements described in the Annex, and mechanisms for visibility, for consideration of the 2016-2017 Bureau for its approval, with a view to grant the first award at COP 20;

Encourages city authorities to support and participate in the Award process, to promote sustainable urban development in the Mediterranean region.

ANNEX

**Environment Friendly City Awards
Main Elements Based on Outcome of the Workshop held in Ankara, Turkey, on 25-26
May 2015**

Introduction

Through the Istanbul Declaration adopted at COP 18 (Istanbul, Turkey, December 2013), the Contracting Parties, recognizing the importance of coastal cities and communities as key actors for the implementation of the MAP/Barcelona Convention, its Protocols and relevant Strategies and Action Plans and resolved to engage with them, established the Environment Friendly City Award to be conferred to coastal cities by setting out nomination and selection principles and criteria for such award.

The Contracting Parties also committed to promote an integrated approach for environment friendly coastal cities and coastal urban settlements, including through working with local authorities in finding solutions that improve the sustainable management of waste (including through the application of the waste hierarchy: reduce, reuse, recycle and recover) and waste water treatment.

In order to promote the importance of coastal cities and communities and encourage their efforts in addressing pressures to the marine and coastal environment associated with urban development, the Contracting Parties decided to establish the “Environment Friendly City Award” to be conferred to coastal cities by setting out nomination and selection principles and criteria for such award till COP 19.

Definition and Main Elements of the Award Process

A sustainable coastal city is: *“A coastal city in harmony with the sea, utilizing its resources efficiently, equitably and sustainably, reducing its impact on marine and coastal environment and climate change, and managing the environment for the benefit of current and future generations”.*

The owner of the application should be a local authority of a town or city, which has a coast on the Mediterranean Sea, whose borders are as described in the Barcelona Convention. There is no size or population reference, i.e. both small towns or metropolitan cities are eligible to apply. It is encouraged to develop partnership with NGOs, scientific community, private sector or other stakeholders.

The evaluation will be undertaken through criteria to be defined under four proposed categories:

- i. Nature and Biodiversity Protection
- ii. Built environment
- iii. Social, Economic and Cultural Sustainability
- iv. Governance

Annotations to the proposed categories are listed below so as to provide indicative directions.

i. Nature and Biodiversity Protection

- Climate change
 - Showing GHG reduction efforts (Has the city signed Covenant of mayors?)
 - Demonstrating enhanced or maintained resilience of natural systems against climate change impacts
- Ecosystem protection
 - Protecting coastal and marine ecosystems
 - Contributing to management of protected areas
 - Preserving natural coastline (To avoid/discourage reclamation)
- Wise/efficient/sustainable-use of resources
 - Efficiency in water use
 - Sustainable use of land-based resources (sand, gravel,etc)
 - Sustainable use of marine resources

- Bonus points can be given to a city if its footprint stays within a given range that is meaningful in the context of the Mediterranean region.

ii. Built environment

- Resilient infrastructure
 - Existence of flood management and coastal protection infrastructure
 - Defined set-back line for future sea level rise
- Sustainable land use
 - Promoting green urban areas
 - Limiting urban sprawl
 - Percentage of free access of public to the shore/beaches
 - Percentage of mixed use neighborhoods
 - Demonstration of easy access to basic services
 - Barrier-free urban design for disabled groups
- Local transport
 - Promoting walking, cycling and public transport
 - Promoting car-free settlements
 - Limitations and management of access of private cars to the cities
- Pollution and waste
 - Air quality within allowed standards
 - Building air/wind corridors to blow away pollution
 - Water quality within allowed standards
 - Waste water management and treatment infrastructure available and functioning
 - Light intensity within allowed standards
 - Noise level in city, including the marine areas
 - Solid waste management infrastructure available and functioning
 - 3Rs
- Water
 - Availability and affordability of water for human use
 - Efficient water demand management
- Energy efficiency
 - Promoting/demonstration of energy conservation in buildings,
 - Production and use of renewable energy
- Green settlements, building materials and technological systems
 - Promotion of local [and recycled] materials
 - Focusing on reuse of brownfields for urban transformation
 - Amount of green areas per population
 - Budget allocation for retrofitting of historical building

iii. Social, Economic and Cultural Sustainability

- Integration and solidarity
 - Upgrading slums/informal/illegal settlements
 - Promoting mixed income neighborhoods
 - Building child-friendly settlements
- Local cultural values and traditions
 - Efforts/budgeted allocation for renovation/retrofitting/rehabilitation of historical buildings and settlements
 - Promotion of Ecotourism and Hospitality

- Promoting Green Economy
 - Sustainable consumption and production
 - Eco-innovation and sustainable employment
 - Promoting local market
 - Promoting women selling arts and handicrafts
 - Promoting territorial synergies (connections with neighboring settlements and hinterland)

iv. Policy and Governance

- Policy
 - Existence of/allocated budgeted Environmental policy, strategies and action plans for sustainability
 - Existence of/allocated budgeted Resilience policy (natural disasters)
 - Existence of/allocated budgeted Climate change mitigation and adaptation strategy
- Planning and management
 - Urban planning
 - ICZM (national or local) existence and implementation/budgeted allocations
 - Promoting strategies for Sustainable mobility/budgeted allocations Pollution prevention action plans for water, waste, air, noise /budgeted allocations
- Institution
 - Accountable and transparent local government
 - Partnerships with NGOs and other stakeholders
 - Participation in decision-making (empowered society)
 - Strengthening the capacity
- Implementation and monitoring
 - Existence of Standards, Rules and regulations for developers/investors
 - ICZM implementation practices
 - Demonstration/achievements of green public buildings, green transport systems, etc
 - Definition and adoption of a monitoring system
 - Sustainable Finance
 - Green procurement
 - Sustainable municipal finance (percentage devoted to environmental management)
- Communications and Outreach
 - Public awareness on sustainability (environment) (part of the local government)/budgeted allocation
 - Education and training programs/activities targeting adults and children (Environment, sustainability, budgeted allocation/person assigned International cooperation and networks

Historical perspective of the candidate city will also be considered. The city will be compared with itself in the past, today and in the future situation. Improvement achieved will be benchmark criterion.

The selection is proposed to be carried out in three steps, with the involvement of three bodies:

- i. Secretariat: UNEP/MAP Coordinating Unit
- ii. Technical Committee: Task Force composed of relevant RACs + MED POL (Technical Secretariat by Governance Officer), supported by 3 independent experts
- iii. Jury: The Bureau members and the President of MCSDD Steering Committee

The decision should be taken by consensus. Depending on the different character of the applications, one to three cities may receive the award every biennium. The Award will be conferred at each COP meeting by the President of the Bureau.

A communication strategy will be developed for the promotion of the award, candidate and award-winning cities. It will be proposed to the Contracting Parties to allocate sufficient budget for the award selection and conferring process in each COP, in addition to the matching-fund raising efforts.

The Secretariat will prepare the application forms, background documentation and the call for the Award will be launched during the first Bureau Meeting (around month of July of the first year of the biennium) by a news brief, and via online communications tools like social media, MAP and Components' websites and email networks including through the MAP and RACs Focal Points, MCSD members and MAP Partners.

Applications will be submitted to the Secretariat by the end of first year of the biennium.

Questions are allowed before submission. A helpdesk will be established by the Secretariat and the questions will be answered by the helpdesk.

The first two steps of the selection process will take place in the early months of the second year of the biennium and the final shortlist will be submitted to the third Bureau Meeting and with the involvement of the President of the MCSD Steering Committee the award winners will be selected.

Contracting Parties guidance is expected regarding the budget that should be allocated for the award, as well as the selection and conferring process.

Annex V

Annex V

Nineteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (COP 19)

Theme: Forty Years of Cooperation for Healthy and Productive Mediterranean Sea and Coast: A Collective Journey Towards Sustainable Development

The 19th Ordinary Meeting of the Contracting Parties to the Barcelona Convention and the 40th anniversary of the Mediterranean Action Plan (MAP)-Barcelona Convention come at a defining stage for global sustainable development and at a key moment for the future of the Mediterranean region: integrating agreed universal and transformative global goals and targets into the post-2015 development agenda, transitioning to a green and blue economy, implementing a new climate change agreement, and striving to revive and boost stagnant economies are processes with a profound impact at all levels.

The Mediterranean countries, throughout their common history, have shown great success in living and dealing with change, embracing the possibilities and opportunities of the challenges they face. Through the MAP and Barcelona Convention, they agreed on a common transformative agenda for regional cooperation, partnership and solidarity, “to protect and enhance the marine environment of that Area so as to contribute towards its sustainable development” (Art. 4, para. 1 of the Barcelona Convention, 1995). Since its inception, the MAP-Barcelona Convention has been addressing the opportunities and challenges of the environment of the Mediterranean sea and coasts, and striving to link environmental sustainability with socio-economic development. Over the past forty years, the main objectives of the Convention - assessment and control of marine pollution, protection of the marine environment and coastal zones, sustainable management of natural marine and coastal resources, strengthening solidarity among Mediterranean Coastal States - have spurred much progress. The Contracting Parties have adopted important decisions, developed concrete plans of action, and taken measures related to pollution, biodiversity, integrated coastal zone management, climate change adaptation, a regional system for integrated environmental monitoring, and an integrated framework for ecosystems-based management. Still, much remains to be done in a Mediterranean region that, today more than ever, is characterized by rapid and profound change.

In 2016, once again through their solidarity and inclusive cooperation framework, the Mediterranean Countries together with the European Union, will renew commitments and strategies, such as the 2016-2025 Mediterranean Strategy on Sustainable Development, and agree on common undertakings in the fields of environmental protection and sustainable development. They are poised to launch and usher an era of transformation in a region that remains crucial for growth and prosperity, with the ambition for the future of the Mediterranean to: (i) enhance marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations and their protection from traditional and emerging threats including climate change; (ii) strive for a prosperous Mediterranean by developing inclusive green and blue economies that leave no one behind; and (iii) strengthen the regional cooperation and solidarity through far-reaching partnerships, at all levels.

The Ministerial Session of COP 19 will provide the opportunity for Contracting Parties to:

- discuss their individual and collective achievements within the framework of the MAP-Barcelona Convention; and

- renew their commitment and determination to address together the emerging challenges related to environmental protection and sustainable development of the Mediterranean sea and coast, in the global framework of the post-2015 Agenda adopted by the UN General Assembly.

Provisional Agenda

1. Opening of the Meeting

2. Organizational Matters

- 2.1 Rules of Procedure
- 2.2 Election of Officers
- 2.3 Adoption of the Agenda
- 2.4 Organization of Work
- 2.5 Verification of credentials

3. Thematic Decisions

4. Midterm Strategy 2016-2021

5. Programme of work and budget 2016-2017

6. Ministerial Session

- 6.1 Report on Activities carried out in the framework of UNEP/MAP since COP 18
- 6.2 Interactive ministerial policy review session: Forty Years of Cooperation for Healthy and Productive Mediterranean Sea and Coast: A Collective Journey Towards Sustainable Development
- 6.3 Athens' Declaration

7. Dates and place of COP 20

8. Any other Business

9. Adoption of the rapport

10. Closure of the Meeting

Annex VI

16.10.2015, Athens

DECLARATION BY TURKEY ON CYPRUS

In response to the assumption of the chairmanship of the Mediterranean Action Plan Focal Points Meeting in Athens on 13-16 October 2015 by the representative of the so-called "Republic of Cyprus", Turkey would like to make the following declaration for the records:

There is no single authority which in law or in fact is competent to represent jointly the Turkish Cypriots and the Greek Cypriots, consequently Cyprus as a whole, since 1963 when the Greek Cypriots destroyed the Republic of Cyprus, which was a partnership state of the Turkish and Greek Cypriots. Turkey regards the Greek Cypriot authorities as exercising authority, control and jurisdiction only in the territory south of the buffer zone, as is currently the case, as not representing the Turkish Cypriot people and will treat the acts performed by them accordingly.

In view of the above, Turkey's presence and participation in the work of the Mediterranean Action Plan Focal Points Meeting under the chairmanship of the representative of the so-called "Republic of Cyprus" and her adoption of the decisions of the meeting should in no way be construed as the recognition of the "Republic of Cyprus" by Turkey; nor should it imply any obligation on the part of Turkey to enter into any dealing with the so-called "Republic of Cyprus" within the framework of the Mediterranean Action Plan.

UNEP CO-ORDINATING UNIT OF THE MEDITERRANEAN ACTION PLAN RECEIVED 16 OCT 2015 ACTION.....completed..... acknowledged.....no action required Files..... Info.....

Annex VII



REPUBLIC OF CYPRUS

Ministry of Agriculture Rural Development and Environment

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5 November, 2014

The Coordinator
UNEP/MAP
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11635 Athens
Greece

**MAP Focal Point Meeting Report
Athens 13-16, October 2015**

Reference the Draft Text of the Report of the above MAP Focal Point meeting which was forwarded to us by email on the 2/11/2015 for comments, and regarding the Statement submitted by Turkey as per paragraph 175, you are kindly requested to include in the Final Report the attached Statement by Cyprus.

Charalambos Hajipakkos
for Permanent Secretary

DECLARATION BY CYPRUS

With reference to the “Declaration by Turkey on Cyprus”, Cyprus would like to make the following declaration for the records:

The Government of the Republic of Cyprus rejects unreservedly the declaration made by the Republic of Turkey on 16 October 2015 at the Mediterranean Action Plan Focal Points meeting of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, in connection with the assumption by Cyprus of the chairmanship of the said meeting.

The Turkish positions are totally inconsistent with the relevant provisions of international law and the specific provisions of the mandatory UN Security Council resolutions 541 (1983) and 550 (1984) which inter alia called on all states not to recognize any Cypriot state other than the Republic of Cyprus and to respect the sovereignty, independence, territorial integrity and unity of the Republic of Cyprus.

The Republic of Cyprus has been a member of the United Nations since its independence in 1960, and a member state of the European Union from 1 May 2004. The Government of the Republic of Cyprus is the only internationally recognized government in Cyprus, with competence and authority to represent the State, notwithstanding the de facto division of the island as a result of the illegal 1974 Turkish invasion.

In addition to the above, the declaration made by the Republic of Turkey contravenes both the letter and spirit of the Barcelona Convention.