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**Agenda item 6: Regional Programme of Measures to achieve Good Environmental Status; Gap Analysis and Need Assessment for New/Updated Measures**

**Analysis of Potential New/Updated Regional Measures to Achieve Good Environmental Status with regard to Pollution and Litter**

**This document was prepared in collaboration with the EU-funded ActionMed Project**

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## Table of contents

PART I: CONTEXT.....	1
I. Introduction.....	1
2. Scope and objectives of the Report .....	1
3. Methodology .....	3
4. Related Projects and Activities.....	4
5. Consultations .....	4
PART II – REGIONAL AND NATIONAL POM ANALYSIS: SYNTHESIS OF FINDINGS....	6
1. National measures analysis .....	6
2. Regional PoM analysis .....	8
3. Socio-economic assessment at regional and national levels .....	10
3.1 Plan Bleu’s Socio-economic assessment of regional measures.....	10
3.2 Assessments in the framework of PoMs .....	11
3.3 Socio-economic assessments in the NAPs .....	12
PART III: ELABORATION OF POSSIBLE NEW MEASURES AT REGIONAL LEVEL .....	13
1. Areas and issues where new measures are needed.....	13
2. List of potential new/updated measures .....	13
3. Factsheets for priority measures .....	16
PART IV: ACTION PLANNING .....	20
1. Medium and long-term regional PoM Action Plan .....	20
REFERENCES .....	1

## List of Abbreviations /Acronyms

BATs	Best Available Techniques
BEPs	Best Environmental Practices
BOD	Biochemical Oxygen Demand
CBA	Cost benefit analysis
CEA	Cost-effectiveness analysis
CIS	Common Implementation Strategy
COP	Conference of Parties
EcAp	Ecosystem Approach
EEA	European Environment Agency
EIA	Environmental Impact Assessment
ELV	Emission Limit Values
FP	Focal points
GES	Good Environmental Status
GFCM	General Fisheries Commission for the Mediterranean
IAS	Invasive Alien Species
ICZM	Integrated Coastal Zone Management
IMAP	Integrated Monitoring and Assessment Programme
KTM	Key type of measures
LBS	Land-based sources
MLRP	Regional Plan for the Marine Litter Management in the Mediterranean
MPA	Marine Protected Areas
MSFD	Marine Strategy Framework Directive
MSP	Maritime Spatial Planning
MSSD	Mediterranean Strategy on Sustainable Development
NAP	National Action Plans
NGO	Non-governmental organisation
PoM	Programmes of Measures
PRF	Port Reception Facilities
PRTR	Pollution Release and Transfer Register
RBMP	River Basin Management Plan
SAP/BIO	Strategic Action Plan for the conservation of marine and coastal biodiversity in the Mediterranean
SAP/MED	Strategic Action Programme to Address Pollution from Land-Based Activities
SCP	Sustainable Consumption and Production
SoER-MED	State of the Mediterranean Marine and Coastal Environment
SPA/ BD	Specially Protected Areas and Biodiversity (Protocol)
UNEP/MAP	United Nations Environment Programme – Mediterranean Action Plan
WFD	Water Framework Directive
WWTP	Wastewater Treatment Plant

## PART I: CONTEXT

### I. Introduction

1. The legal framework of the Barcelona Convention<sup>1</sup> comprises seven Protocols that regulate various aspects of the protection of marine environment: Dumping Protocol, Prevention and Emergency Protocol, LBS Protocol, SPA & Biodiversity Protocol, Offshore Protocol, Hazardous Wastes Protocol, and ICZM Protocol. These legal instruments are complemented with two Strategic Action Programmes – SAP/MED (addressing pollution from land-based sources and activities) and SAP/BIO (focusing on the Mediterranean biodiversity), legally binding Regional Plans on pollution prevention, action plans on biodiversity/ specific species protection, integrated coastal zone management, sustainable consumption and production, and offshore activities, as well as with the Climate Change Adaptation Framework and the Mediterranean Strategy on Sustainable Development (MSSD). This set of legal and policy instruments with related measures is implemented at regional and national levels.

2. As decided by the Contracting Parties at COP 15 and COP 17 (Decisions IG. 17/6 and IG. 20/4), the Ecosystem Approach (EcAp) became a guiding principle for the overall work under Barcelona Convention/ Mediterranean Action Plan (UN Environment/MAP), with the ultimate goal of achieving GES of the Mediterranean Sea. These Decisions laid down the EcAp implementation roadmap and were followed and further operationalized through the COP 18 Decision IG. 21/3 on GES and targets, and COP 19 Decision IG. 22/7 on Integrated Monitoring and Assessment Programme (IMAP).

3. This report has been prepared with support from the EU-funded ActionMed Project, comprising a desk study on potential new measures on the regional level and a proposed list of new/ updated measures. Based on these, Action plan on implementing the PoM and the NAPs by integrating regional and MSFD requirements and Medium and long-term Regional PoM action plan were elaborated and are included in the current report (Part IV).

4. This report has been prepared building upon the results of work carried out on the gap analysis and socioeconomic assessment of regional measures.

### 2. Scope and objectives of the Report

5. In 2015-2016, Contracting Parties to the Barcelona Convention updated their National Action Plans (NAPs) to reduce pollution from land-based sources. The aim of this update was to set operational targets and elaborate measures needed to achieve GES for pollution related ecological objectives (EO5 on eutrophication, EO9 on contaminants and EO10 on marine litter) through the implementation of the requirements of the LBS Protocol, related Regional Plans and SAP/MED provisions. In parallel, it was decided that the Programmes of Measures (PoM) prepared by Contracting Parties which are EU Member States, under the MSFD, would serve as NAPs, provided that they take into account relevant requirements and obligations deriving from the MAP Barcelona Convention system on pollution and litter.

6. Under the auspices of the Barcelona Convention, *Ecosystem Approach based Measures Gap Analysis* UNEP(DEPI)/MED WG.420/5, was prepared. The analyses focused on the existing measures<sup>2</sup> contributing to the implementation of the Barcelona Convention and its Protocols on both

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<sup>1</sup> Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean

<sup>2</sup> Including: i) measures adopted and implemented, for which time limits for their completion have been reached; ii) measures adopted but not yet implemented, for which time limits for their completion have

regional and national levels, linking them to EcAp ecological objectives and targets, and identifying the main shortcomings of the existing framework and its implementation to deliver the GES.

7. The work on identification of gaps continued with support from the ActionMed project, where the aim was to review the main stressors and impacts on the Mediterranean Sea, examine the existing measures at regional level and identify further actions that are required in order to reach GES, including strengthening of implementation and enforcement of existing measures, and/ or adoption of additional new measures. The findings are presented in the document UNEP(DEPI)/MED WG.439/Inf.13.

8. Socio-economic assessment of four selected regional measures (introduction of a plastic bag tax, no-special-fee as a cost recovery mechanism for port reception facilities for ship-generated waste, fishing for litter programmes and extension of the current network of marine protected areas) was also conducted by Plan Bleu. The aim was to provide analysis to underpin preparation/ update of NAPs/PoMs and facilitate decision making by providing useful levels of information (quantitative and/or qualitative) on effectiveness, costs and benefits of selected measures. The aim of this work was also to provide guidelines for national socio-economic assessments of measures, based on the analysis of the approaches applied in the preparation of PoMs in three EU Member States and international best practice.

9. For the purpose of this report, available PoMs and NAPs analyses reports<sup>3</sup> were reviewed in order to identify areas and issues of common concern across the region for which measures were proposed to reach GES.

10. The current provides a synthesis of the main findings from available analyses and reports with the purpose to identify areas where strengthened implementation and/or new/updated measures are needed to achieve GES. Within this analytical framework, the main objectives of the study were to:

- (a) Review and streamline available information on the regional gaps (insufficient implementation or lack of measures) that need to be overcome in order to achieve GES;
- (b) Review the available analysis of programme of measures and NAPs to identify common measures and/ or needs for further coordination in planning and implementing measures;
- (c) Propose a new/ updated list of regional measures (Regional PoM) to address the key gaps, coordination and integration needs to achieve GES with particular focus on EO 5, 9 and 10;
- (d) Recommend necessary actions to further align the EU MSFD implementation timeline with Ecosystem Approach roadmap under UN Environment / MAP – Barcelona Convention to:
  - i. further strengthen coordination and integration of the MSFD and regional Barcelona Convention requirements, through implementation of PoMs and NAPs, and
  - ii. elaborate and implement new/ updated regional PoM.

11. This report consists of three parts. In the first part, the context in which the work has been carried out is outlined and methodological approach explained. Stakeholder consultations mechanisms and tools relevant for the report are also described in the first part. The second part encompasses information from the available analyses and reports, providing an overview of the analytical work and assessments carried out by the Secretariat, with synthesis of the main findings. The third part includes proposal of the new/ updated regional PoM to address identified gaps with accompanying action plans and elaboration of priority measures. The Action Plans are aligned (to the extent current information

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not been yet reached; and iii) measures covering issues linked to EcAp environmental objectives, but not going far enough to achieve targets.

<sup>3</sup> Including *Synopsis of updated NAPs: Hotspots, sensitive areas, targets, measures, indicators and investment portfolios*, UNEP(DEPI)/MED WG.426/3

allowed) with the MSFD and EcAp processes as well as with the UN Environment / MAP Mid-term Strategy (MTS) 2016 – 2021 and Programme of Work 2016 – 2017<sup>4</sup>.

### 3. Methodology

12. In order to achieve the objectives of the report, the following steps were carried out:
- (a) Regional gap analysis (see UNEP(DEPI)/MED WG.439/Inf.13) was examined as a starting point for determination of areas that need to be addressed with new/ updated measures on the regional level to achieve GES, together with information on effectiveness, costs and benefits of selected potential new measures;
  - (b) Available analyses and reports on the national PoMs and (*Synopsis of updated NAPs: Hotspots, sensitive areas, targets, measures, indicators and investment portfolios*, UNEP(DEPI)/MED WG.439/Inf.16) were reviewed;
  - (c) Available NAPs and PoMs were screened with the purpose to identify potential new measures of regional relevance;
  - (d) Taking into account steps 1 – 3, consultations and results of the previous projects:
    - i. potential new/ updated measures were identified, screened against a set of criteria<sup>5</sup> and cross-checked with measures included in the NAPs/PoM,
    - ii. a list of potential strengthened/ updated (existing but better implementation or extension needed) and new measures was compiled and proposed for consultations at the Regional Meeting on NAPs implementation (Marseille, France, October 2016) and PoM workshop (Madrid, Spain, November December 2016),
    - iii. new/ updated list of regional measures was finalised based on the stakeholders' feedback and priority measures were described in the form of fact sheets,
    - iv. action planning elements were determined and consulted to formulate a set of time-bound recommendations on integration of MSFD and EcAp programmes of measures, and on elaboration, adoption and implementation of updated/ new regional measures.
13. Proposal of the new/ updated Regional PoM is structured around the themes listed below, whereas relevant ecological objectives<sup>6</sup> are provided in brackets:
- (a) Biodiversity (EO1, EO4, EO6);
  - (b) Non-indigenous and invasive species (EO2);
  - (c) Fish stocks (EO3);
  - (d) Eutrophication and contaminants (EO5, EO9);
  - (e) Marine litter (EO10);
  - (f) Cross-cutting issues (climate change, ICZM, sustainable consumption and production, relevant to relevant to all descriptors/ ecological objectives; ICZM particularly relevant for EO8);
  - (g) Horizontal measures (several descriptors/ ecological objectives).
14. The present report provides information related only to pollution and marine litter themes (d-e)
15. For the purpose of action planning, a distinction is made between mid-term (2017/ 2018) and long-term (beyond 2018) actions. To the extent possible, action planning is aligned with the MSFD and EcAp implementation processes.

<sup>4</sup> Decisions IG.22/1 and IG.22/2

<sup>5</sup> Combination of criteria used in the application of DeCyDe-4 tool in the ActionMed activities and those proposed in the working document for the October 2016 NAP update meeting (*Potential new/updated measures to achieve GES on pollution and litter*, UNEP(DEPI)/MED WG.426/4)).

#### 4. Related Projects and Activities

16. Several projects and specific activities relevant for the scope and objectives of this report have been conducted recently. The most relevant ones – namely project to support joint implementation of the MSFD in the Mediterranean (implemented *inter alia* through a series of meetings aiming at coordination and alignment of activities carried out at national level) and DeCyDe-4 tool originally developed under the IRIS-SES project – are briefly presented in the subsequent sections.

#### 5. Consultations

17. The main findings of the current report and the proposed new/ updated regional PoM with Action Plans have been drawn taking into account consultations held in the framework of UN Environment / MAP - Barcelona Convention activities as well as those organised under the ActionMed Project. The key meetings which were used to this end were:

- (a) Regional Meeting on NAPs Implementation – Lessons Learned and the Way Forward held in October 2016 in Marseille, France<sup>7</sup> (see UNEP(DEPI)/MED WG.439/Inf.16).
- (b) Sub-regional Stakeholder Workshops (Piran, Slovenia, July 2016 and Nicosia, Cyprus, November 2016); ;
- (c) Regional PoM Workshop, held in November-December 2016 in Madrid, Spain

18. The regional meeting on NAP Implementation was held in October 2016, in Marseille, France. The meeting was attended by MEDPOL Focal Points, experts from the country teams that have prepared NAPs, and other stakeholders. The aim of the meeting was to support the Contracting Parties in their effort to implement the NAPs in a coherent and coordinated manner by sharing lessons learned and paving the way forward. The discussions focused on the main findings from the NAPs updating process, including the identified measures, operational targets, and indicators, the assessment of hotspot and sensitive areas, as well as other NAP elements. Priority common actions, measures and targets to achieve GES were identified and discussed at the meeting.

19. As regards the next steps, the meeting considered the paper *Regional Programme of Measures to achieve Good Environmental Status; Overview of gap analysis and proposals for new/updated measures*, (UNEP(DEPI)/MED WG.426/4). The paper outlined a possible approach to preparing new/ strengthened regional PoM needed to overcome the identified gaps. Based on the earlier findings of the UN Environment/ MAP Initial and EcAp gap analyses as well as on the *Regional PoM Analysis* (UNEP(DEPI)/MED WG.439/Inf.13), the main gaps (implementation gaps and/ or lack of measures) for pollution related ecological objectives were summarised (and presented at the meeting) as follows:

- (a) Insufficient coverage, level of treatment and operational efficiency of WWT systems;
- (b) Lack of performance standards and guidelines for key economic sectors contributing to marine and coastal environmental pollution such as agriculture, aquaculture etc.;
- (c) Insufficient measures to address atmospheric depositions and inputs of nutrients and contaminants through storm water/ runoff;
- (d) Inadequate solid waste management (including lack of measures to ensure decoupling of waste generation from economic growth, circular economy);
- (e) Insufficient implementation/ enforcement of existing measures to eliminate key contaminants;
- (f) There is no list of emerging contaminants;
- (g) Existing research, monitoring and assessment programmes are not sufficient for informed policy making and efficient management of marine pollution;

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<sup>7</sup> The meeting was organised by UN Environment /MAP (MEDPOL and Plan Bleu) in collaboration with the EU-funded Regional Project “SWIM and Horizon 2020 Support Mechanism”

- (h) Existing measures do not address plastics and microplastics sufficiently;
- (i) There is a lack of specific measures on cigarette butts;
- (j) Lack of resource efficiency measures and insufficient use of economic instruments.

20. An indicative set of different categories of measures to address these gaps was also proposed for the meeting's consideration, alongside with the following criteria (questions) that should guide identification and selection of measures for the new/ updated regional PoM:

- (a) (measure is proposed for issues/ sources/ pressures where) State of the environment data indicates deviation from GES target OR There is evidence that the trends are not improving or deteriorating at regional and/ or sub-regional level;
- (b) Significance of the driver (source)/ pressure/ impact the measure is addressing;
- (c) (knowledge/ information on) Social, economic and environmental impacts of measures;
- (d) Potential of measure to bridge the gap between current status and GES;
- (e) Potential for coordinated and/ or joint implementation on either regional or sub-regional level;
- (f) Multiple effects (measure has the potential to address several pressures/ sources/ impacts);
- (g) Relevance for other policies (e.g. biodiversity, climate change), EU legislation where appropriate, relevant global Conventions;
- (h) Technical feasibility of measures; and
- (i) (knowledge/ information on) Cost-effectiveness and/ or cost-benefit analysis of measures.

21. Discussion and recommendations issued by the meeting included the need to focus on a small number of issues/ sectors (e.g. plastic bags, rainwater management, agriculture etc.), and the need to organise capacity building and training workshops and develop/ implement pilot projects with a view to assess applicability of considered measures.

22. The meeting concluded that the regional gap analysis carried out under UN Environment / MAP Programme of Work and the experience of the Contracting Parties with the NAP update were reinforcing each other, thus representing a good basis to identify and elaborate new/ updated regional measures in the future. It was further agreed that a more concrete proposal on potential new/ updated regional measures should be prepared for consideration at the next MEDPOL FP meeting and for guidance on the next steps.

23. The main findings, proposals and recommendations of the current study, in particular those pertinent to the new/ updated regional PoM and related action plans, have been also consulted with countries representatives and other stakeholders in the final ActionMed workshop (PoM workshop) held on 30 November – 1 December 2016 in Madrid. Based on the feedback, proposal of the new/ updated regional PoM and related actions plans have been finalised.



## PART II – REGIONAL AND NATIONAL POM ANALYSIS: SYNTHESIS OF FINDINGS

### 1. National measures analysis

24. Recognised as a guiding principle for the overall work under the Barcelona Convention, EcAp is synergetic to the MSFD. The EcAp implementation is based on a 7-step roadmap and 11 ecological objectives (Decision IG. 20/4), which are highly consistent with the MSFD process.

25. The seven steps of the EcAp roadmap are:

1. Definition of an ecological vision;
2. Setting of common Mediterranean strategic goals;
3. Identification of important ecosystem properties and assessment of ecological status and pressures (the initial integrated assessment);
4. Development of a set of ecological objectives corresponding to the vision and strategic goals;
5. Development of operational objectives with indicators and targets;
6. Revision of monitoring programmes for on-going assessment and regular updating of targets;
7. Review, development and implementation of Action Plans and Programmes of measures to take into account the EcAp application progress.

26. By 2016, IMAP has been adopted and launched. NAPs have been prepared and endorsed by COP 19, providing a core of Programme of Measures on the national level for pollution related objectives. Moreover, Contracting Parties are developing other measures to implement legal and policy requirements as well as standards and recommendations of the Barcelona Convention.

27. Requirements for adoption and implementation of different types of measures to protect marine environment are set out in the Barcelona Convention itself as well as in its Protocols. Article 4 of the Convention, for example, calls upon Contracting Parties to “...*individually or jointly take all appropriate measures in accordance with the provisions of this Convention and those Protocols in force to which they are Party to prevent, abate, combat and to the fullest possible extent 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.*” Article 4 further stipulates that in implementing the Convention and its Protocols, the Contracting Parties shall adopt programmes and measures which contain, where appropriate, time limits for their completion.

28. Further references to taking ‘appropriate measures’ to prevent, abate, combat and to the fullest possible extent eliminate pollution from various pollution sources are found in the Convention provisions setting the basis for the seven Barcelona Convention Protocols, as well as in the Protocols themselves. Parties are thus called upon to:

- (a) take necessary legal and administrative measures,
- (b) adopt strategies, action plans and programmes and to develop measures, elaborate and implement, individually or jointly, as appropriate, national and regional action plans and programmes, containing measures and timetables for their implementation,
- (c) take preventive measures,
- (d) take necessary measures to protect, preserve and manage areas of particular natural or cultural value, threatened or endangered species of flora and fauna,
- (e) to carry out management, planning and other measures to ensure favourable state of conservation of endangered or threatened species and their habitats, and similar.

29. As already mentioned, EcAp implementation processes is foreseeing review cycles for the coming years, including further assessments of gaps, evaluations and adjustments of initial assessments, as well as review of the existing and completion of the EcAp programme of measures.

30. With regards to the Contracting Parties that are EU Member States, and in order to avoid duplication of work and reporting, it was agreed in the course of Barcelona Convention NAP preparation meetings that the PoMs prepared under the MSFD should be adopted for the NAP purposes for the ecological objectives 5, 9 and 10, provided that they take into account the provisions and specificities of the MAP Barcelona Convention system and respond to the commitments undertaken by COP Decisions.

31. The updated NAPs endorsed by COP 19 (held in Athens, Greece, in February 2016) incorporate operational objectives (set at the national level) providing links to GES targets and SAP/MED priority pollutants with quantitative targets and deadlines for achievement. The NAPs provide national programmes of measures, preselected based on economic analysis, prioritized according to specific, commonly agreed criteria, aggregated and linked to the established operational targets, and monitored through a set of indicators with regards to the three ecological objectives (EO5, EO9 and EO10). Each NAP includes a number of project fiches for financing investments based on the prioritized measures. The NAPs show a high level of commitment towards the pollution-related obligations under the Barcelona Convention, its Protocols and related regional plans, and have fully streamlined the EcAp taking into account national specificities. Successful and effective implementation of the NAPs is thus expected to systematically contribute to the achievement of GES targets by 2020 and 2025.<sup>8</sup>

32. The analysis presented in the UN Environment /MAP report *Synopsis of updated NAPs: Hotspots, sensitive areas, targets, measures, indicators and investment portfolios* (UNEP(DEPI)/MED WG.439/Inf.16) aimed to establish, among other things, what priority investment (technical) measures were commonly included in the programmes of measures. Results of this *NAP Synopsis* analysis are presented in subsequent tables (1-3). Measures found in at least 2 NAPs/ PoMs are shown in the tables, while those found in majority of the 16 reviewed NAPs/ PoMs are highlighted.

Table 1. Priority investment (technical) measures relevant for EO5

<b>Priority investment measures under EO5</b>	<b>Number of countries including the measure in the PoM/ NAP</b>
<b>Build/ extend sewage networks</b>	<b>8</b>
<b>Build/ expand/ upgrade WWTP</b>	<b>11</b>
Reduce storm water inflows to the sea	2
Improve the reliability of sanitation systems	2
Minimize input of nutrients into groundwater from agricultural activities	2

33. Sewage networks and wastewater treatment (the need to extend/ upgrade them) are an issue for the all the Contracting Parties that are non-EU MS. Situation is in most cases different in the EU Member States where significant coverage with wastewater treatment systems has been reached and where this type of measures is usually reported under the WFD Programme of Measures. Building/ expansion of sewage and wastewater treatment systems as well as prevention of nutrient inputs from agriculture were included in the PoMs of two EU Member States; one EU Member State included measures to reduce storm water inflows and to improve reliability of sanitation systems in the MSFD PoM.

<sup>8</sup> Information and assessments in this paragraph are from the document *Synopsis of updated NAPs: Hotspots, sensitive areas, targets, measures, indicators and investment portfolios*, UNEP(DEPI)/MED WG.426/3

Table 2. Priority investment (technical) measures relevant for EO9

<b>Priority investment measures under EO9</b>	<b>Number of countries including the measure in the PoM/ NAP</b>
<b>Build/ expand/ upgrade IWWTP</b>	<b>7</b>
Upgrading existing industrial facilities with BAT/ BEP	<b>4</b>
Collection/ containment/ treatment of mercury contaminated wastes	<b>5</b>
Collection and treatment of waste containing POPs substances	<b>6</b>
<b>Build/ expand/ upgrade hazardous waste landfill facilities</b>	<b>7</b>
<b>Remediate contaminated industrial sites</b>	<b>7</b>

34. Similarly to the situation with EO5, most of the priority investment measures included in the NAPs under EO9 were not found in the reviewed PoMs. Measures referring to upgrade of industrial WWTP and wider application of BAT/ BEP were found in the PoM of one EU Member State, while another one included measures on mercury contaminated wastes and wastes containing POPs in its WFD Programme of Measures.

35. As for the EO10, a small number of NAPs included marine litter clean-up campaigns. This on the other hand was in the focus of the PoMs, together with measures to strengthen waste collection and disposal system. Closure/ remediation of illegal dump sites was identified as an priority issue for the Contracting Parties which are not EU Member States according to the *NAP Synopsis* analysis.

Table 3. Priority investment (technical) measures relevant for EO10

<b>Priority investment measures under EO10</b>	<b>Number of countries including the measure in the PoM/ NAP</b>
<b>Establishing/ reinforcing collection of municipal waste</b>	<b>7</b>
<b>Constructing/ upgrading municipal solid waste landfills</b>	<b>7</b>
Organizing marine litter cleaning campaigns	<b>4</b>
<b>Strengthening waste collection and disposal systems</b>	<b>9</b>
<b>Closure and rehabilitation of illegal dump sites</b>	<b>8</b>

36. Overall, it can be concluded that priority common measures (measures found in the majority of the NAPs) are mainly formulated in response to the Regional Plans and SAP/MED. Collection and treatment of solid wastes and wastewater management represent an important task (and some cases an important challenge) for achieving the GES in the Mediterranean.

37. Findings from the *NAP Synopsis* analysis on the common measures were taken into account when proposing the set of new/ updated measures in the framework of this report.

## **2. Regional PoM analysis**

38. Regional gap analysis has been carried out (*see UNEP(DEPI)/MED WG.439/Inf.13*) by building upon and elaborating further findings of the UN Environment /MAP-Barcelona Convention *Initial Gap Analysis* UNEP(DEPI)/MED WG.401/5 and *Ecosystem Approach based Measures Gap Analysis* UNEP(DEPI)/MED WG.420/5. These analyses focused on the existing measures contributing

to the implementation of the Barcelona Convention and its Protocols on both regional and national levels, linking them to EcAp ecological objectives (EOs) and targets, and identifying the main shortcomings of the existing framework and its implementation to deliver the GES.

39. The aim of the ActionMed regional gap analysis was to review the main stressors and impacts on the Mediterranean Sea, examine the existing measures at regional level and identify further actions that are required in order to reach GES, including strengthening of implementation and enforcement of existing measures or adoption of additional new measures. The main analytical steps were:

- (a) Identification of main pressures and drivers;
- (b) Listing the measures adopted at regional level (to address pressures);
- (c) Assessing efficiency of adopted measures;
- (d) Identification of gaps i.e. assessing whether measures have the capacity to bridge the gap between current situation and GES.

40. The regional gap analysis concluded that a large number of regional level measures has been adopted to tackle the most important pressures and ensure achievement of GES. However, although significant progress has been achieved in some areas, some pressures are persevering and in some cases even increasing.

41. As regards eutrophication, the regional gap analysis concluded further actions were necessary in the following areas:

- (a) Full implementation of measures providing for establishment of WWT systems in all major coastal cities, promotion of secondary and tertiary treatment, upgrading treatment efficiency and increased reuse of wastewater;
- (b) Adoption of new measures for agriculture (addressing inter alia restrictions in fertilisers use, optimised nutrient use, promotion of sustainable and organic farming, wider use of EFAs to combat eutrophication, alignment with the EU policies);
- (c) Adoption of technical guidelines and/ or management standards for aquaculture;
- (d) Adoption of measures to prevent nutrient inputs from other sources (reduction of atmospheric depositions, better control of runoffs, use of wetlands as nutrient sinks etc.).

42. For **contaminants**, the following have been identified as the main areas where further measures are needed to address the gaps:

- (a) Full implementation of existing measures on urban and industrial wastewater treatment, better regulation, enhanced enforcement and control of sludge management;
- (b) Stricter implementation and enforcement of measures aiming to eliminate some key contaminants that continue to be present in the Mediterranean;
- (c) Adoption of new measures or Regional Plans for relevant sectors (including agriculture, aquaculture, desalination and tanneries);
- (d) Adoption of new measures to better address atmospheric deposition of contaminants;
- (e) Adoption of measures to promote Green Infrastructure and nature-based solutions for storm water management;
- (f) Upscale ratifications and implementation of both the Dumping (not yet in force) and Offshore Protocols;
- (g) Obligation for more frequent reporting, improvements in data collection;
- (h) Review and update of priority contaminants list.

43. The gaps that still exist towards achievement of GES for **marine litter** need to be addressed through:

- (a) Research, monitoring and assessments, including implementation of IMAP; setting of quantifiable reduction targets for priority items;
- (b) Stronger implementation and enforcement of existing measures and adoption of new measures to reduce plastic wastes;
- (c) Adoption of new measures to address the emerging issues of microplastics and nanoplastics;
- (d) Adoption of targeted measures specifically addressing the issue of cigarette butts;
- (e) Better implementation of existing measures and adoption of new measures for pollution from ships (e.g. no-special-fee system);
- (f) Better implementation and enforcement of prevention measures set out in the MLRP;
- (g) Integration of circular economy measures in the MLRP;
- (h) More detailed categorization of marine litter sources.

### **3. Socio-economic assessment at regional and national levels**

44. Plan Bleu has undertaken socio-economic assessment of four selected (potential) regional measures to achieve GES and has prepared a study providing detailed information on effectiveness, costs and benefits of the assessed measures. The study also provides guidelines for national socio-economic assessments of measures, based on the approaches applied in the course of PoM preparation in three EU Member States and international best practice. The study represents an important contribution to the overall socio-economic assessments work conducted in the course of EcAp implementation.

45. A review of the NAPs for nine countries has been conducted within the scope of this study to determine what forms of socio-economic analysis have been used in the process of compiling programme of measures for the updated NAPs.

#### **3.1 Plan Bleu's Socio-economic assessment of regional measures**

46. The four measures assessed in the Plan Bleu's study are: i) introduction of a plastic bag tax; ii) a no-special-fee as a cost recovery mechanism for port reception facilities for ship-generated waste; iii) fishing for litter programmes; and iv) extension of the current surface of marine protected areas. The intent was to provide examples of socio-economic analysis of different types of measures and show what type of results are achievable through literature-based cost-effectiveness, cost-benefit and multi-criteria analysis, and how can they be applied. The analyses also provided useful information on alternative measures potentially leading to the same effects as the assessed ones.

47. For the purposes of this report information is limited on the three pollution and litter-related measures.

48. The overall estimated cost-effectiveness of a regional Mediterranean plastic bag tax is €670 million for a 95% reduction of incremental plastic bag waste. Due to a lack of data, it was not possible to quantify many of the impacts of the plastic bag tax and the cost-benefit analysis has been conducted qualitatively, with partial quantification. As it was not possible to calculate a cost-benefit ratio or net present value, a multi-criteria analysis has been undertaken, showing an overall positive effect of the measure.

49. The measure's direct costs are borne by consumers who pay the plastic bag tax. Tax revenues easily cover public costs incurred due to administration of the tax, leaving around €650 million/ year be spent on environmental purposes. The overall employment impact is estimated to be neutral. Direct economic costs borne by the plastic bag manufacturing sector are likely to be compensated (or exceeded) by increased sales of reusable bags and bin liners. All other impacts, namely on ecosystem services and indirect impacts on different economic sectors, are largely positive and mainly linked to the reduction of plastic bag waste present in marine and coastal ecosystems.

50. Cost-effectiveness and cost-benefit aspects of the use of port waste reception facilities at no-special-fee have been analysed qualitatively. A multi-criteria analysis, comparing six different cost recovery mechanisms for port reception facilities has been conducted focusing on environmental and financial/ economic characteristics of the different mechanisms. The multi-criteria analysis indicates that the no-special fee scores highest against the selected performance criteria and is thus recommended as the preferred option to recover costs of port reception facilities for ship-generated waste. The measure's main benefits are linked to a significant reduction of chronic pollution from ships, positively impacting ecosystem services and several economic sectors which depend on the quality of the marine and coastal environment.

51. Fishing for litter schemes have been assessed quantitatively and qualitatively. Cost-effectiveness of relatively large-scale initiatives was estimated at a level of around €900/ ton of fished litter. Cost-benefit analysis has been conducted mostly qualitatively thus turning into to a multi-criteria analysis with an overall conclusion that the impact of the scheme is positive. The measure's costs include administrative/ management costs and waste management, treatment and disposal costs, which are generally borne on a project basis by public and private donors. The costs to the fishing sector are estimated to be small and mostly linked to the effort and time required to bag the waste and bring it to waste reception facilities at ports.

52. Among other things, the study concluded that strong Mediterranean cooperation in this area would allow streamlining of efforts needed to conduct socio-economic assessment of measures as countries could benefit from assessments conducted in other countries and adapt them to their national context.

### **3.2 Assessments in the framework of PoMs**

53. The Plan Bleu's study analysed approaches applied for socio-economic assessment of measures for Spain, Germany and France PoM, and the key findings are presented below.

54. Spain has used forms of cost-effectiveness and cost-benefit analysis specifically developed for the PoM. To analyse costs, available information on the budgets of identified measures has been collected. The costs of different measures have then been categorized on a 1-5 scale: 1= very high cost, 2= high, 3=moderate, 4=low, 5=very low cost. To analyse effectiveness of measures, their mitigation effects in relation to 18 pressures identified under MSFD has been also categorised on a 1-5 scale, but with reverse meaning of scores: 1=very low effect, 2=low, 3=moderate, 4=high, 5=very high. Average scores were then calculated to come up with a unique score on effectiveness. Assessment of benefits was done based on the effect of measures on 9 economic activities (aquaculture, fishing, tourism, etc.), also by assigning scores on a scale 1-5 for each activity and by calculating averages to come up with a single score to describe benefits.

55. The cost effectiveness of new measures was assessed by adding the cost and effectiveness scores and deriving an overall score for each measure, always ranging between 2 and 10. The same logic was applied for cost-benefit analysis. By using a scoring system instead of monetary and unit values, the cost-effectiveness and cost-benefit analyses conducted for the Spanish PoM have in fact assumed characteristics of a multi-criteria analyses.

56. Some of the measure fact sheets for the new (and existing but not fully implemented) measures in the Mediterranean PoM of France include indications about cost-effectiveness, while cost-benefit considerations are very rarely mentioned. Furthermore, information about direct costs of measures is included in some fact sheets. However, these indications are not established based on the application of a unique methodology or approach. Non-use values and ecosystem services do not seem to be assessed as a part of socio-economic assessment conducted under this PoM. The PoM contains several indications that socio-economic assessment would be done at a later stage.

57. As part of the development of its programme of measures, Germany has established measure fact sheets which include certain information on cost-effectiveness and cost-benefit analysis of measures. Depending on the measures, the degree to which the assessments have been conducted varies largely – from just listing relevant bibliography as a proof of measure’s effectiveness, to, for example, detailed estimations of costs for fishing for litter schemes for different ports. Assessments of benefits are mainly done in a qualitative manner.

58. Detailed guidance for the socio-economic assessment is annexed to the German PoM, containing all elements which typically comprise cost-effectiveness and cost-benefit analyses, including non-use values and ecosystem services. However, information provided in the measures’ fact sheets points to a conclusion that the guidance has not been applied to all the measures to a full extent.

59. The Plan Bleu’s study concluded the analysed countries applied very different approaches to socio-economic analysis, each of them exhibiting a number of limitations and therefore putting into question the applicability and feasibility of full-scale and comprehensive cost-effectiveness and cost-benefit analyses of all new measures. Time and resources needed to conduct a rigorous cost-effectiveness and/ or cost benefit analysis for a large number of measures obviously exceeded those that were available in the course of PoMs preparation. Multi-criteria analysis with elements from cost-effectiveness and cost-benefit analysis could be preferable option for countries, providing good levels of useful information on measures to guide decision making.

### **3.3 Socio-economic assessments in the NAPs**

60. For the purpose of this report, available NAPs were screened and a quick assessment was carried out as to how socio-economic analysis was included in the NAP update.

61. Similar to the experience with preparation of PoMs, different approaches and levels of details were applied in some of the national processes of updating the NAPs. The NAP update Guidelines strongly encouraged Contracting Parties to employ appropriate forms of economic analysis in elaborating NAP programmes of measures and to conduct cost-effectiveness, cost-benefit and/ or multi-criteria analysis. As regards the methodologies, these recommendations were fully aligned with those issued in the framework of MSFD CIS and based on the available guidelines on the EU level.

62. As a result, some form of economic analysis was applied in selecting programmes of measures in five out of nine NAPs reviewed for this study. The scope of application of economic analysis tools was different and covered, among others, sets of measures proposed under single operational objective, measures targeting remediation of hot spot areas or measures proposed to address specific issues (e.g. runoff management). Given the time, resources and data limitations, the countries modified respective methodologies and used mainly qualitative forms of cost-effectiveness and cost-benefit analysis as well as multi-criteria analysis to assess selected measures. In some cases however, simplified forms of monetised cost-effectiveness or cost-benefit analysis were carried out, while utilising results of related studies and assessments. In other cases, costs of implementing NAP measures were compared to costs of inaction (by using basic assumptions of the concept of costs of degradation of marine environment). As a rule, non-use values and ecosystem services were not addressed in these assessments in a significant extent.

63. The efforts made and results achieved in applying the socio-economic assessments of measures in the NAP update process are noteworthy, yet there is a large room for strengthening the use and role of economic analysis as decision support tools in the future work on elaboration and selection of new/ updated measures to achieve GES (on national as well as on regional level).

## **PART III: ELABORATION OF POSSIBLE NEW MEASURES AT REGIONAL LEVEL**

### **1. Areas and issues where new measures are needed**

64. The analysis conducted for the purpose of this report (based in particular on the findings of the regional gap analysis) highlighted a number of areas where further actions are needed to ensure achievement of GES. These mainly refer to the following:

- (a) pressures on marine habitats and species (including spread of non-indigenous species) and sea floor integrity from various human activities;
- (b) overexploitation of fish stocks;
- (c) eutrophication remains a challenge, in particular for some marine sub-regions/ their parts;
- (d) some contaminants still represent a problem;
- (e) pollution from atmospheric depositions and urban runoff and storm water needs to be addressed;
- (f) dredging and offshore activities need to be regulated/ managed in a better way;
- (g) marine litter;
- (h) cross-cutting issues (climate change, maritime spatial planning, ICZM, sustainable consumption and production) require stronger coordinated responses;
- (i) there are significant knowledge gaps as regards the impacts of various human activities and state of marine environment.

65. Implementation gaps or lack of measures have been identified both on the regional and national levels. For the achievement of GES, it is very important to ensure full implementation of the existing measures and their adjustments/ updating as the new information becomes available (e.g. through 2017 State of the Environment Report, IMAP, EcAp and MSFD review cycles). New measures should be phased in, starting with those that will address the most significant deviations from GES while taking into account implementation capacities. Whenever applicable, new measures should build on the previously established measures and achievements. Potential to strengthen coordination in developing and implementing measures is still significant and should be tapped.

### **2. List of potential new/updated measures**

66. Findings of the regional gap analysis were the starting point for elaborating new/ updated measures. Results of analyses were also taken into account.

67. Possible measures to address the gaps were formulated and screened against a set of criteria to identify the most relevant ones in terms of their effectiveness, significance of the driver/ impact they are addressing, relevance for other policies and potential for coordinated/ joint implementation. In doing so, interventions aiming to reduce implementation gaps for the existing measures as well as new measures targeting the most significant pressures/ impacts were considered. Particular attention was paid to areas where effectiveness of measures could be fostered through regional cooperation and/ or joint implementation of measures..

68. As a result, a list of possible measures for the new/ updated regional PoM was compiled and is presented in the table 4 for further elaboration/ refinement. The list comprises both existing and new measures. In some cases it was possible to define proposed measures to a significant level of detail. Some measures were defined as self-standing actions, while as in other cases framework interventions were proposed with sets of measures organised in the form of various plans, policies and guidance documents. Further work in the framework of MAP Barcelona Convention system is necessary to specify, elaborate in detail and confirm relevance of measures before formal preparation starts and decision-making process is initiated.

69. Only measures on pollution and litter-related EO are presented below.



Table 4: New/ updated regional PoM: proposed list of measures

Themes/ EO	Measures	Existing (E) or New (N)
<b>Eutrophication and contaminants EO 5, EO 9</b>	Strengthened implementation of Regional Plans’ provision on sewage and WWT systems; strengthening of capacities and provision of support for construction, expansion and upgrading of sewage/ WWT systems	E
	Development of efficiency standards for WWTPs; support strengthened control of their operations	E+N
	Setting of targets for secondary treatment; promotion of tertiary treatment (with targets) and of uptake of new improved WWT technologies; setting of targets for reuse of treated wastewater	N
	Strengthening of the existing and development of new measures to improve region-wide performance with sewage sludge management	E+N
	Promoting construction, expansion and upgrading of industrial WWTP (standards, strengthening of capacities)	E
	Technical guidelines and management standards (or Regional Plan) to tackle inputs of nutrients and contaminants from agriculture and to promote sustainable farming practices, in line with EU policies	N
	Technical guidelines and management standards (or Regional Plan) to tackle inputs of nutrients and contaminants from aquaculture in line with the EU policies and recommendations	N
	Guidelines on management of runoff from urban areas and effluents from storm water sewers; promotion of the use of Green Infrastructure and nature based solutions	N
	Development of plans to reduce pollution from atmospheric depositions	N
	Regional guidelines and management standards on desalination and tanneries	N
	Regional guidelines for management of dredged materials	N
	Strengthened implementation of measures for elimination of mercury inputs and adoption of strict measures for lead inputs	E+N
	Setting of Emission Limit Values for more contaminants, including emerging contaminants	N
	Strengthened implementation of the Regional Plans’ provisions on remediation of sites contaminated through industrial activities and/ or inadequate management of wastes, and on closure of illegal dumps	E
	Further alignment of the Dumping Protocol Annexes and Guidelines with the international legislation (London Protocol)	E+N
	Support for the development of harmonised legal frameworks at national levels and for implementation of MARPOL Annex IV on pollution from ships	E+N
	Promote updating/ preparation of national contingency and pollution response plans	E
	Support for ratification of the Offshore Protocol and implementation of the Offshore Action Plan (including development of regional offshore standards and guidelines)	E+N
Adopt an updated list priority contaminants taking into account ‘emerging pollutants’ such as pharmaceuticals, nano-materials etc.	N	
Establishment of national/ regional PRTRs	N	
<b>Marine litter EO10</b>	Strengthen solid waste management systems in the region: adopt quantifiable targets as appropriate, promote adequate collection and treatment/ disposal, stimulate recycling and uptake of new waste management technologies	E+N
	Strengthening the role and capacities of local authorities for solid waste management, addressing cost-recovery issues	E
	Promoting waste prevention at source, better integration of SCP principles and measures, decoupling waste generation from economic growth, green procurement and adoption and implementation of circular economy strategies	E+N

<b>Marine Litter EO10</b>	Strengthened implementation of the MLRP provisions on closing the illegal dumps	E
	Encourage and support establishment of appropriate sewage and storm water collection systems, WWTPs and waste management systems to prevent runoff and riverine inputs on marine litter	E
	Promote upgrading of WWTPs to reduce the inflows of plastics into the marine environment	E
	Support implementation of the MLRP through <i>inter alia</i> inclusion of marine litter into national regulations, preparation of Marine Litter National Action Plans, provision of regional coordination mechanisms and similar	E+N
	Enhanced monitoring and assessments (including implementation of IMAP) and adoption of quantifiable reduction targets for priority items	E+N
	Establishment of a regional marine litter database	E
	Stimulate reduction/ recycling/ prevention of plastics by, for example, adoption of recycling targets, promotion of sustainable consumption patterns, promotion of instruments to reduce packaging wastes, replacement of plastics with bioplastics where feasible, preventing/ reducing use of microplastics (microbeads) in personal care and cosmetics products, and similar	E+N
	Assess options for phasing out landfilling of recyclable wastes (in particular plastics)	N
	Adoption of common definition of microplastics and studies to improve knowledge (sources, quantities, impacts, possible reduction/ prevention measures, differentiated for primary and secondary microplastics)	N
	Promote introduction of region-wide plastic bag tax (alternatively promote coordinated approach to restricting single-use plastic bags)	E+N
	Regional coordination with the implementation of MARPOL Annex V on ship generated wastes	E+N
	The use of port waste reception facilities at no-special-fee	E+N
	Ensure implementation of the guidelines on the dumping of dredged materials	E+N
	Strengthened implementation of prevention/ retrieval of lost/discarded fishing gear; assessment options for collecting and processing/ recycling fishing gear and equipment at the end of its useful life	E+N
	Encourage and implement to the extent possible 'fishing for litter' schemes	E+N
	Study of marine litter hotspots (accumulations affecting sensitive areas)	
	Implement pilot projects for removal of marine litter accumulations impacting on MPAs	E+N
	Development and implementation of measures to reduce incidence of cigarette butts in marine environment, including provision of adequate facilities and signs on organised beaches, awareness raising and clean-up activities	E+N
	Enhanced partnerships, training and awareness raising activities	E
	Coastal Clean-up Day; clean-up activities targeting riverbanks	E+N
Promote and expand beach stewardship schemes	E+N	

### 3. Factsheets for priority measures

70. For four measures that were considered as priority measures through studies and consultations, factsheets were developed, partly relying on information produced through the socio-economic assessment (ActionMed deliverable D3.2). The four priority measures are plastic bag tax, no-special-fee as a cost recovery mechanism for port reception facilities for ship-generated waste, fishing for litter programmes, and expansion of the current network of MPAs (not included in the present document).

71. The factsheets contain the following information:

- (a) Description of the measure;
- (b) Rationale;
- (c) Category (existing/ new), mode of action, links to the MSFD KTMs (when possible);
- (d) Link to GES descriptor;
- (e) Link to driver, pressure and impacts;
- (f) Expected effects;
- (g) Scale of application (regional/ sub-regional/ national);
- (h) Coordination requirements/ needs;
- (i) Information on the impacts and effectiveness of measure, if available; information on costs and benefits;
- (j) Timing for preparation/ implementation (in line with the action plans).

72. Fact sheets for the four priority measures are presented below.

Title of the measure	Use of port reception facilities at no-special-fee
Description	Ships generate different types of wastes. A no-special-fee system aims at discouraging the (illegal) discharge of waste into the sea and is defined as a charging system where the cost of reception, handling and disposal of ship-generated wastes, originating from the normal operation of the ship, as well as of marine litter caught in fishing nets, is included in the harbor fee or otherwise charged to ships calling at port, irrespective of whether wastes are delivered or not. The no-special-fee therefore qualifies as an indirect fee and at the same time provides an incentive for ships to deliver their waste on shore. It is indirectly aligned with the polluter pays principle, as the overall polluting sector - maritime shipping – pays, but individual ships not generating waste also remain liable to the fee. The central idea of the no-special-fee is that the port fee should not be related to the amount of waste the vessel leaves in port.
Rationale	Port reception facilities for the disposal of a wide range of ship generated waste and cargo residues are already a requirement under the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) of the International Maritime Organization (IMO). The EU Directive 2000/59/EC for port reception facilities (PRF Directive) is aligned with this IMO Convention. Under MARPOL and the PRF Directive there is an obligation to provide port waste reception facilities (PRF), which must be adequate to meet the needs of ships using the port, without causing undue delay. The PRF Directive also requires the delivery of ship generated waste and the implementation of a cost recovery system by the Member States covering the costs of planning for, collecting and disposal of this waste.

	<p>At the level of the Barcelona Convention, UN Environment/MAP's Regional Plan for Marine Litter Management in the Mediterranean (2013) furthermore urges Mediterranean rim countries to "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 No-Special-Fee system."</p> <p>In the Mediterranean, there are about 600 ports and terminals recording ship movements and maritime transport produces around €70 billion in turnover per year and sustains around 550,000 direct jobs. Some Mediterranean ports have already adopted a no-special-fee system. However, a comprehensive survey of Mediterranean ports, the characteristics of their PRF and the cost recovery mechanism applied for these facilities is currently lacking.</p>
Link to EO	EO 9, EO 10; possibly also biodiversity, non-indigenous species, marine food-webs and eutrophication
Link to driver, pressure and impacts	<p>Driver: maritime transport, fishing, tourism</p> <p>Pressure: Introduction of heavy metals, POPs, oil</p> <p>Impacts: Contamination by hazardous substances</p>
Expected effects	Shipping accounts for about 20% of the global discharges into the sea. On a global level it is assumed that only about 27% of all ship waste is delivered to reception facilities, while the majority is dumped or incinerated on board or at port. Theoretically, adequate provision and use of PRF could absorb these discharges into the Sea and thus avoid the pollution stemming from them. Practical effectiveness of the measure depends on the existence of adequate PRF, provision of swift handling of wastes at ports, the level to which the system is harmonized on the regional level, etc.
Scale of application	National, regional
Coordination requirements/needs	Coordinated approach is needed across region, requiring high coordination efforts
Impacts, effectiveness, costs and benefits	Qualitative information on cost-effectiveness and cost-benefit aspects of the use of PRF at no-special-fee is available. A multi-criteria analysis, comparing six different cost recovery mechanisms for port reception facilities has been conducted focusing on environmental and financial/economic characteristics of the different mechanisms. The multi-criteria analysis indicates that the no-special fee scores highest against the selected performance criteria and is thus recommended as the preferred option to recover costs of port reception facilities for ship-generated waste. The measure's main benefits are linked to a significant reduction of chronic pollution from ships, positively impacting ecosystem services and several economic sectors which depend on the quality of the marine and coastal environment.
Timing for preparation/implementation	2017 – 2012

<b>Title of the measure</b>	<b>Plastic bag tax</b>
Description	A plastic bag tax is an environmental levy on single-use plastic shopping bags, imposed at a fixed per unit rate at the manufacturer or retailer/point of sale of plastic shopping bags to customers. The primary purpose of a plastic bag tax is to provide an incentive to reduce the use of plastic bags and thus, indirectly, to prevent littering. The introduction of a plastic bag tax is designed to change and explicitly itemize the price of plastic bags and therefore alter the behaviour of producers and consumers.
Rationale	The introduction of a plastic bag tax is in line with UN Environment/MAP's Regional Plan for the Marine Litter Management in the Mediterranean, aiming at reducing 20% of beach litter by 2024 and a significant and measurable decrease of other marine litter items.
Link to EO	EO1, EO9, EO10
Link to driver, pressure and impacts	Driver: multiple sectors and society in general Pressure: marine litter (land-based) Impacts: mostly physical disturbance (plastic bags comprise app. 8.5% of marine litter)
Expected effects	<p>Precise proportion of marine litter attributed to plastic bags is variable and differs depending on the location and the sampling methodology. Practical experiences with application of plastic bag tax show positive results. For example, introduction of a plastic bag levy in Ireland in 2002 (at a unit rate of 15 cents) brought the use of bags per capita from an estimated 328 to 21 bags/year. This has fallen further when the levy was raised to 22 cents in 2014 to an estimated 14 bags/capita.</p> <p>Practical effectiveness of the measures is likely to depend on the a set of factors including fixing of the tax rate at right amount, broad definition of tax base (bags to which the tax is applied), use of revenues, visibility and others.</p>
Scale of application	National, regional
Coordination requirements/needs	Medium coordination needs
Impacts, effectiveness, costs and benefits	<p>The overall estimated cost-effectiveness of a regional Mediterranean plastic bag tax is €670 million for a 95% reduction of incremental plastic bag waste.</p> <p>The measure's direct costs are borne by consumers who pay the plastic bag tax. Tax revenues easily cover public costs incurred due to administration of the tax, leaving around €650 million/ year be spent on environmental purposes. The overall employment impact is estimated to be neutral. Direct economic costs borne by the plastic bag manufacturing sector are likely to be compensated (or exceeded) by increased sales of reusable bags and bin liners. All other impacts, namely on ecosystem services and indirect impacts on different economic sectors, are largely positive and mainly linked to the reduction of plastic bag waste present in marine and coastal ecosystems.</p>
Timing for preparation/implementation	2017 – 2021

<b>Title of the measure</b>	<b>Fishing for litter</b>
Description	Fishing for litter initiatives have a twofold aim: to remove marine litter from the marine environment and to raise awareness of marine litter issues, particularly within one of its main stakeholders – the fishing sector - where the measure helps to prevent littering due to Abandoned, Lost or otherwise Discarded Fishing Gear. The main actors in fishing for litter initiatives are the fishermen who are provided with bags to collect litter that accumulates in their nets and other fishing gear during normal fishing activities and to dispose of unwanted fishing gear. The collected waste is disposed at port reception facilities for recycling or final disposal at land. Fishermen participate on a voluntary basis while harbours and ports assist with the handling of waste.
Rationale	UN Environment /MAP's Regional Marine Litter Plan urges Mediterranean countries to “explore and implement to the extent possible the ‘Fishing for Litter’ system, in consultation with the competent international and regional organizations, to facilitate clean-up of the floating litter and the seabed from marine litter caught incidentally and/or generated by fishing vessels in their regular activities including derelict fishing gears”.
Link to EO	EO10, possibly also biodiversity and commercially exploited fish species
Link to driver, pressure and impacts	Driver: general land-based activities, tourism, fisheries, shipping Pressure: marine litter Impacts: mostly physical disturbance
Expected effects	Effectiveness of fishing for litter initiatives has been proven repeatedly, through several projects/ initiative implemented in various marine regions. Prerequisites for a successful implementation and practical effectiveness include size of participating boats and sound administration/ management of the scheme, including communication and monitoring.
Scale of application	National, regional
Coordination requirements/ needs	Medium coordination needs
Impacts, effectiveness, costs and benefits	Cost-effectiveness of relatively large-scale fishing for litter initiatives was estimated at a level of around €900/ ton of fished litter. Overall conclusion of a qualitative cost-benefit/ multi-criteria analysis is that the impact of the scheme is positive. The measure's costs include administrative/ management costs and waste management, treatment and disposal costs, which are generally borne on a project basis by public and private donors. The costs to the fishing sector are estimated to be small and mostly linked to the effort and time required to bag the waste and bring it to waste reception facilities at ports.
Timing for preparation/ implementation	2017 – 2021

## PART IV: ACTION PLANNING

### 1. Medium and long-term regional PoM Action Plan

73. The **overall objective** of this action plan is to bridge identified gaps between the current state of the marine and coastal environment and the GES in the Mediterranean region, through elaboration and adoption of the new/ updated regional measures on pollution and litter as well as through strengthening of capacities for the implementation of existing and new/updated measures. To achieve this objective, several actions are proposed (linked to identified gaps and solutions) with appropriate timeline for their implementation and actors to be involved (table 5).

Table 5. Medium and long-term regional PoM action plan

Gaps	Solutions	Actions	Timetable	Actors involved
<p>Identified areas for which existing regional measures are not sufficient or efficiently implemented to achieve GES in the Mediterranean, including:</p> <ul style="list-style-type: none"> <li>• Eutrophication, in particular for some marine sub-regions/ their parts</li> <li>• Certain priority and emerging contaminants</li> <li>• Pollution from atmospheric depositions and urban runoff and storm water</li> <li>• Management of dredging and offshore activities</li> <li>• Marine litter, especially plastics and microlitter</li> <li>• Knowledge gaps as regards the impacts of various human activities and state of marine environment</li> </ul>	<p>Strengthened implementation of existing measures and adoption of proposed new / updated regional measures to fill the identified gaps (the full list can be found in table 5),</p> <p>Further promote the exchange of experiences and best practices between the Contracting Parties to the Barcelona Convention</p> <p>Support cooperation at regional/ subregional levels for the implementation of measures</p> <p>Ensure adequate funding for capacity building activities and the implementation of measures</p>	<b>Adoption of potential new/ updated regional measures</b>		
		<p>Refine the proposed list of new/ updated measures in order to be presented at the Meeting of MEDPOL Focal Points as appropriate, taking inter alia into account the main findings of the 2017 Quality Status Report</p>	<p>May 2017</p>	<p>UN Environment /MAP MED POL BC Contracting Parties</p>
		<p>Revise the list and submit the revised list of potential measures to the MAP Focal Points Meeting through the EcAp Coordination Group, for information and/or discussion and to get guidance on follow-up, as appropriate</p>	<p>September 2017</p>	<p>UN Environment /MAP MED POL MAP FP EcAp Coordination Group BC Contracting Parties</p>
		<p>Undertake feasibility studies for some priority new/ updated regional measures during the 2018-2019 biennium, if/ as mandated by the MAP Focal Points Meeting; The feasibility studies will provide and/ or complement existing information on technical viability, expected contribution to GES, socio-economic impacts, etc., as well as information on the need to develop regional measures</p>	<p>2018-2019</p>	<p>UN Environment /MAP MAP Focal Points BC Contracting Parties Environmental and socioeconomic experts</p>

Gaps	Solutions	Actions	Timetable	Actors involved
Lack of capacities for implementation of regional measures (existing and new/ updated)		Based on the findings of feasibility studies and recommendations from the MED POL Focal Points Meeting, ECAP Coordination Group and MAP Focal Points Meetings, COP 21 may mandate elaboration of concrete new/ updated measures during 2020 – 2021	2019	UN Environment /MAP MED POL EcAp Coordination Group MAP Focal Points BC Contracting Parties
		Adoption of new/ updated measures by COP 22 as appropriate.	2021	UN Environment /MAP BC Contracting Parties
		<b>Strengthened implementation</b>		
		Activities to be envisaged in the Programme of Work of UNEP/MAP and H2020 aiming to promote sharing of best practices and capacity building with a particular focus on implementation of new/updated regional measures	2017 - 2021	UN Environment /MAP H2020 BC Contracting Parties
		Specific projects to provide funding and technical support in view of strengthening capacities and supporting implementation of specific measures	2017 - 2021	UN Environment /MAP H2020 EU - EEA BC Contracting Parties



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