





## I. General Background

1. At the meeting of the Contracting Parties held July 2008 in Almeria Spain (COP 15), the States agreed to begin the process of implementing an Ecosystem Approach in order to move towards the goal of “a healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations” (Decision IG 17/6).

2. The Mediterranean Action Plan (MAP), together with its technical components MEDPOL and SPA/RAC, has begun the process of undertaking assessments, following a decision made by the Contracting Parties to subdivide the Mediterranean region into four loosely defined geographic areas. These geographic areas are delineated solely for the purposes of assessment and analysis, and are:

- SubRegion #1: **Western Mediterranean** (comprised of coasts and Mediterranean waters of Algeria, France, Italy (Ligurian and Tyrrhenian Seas), Monaco, Morocco, and Spain)
- SubRegion #2: **Ionian Sea and Central Mediterranean** (comprised of coasts and waters of Greece (Ionian Sea), Italy (Ionian Sea), Libya, Malta, and Tunisia)
- SubRegion #3: **Adriatic** (comprised of coasts and waters of Albania, Bosnia & Herzegovina, Croatia, Italy (Adriatic Sea) Montenegro, and Slovenia)
- SubRegion #4: **Eastern Mediterranean** (comprised of coasts and Mediterranean waters of Cyprus, Egypt, Greece (Aegean and Cretan Seas), Israel, Lebanon, Syria, and Turkey)

3. In coordinating these assessments, MAP and its technical components MEDPOL and SPA/RAC identified national consultants and sub-regional coordinators that correspond to the working divisions outlined above. SPA/RAC, in close collaboration with national authorities, selected national biodiversity experts in 17 countries. In addition, SPA/RAC engaged four international consultants to coordinate the compilation of biodiversity information within each subregion, and to give guidance and technical support to the national consultants. MEDPOL also contracted four sub-regional coordinators, in order to oversee the preparation of reports dealing with pollution of the marine environment and land-based sources of pollution in the four subregions. These subregional consultants are working to harmonize the data and coordinate the merging of input; collate, revise, and provide coherence to additional inputs obtained from the MAP secretariat; prepare a harmonized document for each respective subregion; and present draft and final reports to MEDPOL.

4. The pre-assessment reports that are contained in section III of this status report summarize progress made in drafting the subregional assessments, highlighting gaps that are emerging in the assessments. The concluding section suggests steps that could be taken to facilitate the timely completion of Step 3 of the roadmap towards an Ecosystem Approach (EA).

## II. Assessments: What is Optimal Vs What is Achievable?

5. The purpose of targeted assessments, like the one called for in Step 3 of the roadmap to an Ecosystem Approach for the Mediterranean, is to identify what human activities, direct or indirect, need better managing. Assessments can also point to ecosystems, habitats, and even species that need restoration or recovery. In the Mediterranean, this first stage of assessments allows the establishment of baseline conditions, or determination of where Good Environmental Status (GES) exists and where it is lacking. Developing the initial assessment also allows for subsequent critical steps: the

determination of trends in environmental condition or ecological status, and the identification of objectives or targets for an Ecosystem Approach to management.

6. For EA purposes, the assessment must be ambitious in terms of being comprehensive and technically rigorous, but it also must be undertaken in a way that is realistic and achievable, using measurable indicators that are uniformly assessed according to standard methods.

7. There are an almost infinite number of environmental and ecological parameters that one could assess in determining environmental status, and in deriving the necessary information to amend management so it is ecosystem-based, efficient, and effective. In the case of the Mediterranean Sea, with its vast, heterogeneous, multinational character and the inconsistent availability of information on marine and coastal ecosystems, as well as its uneven capacities for management, a focus on what is achievable is paramount.

8. Whereas Mediterranean EU Member States are reviewing a set of requirements put forward under the Marine Strategy Framework Directive, non-EU Member States present information on environmental condition in variety of ways in national reporting and in reporting undertaken by SPA/RAC and other MAP technical components. A great challenge of the four subregional assessments, and the overall assessment that is required for Step 3 of the roadmap, will be to determine how to harmonize different approaches and select datasets and perform metadata analyses are truly relevant to the task at hand. All of this must be done in a timely manner as well, since the Contracting Parties have made a commitment to a timebound process which moves them towards an Ecosystem Approach.

9. Thus, as also stated in the stock-taking report, assessments and environmental monitoring are not one and the same thing. In order to perform assessment in a meaningful way, the gathering of information and any monitoring that is undertaken must be done in a way that is strategic and targeted. The ultimate aim of assessment is not to determine the condition of marine ecosystems, but rather to discern precisely how human activity is impacting ecosystems, and the ability of those ecosystems to continue to provide ecosystem services. This information can then be used to amend management so it is more integrated and effective – in other words, moving management from a sectoral approach to an Ecosystem Approach.

10. Information acquired or being acquired for the four subregional assessments comes from a great variety of sources, including, inter alia, the National Diagnostic Analyses developed under the LBS Protocol of the Barcelona Convention; implementation of monitoring programs in the framework of MEDPOL; SAP Bio and national biodiversity monitoring being undertaken by the Contracting Parties; monitoring of SPAMI, RAMSAR, and Natura 2000 sites; MAP-based monitoring of the implementation of Regional Action Plans on endangered species; Environmental Impact Assessments being undertaken by aquaculture, energy, and mining sectors; marine pollution national monitoring in the framework of MED POL Programme, monitoring of pollutants loads discharged from municipal and industrial sources; Marine Pollution Index reports; fisheries monitoring undertaken by the GFCM; monitoring under the Water Framework Directive; and Ecological Quality Assessments. Some of the information in these monitoring and assessment initiatives has already been synthesized for the purpose of specialized, targeted assessment, as is the case for the 2009 MEDPOL eutrophication and hazardous substances reports. It should be noted that this is in stark contrast to the situation in the OSPAR and HELCOM regions, where the smaller scale of focal area and the existing harmonization of research and monitoring programmes greatly streamlines the information coming in for assessment.

11. Nonetheless, the situation in the Mediterranean is such that there is a very high volume of data, information, and sectoral assessments which need to be synthesized in

order to be meaningful. MAP technical components gather large volumes of data, as do national authorities meeting the legal obligations of national legislation and international agreements. Future monitoring and assessment will need to be much more focused on a small subset of parameters (indicators), in order to determine trends in a way that is realistic, feasible, and achievable within the timeframes allotted, whilst still being technically rigorous.

12. Though the countries of the Mediterranean are following their own standardized approach to monitoring and assessment, such as activities aimed at meeting the provisions of the SPA Protocol and the national monitoring systems, some guidance is also available from other regions. For instance, the EU Thematic Group on Biodiversity (under the Marine Strategy Framework Directive) suggests that even if maintaining biodiversity is the central goal of an Ecosystem Approach, monitoring biodiversity itself is generally too costly to be achievable. The TG Report suggests instead that priorities be established by monitoring pressures, particular environmental states, or particular management responses. It suggests one of two approaches: monitoring particular aspects of biodiversity, with selected species or habitats as proxies for overall biodiversity, or using a risk-based approach that focuses monitoring on key pressures. These two are not mutually exclusive and could be combined.

13. The subregional assessments, though incomplete and not yet synthesized, could be very useful in guiding the MAP Secretariat, its components, and Contracting Parties in determining priorities. These priorities will in turn influence the selection of targets and indicators (or, in terms of the roadmap steps 4 and 5, ecological and operational objectives and the criteria and indicators associated with them). The priorities will also help MAP establish an effective and efficient system by which to undertake future assessments, helping Contracting Parties determine trends and identify adjustments to management that will lead them towards an Ecosystem Approach.

### **III. Pre-Assessment Summaries**

#### **Pre-Assessment Sub-Region #1: Western Mediterranean**

14. The Western Mediterranean region is expected to have the greatest amount of data available (among the four subregions) on ecosystem properties, including biodiversity status, human impacts on biodiversity, and pollution from marine and land-based sources. This does not reflect the ecological or biodiversity importance of this region in comparison to the others, so much as the longer history of systematic investigation and research in environmental parameters. However, at this point in the process (i.e. before the assessments have been finalized), national draft reports on biodiversity were only available for Algeria and Morocco. The Subregional Coordinator for synthesizing the pollution information, Dr. Francois Galgani of IFREMER, synthesized most of the available information on pollutants, though the physiochemical characteristics of the subregion and information on sediments need to be further developed.

15. At this interim stage, several preliminary conclusions can be drawn about the environmental status of the western Mediterranean region.

16. Firstly, there are notable differences between the northern and southern reaches of this region in terms of systematic understanding of habitat distribution and condition, in part reflecting resources available to undertake research, monitoring, and analysis activities. The northern portion of the Western Mediterranean is well-studied but also heavily impacted from industrialization, urbanization, land-based sources of pollution coming from major river basins, and impacts of activities at sea, including shipping, commercial fishing, etc. The southern portion, while less heavily impacted, is also less well-known and well-studied, and

overfishing, conflicts between artisanal and commercial fishers, outbreaks of harmful algal blooms, loss of *Posidonia* meadows, and other issues suggest that environmental status could be improved.

17. In all parts of the western Mediterranean, biodiversity and water quality impacts are most pronounced at and near large urban areas. This is a generalization that applies to the whole of the Mediterranean, though urban impacts on Mediterranean biodiversity are variable due to differences in municipal environmental policies, such as treatment of wastewater, and differences in date of original settlement and degree of naturalness of the adjacent areas in recent times. For fast-growing and relatively new urban centres, the impact on environmental quality and biodiversity can be relatively profound, especially if compared to urban centres that have existed for centuries (and which caused significant impacts on marine ecosystems a very long time ago).

18. The loss of seagrass habitat in the Western Mediterranean is of particular importance, since *Posidonia oceanica* is an important environmental feature that provides nursery habitat for commercial fisheries species, provides feeding grounds for an even wider variety of marine species, and acts as a buffer against erosion. These services contribute to the high value of seagrass – the fact that much *Posidonia* is at risk from pollution, over-fishing (especially of grazing species), physical disturbance, and changes to hydrology, make this habitat a priority for conservation and management.

19. According to the interim subregional assessment, the drivers behind the loss of seagrass include 1) industrial and urban pollution, 2) turbidity increases due to increased nutrients in fine sediment and organic matter, 3) dredging impacts, 4) destructive fishing, including use of explosives, 5) coastal constructions, and 6) changes in sediment dynamics. The latter driver has its roots in changes to hydrology that emerge due to changes in freshwater delivery to coasts and estuaries (because of freshwater diversion from rivers for hydroelectric energy generation, use in agriculture, human consumption, etc.), as well as changes to coastal processes such as occur with coastal armouring (seawalls), jetty construction, and – most importantly – land use that increases sedimentation in nearshore environments. This includes clear-cutting of vegetation in the coastal zone and in watersheds, removal of riparian wetlands and estuarine wetlands that normally trap sediments before they reach coastal waters, lack of policy or insufficiently enforced policies concerning development of the coastal zone, and unsuitable mitigation measures during coastal and marine construction and dredging operations.

20. Fishing impacts and fishing beyond sustainable limits are common in the western Mediterranean and are arguably the main driver of major changes in food web dynamics and productivity. However, both Moroccan and Algerian national experts attest to the lack of study on fishing impacts on biodiversity in general and on the food web in particular.

## **Pre-Assessment Sub-Region #2: Ionian Sea and Central Mediterranean**

21. Portions of this subregion are relatively under-studied in comparison to other subregions. Furthermore, at time of writing the status of the assessments was incomplete, with information from major geographic areas missing. Regarding biodiversity, the SPA/RAC subregional consultant received only Greece's report for the Ionian Sea, and the MEDPOL pollution expert, Prof. Victor Axiak of the University of Malta, has yet to submit his interim report, although according to the MEDPOL progress report, Mediterranean-wide reports on eutrophication and other aspects of environmental status and National Diagnostic Analysis reports for Greece, Italy, Libya, Malta, and Tunisia will provide the foundation for the subregional pollution assessment.

22. Greece completed its portion of the national draft report for this region, and preliminary conclusions can be drawn from this study. The Ecological Status of all Hellenic Surface waters report (HCMR/EKBY 2008) identifies 16 areas of compromised biodiversity in the Ionian Sea. Agricultural run-off, river-borne urban pollution, pig farming operations, and other industrial effluents from industries near coastal waters are the main cause of biodiversity loss.

23. Fishing is a major pressure in the region, and fisheries interactions with threatened, rare, or vulnerable species remain problematic. Destruction caused by resource extraction and dynamite (explosives) fishing is also likely to be a major pressure, though the impacts have not been systematically quantified.

24. As in the Aegean portion of Greek waters, Posidonia meadows are considered a critical marine habitat in the Ionian Sea. Fifteen major sites have been mapped and assessed for condition and representivity by the Greek government. These, together with other priority sites identified by international non-governmental organizations like IUCN and WWF, could help focus assessment priorities on ecosystems with high ecosystem services value.

### **Pre-Assessment Sub-Region #3: Adriatic Sea**

25. The Adriatic subregion is relatively small and more discretely bounded than the other subregions, and certain ecological aspects of this region are well-studied. However, at the time of writing, the subregional coordinator for biodiversity had only received the national draft reports of Albania, Bosnia & Herzegovina, and Slovenia. Draft national reports from Croatia and Montenegro are forthcoming, and a report on biodiversity in Italy's Adriatic waters is pending.

26. Regarding pollution, Dr. Monika Peterlin completed an initial gap analysis and draft report summarizing available information on pollutant loading and location of pollutant hotspots. Physicochemical data will be derived using literature search as well as available MEDPOL data and the EEA SoE2010 Report. Information on pressures and impacts will also be synthesized, however information on noise and thermal pollution and effects of desalination plants will not be available. Some information on desalination effects can be derived from a Slovenian case study to be presented in the subregional report to MEDPOL.

27. This semi-enclosed sea is particularly vulnerable to pollution impacts, given the shallowness of the sea and the limited flushing that occurs at its southern flank. Solid waste pollution is a problem in most parts of the sea, and although the largest forms of debris (e.g. household appliances) have declined in recent years, marine litter still remains a problem. Another major issue for the Adriatic as a whole is eutrophication, with nutrients coming from urban and rural sewage, agricultural run-off, and aquaculture /mariculture operations. The presence of mucilages (mucus aggregates) continues in the Trieste region, with impacts on recreation (and thus local economies) as well as presumed impacts on biodiversity. Whether these mucilages are linked to increases in eutrophication, or over-fishing, as been speculated but not definitively shown.

28. Overfishing and destructive fishing are occurring in many areas, and many of the national draft reports point to the urgent need to control fishing by prohibiting certain gears or techniques and establishing marine protected areas or fisheries closures.

29.

**Pre-Assessment Sub-Region #4:  
Eastern Mediterranean**

30. Significant information has come in from the Eastern Mediterranean subregion. National draft reports on biodiversity were received from Greece (Aegean and Cretan Seas portion), Israel, Turkey, and Syria. The national draft report on biodiversity of Egypt is expected shortly. For assessing pollution and its impacts, subregional coordinator Dr. Nikos Streftaris of HCMR, Greece, has provided a synthesis of available data, using the National Diagnostic Analysis reports as well as the summaries on eutrophication and hazardous substances prepared by MEDPOL (2009).

31. Eutrophication and pollution by trace metals and pesticides seem to be major issues in this region, at least around urban areas (where the most monitoring is being done) and particularly within gulfs that have ports or border major cities. The subregional coordinator has retrieved a summary of pollution issues in the region from the EEA/UNEP MAP report of 2006, which could be a good model of how to present synthesized information on pollution within and between all four of the subregions. Table 1 shows this relative scaling of pollution issues, by broad category of pollutant type, below.

**Table 1.** Priority issues in Eastern Mediterranean  
**Source:** Reprinted from EEA, 2006

	Urban effluents	Urban solid wastes	Industrial effluents	Oily effluents	Stockpiles of toxic chemicals	Coastal eutrophication	Coastal urbanisation
Cyprus	+/-	-	+	-	-	-	+/-
Egypt	+	+	+	+/-	-	+	+
Greece	+	+	+	-	-	+/-	+/-
Israel	+	-	+	+/-	-	+/-	+/-
Lebanon	+	+	+/-	-	-	-	+
Syria	+	+	+	+	-	+/-	+/-
Turkey	+	+	+	+/-	-	+	+

Note: + : Important problem; +/- : Medium problem; - : Small problem

**Source:** EEA, 2006

32. MAP had previously described pollution hotspots and the subregional draft national reports update this information. Common to all national reports is attention to the continuing pollution impacts caused by land-based sources, though for some classes of pollutants, the situation is improving.

33. The draft national report by Greece points to the importance of lagoons and associated wetlands, and the threats posed by hydrological changes, coastal constructions, and pollutants. Transitional areas are fewer in the more arid portions of the subregion to the east – here aquaculture impacts and desalination impacts are major cause for concern. Habitat loss from coastal development – increasing everywhere in the subregion, is listed as a major pressure reducing the environmental status of the area.

34. Overfishing and destructive fishing are highlighted as major pressures in many parts of the subregion, but the biodiversity portion of the subregional assessment calls for further research into fisheries and threatened species (sea turtle / monk seal) interactions – this seems to suggest an absence of effective monitoring and management of fisheries in the region.



35. Under the habitats Directive (92/43/EEC), the Greek government undertook large scale cartography, mapping 45 major Posidonia meadows and rating them in terms of representivity and condition. This information, combined with information coming in from other national experts and from non-governmental organizations such as IUCN and WWF, could be used to prioritize future assessment and monitoring.

### **Main Preliminary Conclusions Across the Four SubRegional Assessments**

36. Many of the four of the subregional assessments point to major gaps in information concerning both biodiversity (patterns and changes) and pollution (hotspots, trends in quantity of pollutants, and impacts of pollutants on biodiversity, on habitats, and on ecosystem services – including fisheries production). In general, there is great need for consistency in what is being measured and how it is being measured. Even in the cases of National Diagnostic Analyses, different methodologies create conditions in which it is difficult to compare data from place to place. Also, as new methodologies emerge, it will become impossible to determine changes as compared to reference or baseline conditions. Adopting a common set of practices to assess priority features of the marine and coastal ecosystems will be of primary importance to determine trends and derive the kind of information necessary to tailor management.

37. If the Marine Strategy Framework Directive descriptors are taken as a standard or as a model for how to organize disparate and extensive assessment information, then it is clear that most parts of the Mediterranean have either not developed the data, or have not developed the data in a way that it can be used to qualify the ecosystem using that descriptor. The eleven descriptors being proposed for use in the application of the Marine Strategy Framework Directive are as follows:

- 1) biodiversity is maintained
- 2) non-indigenous species introduced by humans not at levels that adversely alter ecosystems
- 3) populations of commercially exploited fish and shellfish are within safe biological limits
- 4) all elements of food webs occur at normal abundance
- 5) human-induced eutrophication is minimized;
- 6) sea floor integrity is safeguarded
- 7) permanent hydrological changes to not adversely impact the ecosystem
- 8) contaminants are at levels not giving rise to pollution effects
- 9) contaminants in seafood do not exceed public health standards
- 10) marine litter is minimized
- 11) introduction of energy is at levels that do not adversely affect [organisms]

38. Given standard monitoring practices in the Mediterranean Basin, many of these descriptors can be assessed and quantified. However, some will need additional research, either to gain the data or to analyze the data in a way that is aligned with the criteria for the descriptor. For instance, there are serious gaps in all four subregions concerning the status of marine food webs. Some of the data to inform this descriptor are available in fisheries databases or national biodiversity accounting, but the data have not been fed into Marine Trophic Indices to discern changes in energy flows or structure of food webs. That said, the European Regional Seas Model (ERSEM) has been applied in 18 Mediterranean locations – and this analysis could well be expanded in order to conform or be harmonized with what European Union countries are doing under the Marine Strategy Framework Directive.

39. Similarly, the subregional assessments have tended to offer qualitative assessments rather than hard data for many of the descriptors listed above (at least this is what is apparent from the syntheses of national reports – it may be that the national reports themselves do refer to comprehensive datasets). This is particularly the case with changes in hydrology (descriptor 7) and marine litter (descriptor 10) – both of which are touched upon in all four subregional assessments but which are not quantified in most parts of the Mediterranean region.

40. The main pressures affecting environmental status will not be known until all the assessment information is collected and collated in each region – however several key threats are common across all four subregions. These include: overfishing and destructive fishing (affecting proposed EU descriptors 3, 4, and 6); land-based sources of pollution – especially nutrients that lead to eutrophication (affecting proposed EU descriptors 5, and indirectly, 8 and 9); and introductions of non-indigenous species, many of which become invasive (affecting proposed EU descriptors 1 and 2). Additional pressures common to all four subregions include loss or degradation of transitional or estuarine areas, which serve as critical nursery areas for commercial fisheries and also support unique assemblages of species (partly captured in proposed EU descriptor 7), as well as marine litter (proposed EU descriptor 10) and thermal and noise pollution (proposed EU descriptor 11). Not until all the assessments are completed can some priority ranking be undertaken to determine which pressures are paramount throughout the Mediterranean.

41. Cause and effect analysis must also be done in order to determine what human activities are leading to the environmental outcomes documented. For instance, if Chlorophyll a production is increased in an area, it will be necessary to determine if this results from increased nutrient loading from land-based sources, or from hydrological / oceanographic changes at sea. Knowing the drivers behind impacts is necessary in order to craft a management response that will adequately address the pressure and improve the ecological status. In much of the subregional drafts, some indication of driver is given, but it will be important to ascertain the certainty with which such cause and effect statements can be made, and have citations to published research or datasets to substantiate statements.

42. Availability of trend data is another feature of environmental monitoring of the Mediterranean that the subregional assessments have highlighted. Trends can be discerned for some classes of pollutants (nitrogen and phosphorus, as well as trace metals and pesticides in places where monitoring programmes have been in place for some time). Trend information can also be derived for commercial fisheries, although illegal, unregulated and underreported fishing remains a problem within national waters, and even more so in Areas Beyond National Jurisdiction.

#### **IV. Options for Determining Priorities and Selecting Ecological and Operational Objectives**

43. Streamlining the assessment process and making it more efficient and effective -- without compromising standards for technical rigour -- is necessary, but there are several different options for doing this. Presenting these options and discussing them will be a major agenda item for the First Meeting of Technical Experts, scheduled for 8-9 April 2010 in Rome.

44. One method concentrates on identifying key anthropogenic pressures and their relative intensity. These major or most significant threats could then be displayed graphically to facilitate the identification of priorities. For instance, UNEP MAP could use Geographic Information Systems (GIS) to locate and graphically show 'hotspots' for:

- commercial fishing over-exploitation
- destructive fishing
- port development
- shipping
- oil and gas exploration and extraction
- marine mining and dredging
- major coastal constructions
- sewage and industrial outfalls
- urban sprawl
- dumping areas (even if illegal)
- areas of freshwater diversion affecting estuaries and lagoons
- eutrophication areas
- hypoxic or anoxic expansions

45. This would certainly provide information on major marine and coastal management issues. However, it would be useful to couple such pressures assessments with what is known about ecosystem services values, in order to define even more defensible priorities.

46. For example, a Mediterranean-wide inventory of critical habitats such as seagrass beds, intact rocky shorelines, persistent frontal systems, estuaries, deepwater coral assemblages, and (primarily in areas outside national jurisdiction) sea mounts could provide very basic information on areas with a high delivery of ecosystem services. Valuation has already been done under the auspices of BP/RAC -- if this information were mapped and then overlaid with the pressures mapping, at-risk areas of high value would emerge. These areas could then constitute focal areas for subsequent research, monitoring, and assessment – as well as becoming focal points for management under the Ecosystem Approach.

47. Such a geo-referenced analysis is but one way of looking at the problem of how to prioritize. And although some sort of streamlining or prioritization is needed, it is clear that other forms of monitoring and assessment that are more comprehensive (i.e. Basin-wide) should continue and should be used to supplement a targeted and applied monitoring and assessment program for undertaking the Ecosystem Approach.

48. At a minimum, it is recommended that MAP and Contracting Parties continue their efforts (or develop new efforts, where such monitoring is lacking) to track and map outbreaks of Harmful Algal Blooms (HABs), track non-indigenous species, especially known invasive species; monitor fisheries over-exploitation; estimate mortality of threatened species; determine location and scope of toxic pollutant hot-spots; and monitor water quality in bathing areas and areas where commercial fisheries or aquaculture industries operate. To the extent practicable, early warning systems should be put in place that allow researchers/managers to determine trends over time and in space, and where thresholds are known, indicate when these threats are causing ecosystems to approach tipping-points.

49. These sorts of analyses will allow MAP to determine what ecological objectives should be established for the EA process. Subsequently, MAP and its components can work with national authorities and experts to analyze existing management practices and then set operational objectives for an Ecosystem Approach to management (see below).

## **V. Recommended Next Steps**

50. Given that Step 3 of the roadmap is not yet complete, and that the First Technical Meeting of Experts scheduled for 8-9 April 2010 will allow MAP and national experts to take

stock of the assessment process to date and amend it if necessary, there are a few options that could be discussed on how to move forward.

51. One option is to undertake an evaluation of constraints to gathering information as recommended by MAP components. Data availability is certainly an issue, but so too may access to existing data be an issue, as well as availability of support for undertaking assessment tasks. The identification of constraints will allow for a more robust synthesis of assessment information, will point to priorities for future technical and financial assistance to Contracting Parties, and will influence the design of adequate yet efficient monitoring and evaluation programmes.

52. Spatially geo-referencing assessment information, as described above, is also an option for this step (Step 3) of the process. Mapping and GIS overlays would allow MAP to develop a prioritization methodology by consensus.

53. A major question that has emerged in the review of subregional assessments to date concerns how information on climate change fits into the assessment process. Clearly climate change is a driver of environmental change, and it acts in negative synergy with other impacts (such as eutrophication, spread of pathogens, changes to hydrology wrought by coastal constructions or activities in the watershed, etc.) – however it cannot and should not emerge as a priority for Ecosystem Approach to management, since there is virtually nothing that a management agency can do about climate impacts.

54. For the purposes of assessment, and for using assessment to guide the design of ecosystem-based management that is more effective and efficient than the sectoral management practiced to date, what is important is to use scientific information to distinguish climate impacts from other more directly anthropogenic impacts. In other words, climate-induced changes contribute to the “background noise” of change – when assessing what human activities have the most impact on environmental quality, monitoring of changes will have to view climate changes as a constant against which other changes can be compared.

55. This is not to say that climate change should not factor into the eventual management that follows an Ecosystem Approach. Coastal countries and more localized authorities will have to practice climate adaptation, and this will influence the form of marine and coastal management that takes place. Furthermore, as it is known that well-managed and intact communities of organisms are more resilient in the face of climate change-induced impacts, the urgency to adopt effective management practices is increased. But assessments that emphasize changes that are climate-driven do not directly highlight management measures that need to be taken, since these impacts for the most part cannot be mitigated.

56. Though it is obvious that much of the information contained in the assessment to date represents baseline, it will be necessary to undertake trends analysis as soon as practicably possible in the process. During the remainder of Step 3, attempt should be made to identify what kinds of ecosystem properties have been consistently monitored in order to derive information on trends.

57. Where trend information can be derived, MAP may choose to develop scenarios. Scenarios are useful in evaluating management options – and in fact are also useful in creating the political will to plan and finance needed management measures.

58. In addition to reviewing the above options, one recommendation for MAP as it completes Step 3 and plans next steps is to review the processes by which SPA/RAC and MEDPOL feed into the assessment processes, so that duplication of effort can be avoided in the future. Several of the draft national reports providing information for the subregional assessment called for harmonization in monitoring and information-gathering needed to

implement the continuing Water Framework Directive, the forthcoming activities under the Marine Strategy Framework Directive, and the ongoing Land-Based Sources of Pollution protocol of the Barcelona Convention.

59. Over the longer term, subsequent steps along the roadmap will need to be taken with the endorsement of the Contracting Parties. These steps entail identifying a range of Ecological Objectives and deciding which ones constitute priorities, as well as identifying indicators related to those objectives or targets (Step 4 of the ECAP roadmap). Afterwards, a Mediterranean-wide evaluation and mapping exercise showing existing management practices will need to be done, in order to inform the next final step -- entailing choosing Operational Objectives and indicators.