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MARINE AND COASTAL BIODIVERSITY: MARINE SPATIAL PLANNING AND VOLUNTARY GUIDELINES FOR THE CONSIDERATION OF BIODIVERSITY IN ENVIRONMENTAL IMPACT ASSESSMENTS AND STRATEGIC ENVIRONMENTAL ASSESSMENTS IN MARINE AND COASTAL AREAS

Note by the Executive Secretary

EXECUTIVE SUMMARY

Pursuant to the request made by the Conference of the Parties in paragraph 50 of decision X/29, the Executive Secretary has developed draft voluntary guidelines for the consideration of biodiversity in environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) in marine and coastal areas. The draft voluntary guidelines build upon the existing voluntary guidelines endorsed through decision VIII/28, using the guidance in annexes II, III and IV to the report of the Manila Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas beyond National Jurisdiction (UNEP/CBD/SBSTTA/14/INF/5). They take into account ecological differences, governance differences and other practical challenges related to the application of EIAs and SEAs in marine and coastal areas, particularly concerning the marine biodiversity in open-/deep-sea areas, including areas beyond national jurisdiction.

Further to another request in the same decision (paragraph 75), a synthesis document on the experience and use of marine spatial planning was prepared by the secretariat of the Scientific and Technical Advisory Panel of the Global Environment Facility (GEF-STAP) in collaboration with the Secretariat of the Convention on Biological Diversity and other relevant partners. Marine spatial planning can effectively complement and enhance existing efforts in the application of the ecosystem approach to the implementation of integrated marine and coastal management, the development and management of marine protected areas, and identification of ecologically or biologically significant marine areas. Application of marine spatial planning at practical level is, however, constrained by lack of necessary technical and managerial capacity as well as appropriate institutional frameworks and

* UNEP/CBD/SBSTTA/16/1.

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processes for integrated cross-sectoral management. Challenges are further compounded when the application is scaled-up to a regional and/or trans-boundary level.

DRAFT RECOMMENDATIONS

The Subsidiary Body on Scientific, Technical and Technological Advice may wish to recommend that the Conference of the Parties at its eleventh meeting adopts a decision along the following lines:

The Conference of the Parties,

Voluntary guidelines for the consideration of biodiversity in environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) in marine and coastal areas

Recalling decision VIII/28 by which the Conference of the Parties endorsed voluntary guidelines on biodiversity-inclusive environmental impact assessment and strategic environmental assessment,

Noting that marine areas, in particular open-/deep-sea areas, have important ecological differences from terrestrial and coastal areas, and that areas beyond national jurisdiction have governance differences,¹ and, consequently, specific guidance is warranted for these areas,

1. *Endorses* the voluntary guidelines for the consideration of biodiversity in environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) in marine and coastal areas, particularly concerning the marine biodiversity in open-/deep-sea areas, including the areas beyond national jurisdiction (UNEP/CBD/SBSTTA/16/7/Add.1);

2. *Requests* the Executive Secretary to make these guidelines available to Parties, other Governments and relevant organizations, in particular the United Nation Division of Ocean Affairs and the Law of the Sea, the International Maritime Organization, the Food and Agriculture Organization of the United Nations, International Seabed Authority, regional seas organizations, and regional fisheries management organizations;

3. *Encourages* Parties, and other Governments and relevant organizations to use the voluntary guidelines, as appropriate and in accordance with international law, including the United Nations Convention on the Law of the Sea, for the consideration of biodiversity in environmental impact assessments and strategic environmental assessments in marine and coastal areas, particularly concerning the marine biodiversity in open-/deep-sea areas, including the areas beyond national jurisdiction; and

4. *Requests* Parties, and *invites* other Governments and relevant organizations to report their progress in the application of these guidelines, including through the fifth and subsequent national reports, as appropriate;

Marine spatial planning

5. *Welcomes* the synthesis document on the experience and use of marine spatial planning, as contained in the document UNEP/CBD/SBSTTA/16/INF/18, and *takes note* of the key messages contained in the present document (UNEP/CBD/SBSTTA/16/7);

6. *Requests* the Executive Secretary, subject to availability of financial resources and human resources at the Secretariat, to collaborate with Parties, other Governments and organizations, such as the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific

¹ As further elaborated in UNEP/CBD/SBSTTA/16/INF/6.

and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), the Scientific and Technical Advisory Panel of the Global Environment Facility (GEF-STAP) and other relevant organizations:

(a) To develop a web-based database/information-sharing system linking existing information sources² on the web;

(b) To continue to compile the experience and use of marine spatial planning practices, particularly those in support of achieving Aichi Biodiversity Targets 6, 8, 10 and 11, and make the compiled information available to Parties, other Governments and organizations;

(c) To develop practical guidance and a toolkit for applying marine spatial planning, building upon existing guidelines³ through convening an expert workshop, in order to complement and further enhance the existing efforts of Parties and other Governments on the application of the ecosystem approach to the implementation of integrated marine and coastal management; design, establishment and management of marine protected areas; identification of ecologically or biologically significant areas, and other area-based management efforts;

(d) To organize training workshops in close linkage to existing capacity-building efforts on marine protected areas⁴ and ecologically or biologically significant marine areas,⁵ in order to increase the capacity of Parties, especially developing country Parties, in their application of marine spatial planning as a tool to enhance existing efforts on integrated marine and coastal area management, marine protected areas, ecologically and biologically significant marine areas (EBSAs), and other marine biodiversity conservation and sustainable-use practices.

² e. g. IOC/UNESCO webpage on marine spatial planning,
(http://www.unesco-ioc-marinesp.be/marine_spatial_planning_msp)

³ e.g. IOC/UNESCO guidelines on marine spatial planning.

⁴ e.g. UNDOALOS training manual on marine protected areas.

⁵ e.g. EBSA training manuals and modules prepared by Executive Secretary.

I. INTRODUCTION

1. Pursuant to paragraph 50 of decision X/29, the Executive Secretary facilitated the development of voluntary guidelines for the consideration of biodiversity in environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) in marine and coastal areas, building upon the existing voluntary guidelines endorsed through decision VIII/28, using the guidance in annexes II, III and IV to the report of the Manila Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas beyond National Jurisdiction (UNEP/CBD/SBSTTA/14/INF/5), recognizing that these guidelines would be most useful for activities that are currently unregulated with no process of assessing impacts.

2. Drafts of the voluntary guidelines, together with background information, were circulated to Parties, other Governments and organizations for technical peer-review through notification SCBD/STTM/JM/JLe/rg/78095 (2011-212), issued on 7 November 2011. The comments from the technical peer-review are reflected in the draft guidelines (UNEP/CBD/SBSTTA/7/Add.1) and the background document (UNEP/CBD/SBSTTA/16/INF/16) as prepared for the sixteenth meeting of the Subsidiary Body.

3. Pursuant to paragraph 75 of the same decision, the Executive Secretary collaborated with the Secretariat of GEF-STAP, UNEP, IOC/UNESCO, regional seas organizations/regional initiatives, and other international organizations. A draft report on marine spatial planning (UNEP/CBD/SBSTTA/16/INF/18) was prepared and submitted by the Secretariat of GEF-STAP, which compiled and synthesized available information on experiences and use of marine spatial planning, in particular on ecological, economic, social, cultural and other principles used to guide such planning and the use of area-based management tools. This report synthesized available information from third and fourth national reports, contributions from the regional seas organizations, and additional information and documents collected from research as well as the results of expert consultation meetings to review the draft report, jointly organized by the Secretariat of GEF-STAP and the Secretariat of the Convention on Biological Diversity as a side event/side meeting of the Third Intergovernmental Review (IGR-3) on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA) convened in Manila, from 23 to 24 January 2012.

4. Additional requests were made to the Executive Secretary in decision X/29 to work with organizations that conduct marine assessments to improve the consideration of biodiversity in these assessments (paragraph 69) and to organize an expert workshop on marine protected areas (paragraph 75). Due to limited human resources in the Secretariat, these activities have not yet been carried out.

5. This document supports the achievement of Targets 6, 8, 10 and 11 of the Strategic Plan for Biodiversity 2011-2020:

- **Target 6:** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
- **Target 8:** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
- **Target 10:** By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

- **Target 11:** By 2020, at least 17 per cent of terrestrial and inland water areas, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

II. VOLUNTARY GUIDELINES FOR THE CONSIDERATION OF BIODIVERSITY IN ENVIRONMENTAL IMPACT ASSESSMENTS AND STRATEGIC ENVIRONMENTAL ASSESSMENTS IN MARINE AND COASTAL AREAS

6. Document UNEP/CBD/SBSTTA/16/7/Add.1 contains:

- (a) Draft voluntary guidelines for the consideration of biodiversity in environmental impact assessments (EIAs) in marine and coastal areas (Part I);
- (b) Draft guidance on biodiversity-inclusive strategic environmental assessment in marine and coastal areas (Part II).

7. The guidelines are supported by background on the development of voluntary guidelines for the consideration of biodiversity in environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) in Marine and Coastal Areas (document UNEP/CBD/SBSTTA/16/INF/6). This background document describes and analyses the key guidance and observations set out in annexes II, III and IV to the report of the Manila Expert Workshop on Scientific and Technical Aspects Relevant to Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) in Marine Areas beyond National Jurisdiction (UNEP/CBD/SBSTTA/14/INF/5).

8. The voluntary guidelines were prepared drawing on the guidance from the Manila workshop as well as a review of selected global, regional and sectoral frameworks. Key elements were identified for inclusion in the draft guidelines. These elements were then incorporated into the existing CBD voluntary guidelines for the consideration of biodiversity in environmental impact assessment and guidance on biodiversity-inclusive strategic environmental assessment, as contained in decision VIII/28, with a view to improving the usefulness and relevance of the guidelines in marine areas, particularly concerning marine biodiversity in open-/deep-sea areas, including areas beyond national jurisdiction. In this process, the original texts of guidelines were retained except for any texts exclusively applicable to terrestrial ecosystems.

9. Specifically the following gaps were addressed in the CBD Voluntary Guidelines for EIA:

- (a) The acquisition of better knowledge on marine ecosystems beyond national jurisdiction so that assessment and decision-making are based on adequate information and sound science;
- (b) The compilation of experiences on how marine ecosystems, particularly in areas beyond national jurisdiction, have responded to past human impacts and natural forces, and how effective mitigation measures have been;
- (c) The development of global and, where appropriate, regional standards for acceptable perturbation;
- (d) The conduct of research to develop better understanding of the linkages between impacts and ecosystem processes in marine ecosystems;

(e) Consideration of possible governance structures for the implementation of EIA in marine areas beyond national jurisdiction, including clarifying what qualifies a group as a “stakeholder” and how stakeholders can participate in decision-making on an equitable basis, how entitlement to compensation is established, and whose “standards” are to be applied in an EIA;

(f) Fostering better collaboration among States and international organizations that have the technology, capacity and competency to do all the scientific, technical and governance tasks involved in EIA in marine areas beyond national jurisdiction; and

(g) Enhancing the capacity of States and international organizations to exercise legitimate monitoring, control and surveillance (MCS) of EIA conditions and to deter actions by groups choosing to enforce self-determined standards of conservation.

10. Elements which were lacking in the CBD draft guidance on SEAs, particularly as it related to SEAs in marine areas beyond national jurisdiction, were considered in preparing the draft guidance for SEAs in marine and coastal areas, building upon the results of Manila workshop.

11. It was noted at the Manila workshop that SEAs have distinct advantages that are particularly appropriate for planning the management of marine biodiversity beyond areas of national jurisdiction. They allow the activities of multiple users of ocean space to be coordinated through mechanisms such as integrated management plans for regions and subregions. Such plans can be designed to maintain species habitats and ecosystem structure in space and time over the full water column down to and including the seabed and subsoil. They can also take into account individual and cumulative impacts by users and natural environmental change.

12. It was also noted that the process of undertaking SEAs in marine areas beyond national jurisdiction may often be constrained by lack of information on:

- (a) The distribution and abundance of species and habitats;
- (b) The natural variation in species and habitat distribution;
- (c) The effects of human-induced events on species and habitats; and
- (d) Linkages between and among species and their physical environments.

13. SEAs can provide rationales for modifications to be made to integrated management plans over time, as more knowledge is acquired on the ecosystems and biodiversity of marine areas beyond national jurisdiction and the severity of impacts from human activities. SEAs may suggest the establishment of environmental networks to carry out further research into the marine environment and stimulate co-funding with industry, government, nongovernmental organizations and scientific institutions.

14. SEAs can be set up to address the large scale of ocean ecosystems, such as abyssal plain muds and the vast mountain ranges of mid-ocean ridges, and the connectivity of localized and separated ecosystems, such as hydrothermal vents, cold water coral reefs, and seamounts. They can take into account the topography of the seafloor, latitudinal change, depth zonation (e.g., the effects of temperature and pressure on the physiology of fauna) and food input from photosynthetic or chemosynthetic sources.

III. MARINE SPATIAL PLANNING

15. This section draws on the results of a synthesis document on the experience and use of marine spatial planning, as contained in the document (UNEP/CBD/SBSTTA/16/INF/18), which compiled available information on the scope of marine spatial planning (MSP) activities around the world, the lessons learned about the utility of spatial planning and management processes and tools, and criteria for success at various scales.

16. The synthesis document explores spatial management as a means to protect marine and coastal biodiversity while at the same time addressing human needs, concentrating especially on valuable ecosystem services in coasts, estuaries and deltas, nearshore environments, and open oceans. It reviews conventional planning processes, identifies innovative new tools, and discusses the potential MSP has -- as yet not fully realized, -- in aligning conservation and development interests while protecting vital ecosystems, the services they deliver, and the biodiversity they support.

17. Marine spatial planning exists in myriad forms, and is increasingly used to improve management and reduce conflicts, either between direct users of marine and coastal resources and space, or between institutions playing a role in managing activities impacting those resources and areas. The proliferation of MSP suggests that without it, coastal and marine management regimes are unable to meet rising challenges brought about by ever-increasing coastal and marine use, and clashes over access and rights to resources.

18. The wide variety of MSP approaches suggests that there is no single way to do MSP effectively. It should also be noted that biodiversity conservation is not normally a major goal of MSP, nor is it always a consequence of it. Nonetheless, there are elements of successful MSP that contribute to positive conservation and development outcomes which are elucidated in this study.

What is marine spatial planning?

19. Marine spatial planning (MSP) is an approach or framework to provide a means for improving decision-making as it relates to the use of marine resources and space. The ecosystem approach (EA) and ecosystem-based management (EBM) are principles that underlie most MSP in coastal and marine realms. MSP is forward-looking and informed by predefined goals, objectives and policies.

20. The common basis of all MSP is that it is spatial, in other words, it is place-based management, no matter at what scale and in what social context or biome it is being practiced. The spatial dimensions of how we understand ecosystems, the links across space that allow for integrated management, and the connections that humans have to marine and coastal ecosystems and their biodiversity are all critically important considerations in planning and implementing effective management.

21. Marine spatial planning is not only area-based, but it is also temporal; that is, utilizing forecasting, as well as seasonal management. This means that MSP is not only based on predicted responses to management (in the ecological and the social domains), but also the response and lag times involved.

22. MSP is not a substitute for integrated coastal zone management or integrated marine and coastal area management (IMCAM), but rather builds on these important approaches and the policies that support them. MSP also builds on other, more circumscribed spatial tools, such as area-based fisheries assessments, local or municipal land-use plans, area-based biodiversity measures such as identification of ecologically or biologically significant areas (EBSAs), and the siting of marine protected areas (MPAs) and MPA networks. The management that flows from MSP, broadly defined, thus includes IMCAM, MPA design and implementation, and the spatial allocation of maritime uses/maritime sectors (e.g. shipping lanes, oil & gas leases, fisheries closures, scientific research sites, etc.).

23. Positive biodiversity outcomes occur through MSP when interconnected ecosystems are treated systematically and all impacting uses/pressures are addressed, as warranted by the problems that management must address.

24. MSP is not an end in itself, and it is not a policy - rather it is a framework that focuses on the three dimensional, often dynamic space required to deliver the goods and services society needs or desires from marine ecosystems and to plan how this space will be used. At its most effective, MSP considers this in terms of both natural and political boundaries, reconciling conflicting uses of space in a fair and equitable manner, identifying and promoting synergistic uses, recognizing the intrinsic value of biodiversity, and working within the prevailing political, legal, administrative and cultural regime.

Overview of theory and practice of implementing MSP

25. MSP, and the spatial management regimes that flow from it, such as coastal management and ocean zoning, already occurs at various scales throughout the world, from small locally-managed marine areas and coastal planning undertaken by municipalities, through mesoscale planning and management at the state and provincial level, to planning of ocean use throughout EEZs, from ridges to reefs (coastal areas through watersheds and out to sea, sometimes across national boundaries), and within regional seas and large marine ecosystems (LMEs). Size of MSP initiatives, methodologies for engaging stakeholders and doing planning, and tools vary, as do stated goals and objectives of MSP.

26. There is little doubt that it is the prevailing political, legal, administrative and cultural regimes that dictate if and how marine spatial planning will be implemented. In any discussion on marine spatial planning, these differences must be recognized and accommodated and for that reason there is no one-size-fits-all marine spatial planning model. While there is no single model for MSP, there is a generic planning process that involves establishing a vision, setting goals, and determining measurable objectives, from which allocation of space and resources within that space can flow, as well as the area-specific management needed to sustain the ecosystems that stakeholders collectively value. This process is described in subsequent sections of this note.

Visioning, setting goals, and determining objectives

27. Goal-setting is a necessary first step in all MSP. A survey of MSP initiatives shows that the visions for an MSP-guided world include vastly reduced user conflict, improved and more efficient management of coasts and seas, healthy ecosystems and intact biodiversity, and maintenance of the ecosystem services that oceans, coasts, and estuaries provide for human societies.

28. Strategic goals, defining what needs to be done to achieve the vision, are somewhat more general than objectives in MSP processes. The most effective plans are those developed in response to very clearly stated, very specific objectives. Measurable success occurs when objectives have metrics associated with them, with agreed upon indicators and targets. At the same time, systems to monitor social-ecological impacts of MSP must be in place – these can be scientific and/or participatory depending on the context. Information from monitoring should inform management adaptation. But, as goals can change, just as ecological conditions and human needs change, MSP should be a cyclical process in which there is a periodic assessment of whether goals and objectives continue to be relevant.

Available tools and innovative methodologies

29. Innovative concepts, technologies, and processes that inform or guide MSP significantly increase its potential to improve on coastal and marine management. These new concepts include planning done simultaneously or in a systematic and phased way across a hierarchy of scales; and three dimensional planning of ocean space that includes benthic and water column considerations.

30. Mapping is central to MSP. Maps of environmental characteristics, species and habitat distributions, ecosystem goods, services and vulnerabilities, the ways humans value marine and coastal space, human activities or pressures and their cumulative impact are data demanding and are often not available. In many cases this is the main technical and scientific barrier to MSP.

31. Successful MSP involves not only developing plans, but examining trade-offs and developing scenarios that can help raise awareness about the consequences of decisions regarding access to and use of ocean and coastal space and resources. Optimization methodologies and decision-support tools such as MARXAN⁶ can help evaluate options, but the guiding principles must be clearly stated and agreed. In most cases of actual MSP around the world, the options are first derived by expert opinion, then assessed by tools that are supported by available data. The consequences of implementing a spatial management plan (both negative and positive - e.g. displacing fishers, adding costs for industrial users, reducing user conflicts) should be anticipated and evaluated, either through trade-off analysis, scenario development, or by simple stakeholder discussions on possible outcomes.

The strategic role of MSP in management of transboundary resources

32. MSP can be done in transboundary space and areas beyond national jurisdiction (ABNJ) in theory, but systematic planning in such areas is rare. With few exceptions, MSP is still a localized or national approach, tailored to the specific needs and conditions of a particular society or state.

33. MSP has great potential to improve management of shared resources both at a local and ecosystem scale. Establishing and clarifying institutional roles, responsibilities and connectivity is crucial to success. How difficult this is depends largely on administrative/jurisdictional issues. If the ecosystem components are within a single jurisdiction or spans the boundary between two separate administrations within a state, between two states or between state and ABNJ different governance issues come into play. MSP governance with a single administration is probably the simplest situation and requires institutional connectivity between authorities regulating fisheries, conservation, shipping, coastal and watershed land use, energy, etc. The complexity increases moving from national, through transnational to transboundary with areas beyond national jurisdiction.

34. Existing multilateral institutions such as those that support Regional Seas and Large Marine Ecosystems are the obvious transnational platform for the implementation of transboundary MSP. An example of this includes the Baltic Sea, a semi-enclosed sea area providing vital ecosystem goods and services to Baltic Sea States but vulnerable to environmental pressures. The recognition of the importance between land and marine spatial planning has had a significant beneficial effect on MSP in the Baltic. In addition, MSP can take transboundary diagnostic analyses and strategic action plans (SAP) that flow from those analyses into the management realm.

35. The groundwork for MSP in transboundary areas and international waters exists in many regions. For example, scientific descriptions of EBSAs are under way, using internationally accepted criteria such as the scientific criteria (decision IX/20, annex I) prepared under the Convention on Biological Diversity, through a series of regional workshops being convened by the Executive Secretary. However, the participation of international organizations such as IMO, regional fisheries management organizations (RFMOs), and the International Seabed Authority and the International Maritime Organization is necessary for implementing MSP in areas beyond national jurisdiction.

36. It is clear from regional MSP initiatives that it is challenging to identify the correct scale at which ecological goals should be achieved so as not to overburden institutional capacity. It is best to plan incrementally/adaptively and to invest in finding common interests, goals and vision when working across national boundaries, as in the creation of learning networks. Perceived barriers to transboundary

⁶ See <http://www.uq.edu.au/marxan>, <http://www.pacmara.org/tikiwiki/tiki-index.php?page=Marxan+Resources+and+Training>.

MSP include protectionism regarding national jurisdictions, national and transboundary institutional silos, cultural traditions, information exchange restrictions, and lack of information about valued resources/services that might drive transboundary MSP.

Barriers to MSP and means to overcome them

37. Multiple constraints and barriers to comprehensive or large scale MSP exist, especially in multi-jurisdictional arenas. These can be categorized in four ways: institutional barriers, environmental or ecological considerations, social constraints, and economic limitations. This note discusses each of these sets of barriers and suggests solutions to overcoming them.

Institutional barriers

38. *Fear of loss of control of the decision-making process.* This stems from a perception that planning is neutral – a black box into which data and information goes, and leads to unpredictable outcomes (uncertainty around the decision/recommendation that might come out). National institutions with regulatory responsibilities for particular sectors seem to be more comfortable working independently and may prefer to make decisions on the basis of applications received (developer led) rather than being led by a plan developed by consensus.

39. *Lack of understanding of, and widespread institutional support for, MSP.* MSP is a new term, and one that has not been carefully defined or explained. Communication about how MSP improves quality and efficiency of decision-making by ensuring all available information is collated and made available in the process has been inadequate.

40. *Inadequate institutional engagement.* Regional Seas, LME and international organizations (IMO, ISA, fisheries organizations) are the correct institutional platforms to progress transnational and transboundary ecosystem based MSP. These are also being successfully used to exchange experiences and scientific information and improve capacity for MSP. There is significant potential for their use as a platform for early transnational consultation on MSP. TDA and SAP are a useful start.

41. *Planning that is forced on institutions, rather than developed by them.* The need for MSP should arise from the stakeholders (including governments). Thus barrier arises when the approach is imposed or forced. Tendency to offer MSP or other management framework or tool before there is a strong felt need or commitment may also lead to a challenge in the implementation. There is a tendency to rush the process and respond to financial opportunities, rather than create institutional constituency or commitments prior to formal adoption of programmes.

42. *Lack of supportive legal frameworks.* The absence of consistent legal frameworks, or legal consistency and harmony at local, state and national levels, is problematic and can create redundancies, confusion and contradictory policies. However, a supportive legal framework is perhaps not an essential or realistic initial condition, but can be created through practice.

43. *Inadequate capacity.* Long-term investment in development of human and institutional capacity for essential MSP related activities is a key to success. This includes relevant information development/storage/analysis, planning, implementation and evaluation. Capacity development includes fostering leadership of public sector MSP champions, including those in resource user sectors (fishers, tourism, etc.). In cases where MSP is built on a solid foundation of integrated coastal area management, it may be challenging to move offshore with comprehensive MSP due to financial constraints, institutional capacities, enforcement challenges, and – perhaps most importantly – lack of legal frameworks that may reflect priorities that are more coastal than marine. Investment in enforcement, while important, must be balanced with investment in capacity development and participatory planning processes.

Environmental barriers

44. *The perception that MSP is either not sufficiently conservation-oriented, or is too nature-centric.* MSP is generally concerned with conflict resolution and the allocation of space to different users and not conservation or protection. However, MSP does catalyse the identification and allocation of areas for conservation and it can facilitate general environmental improvement by compiling available information into maps of ecosystems goods and services and vulnerabilities and using these in decision making.

45. *Challenges in coming to terms with multiple, cumulative impacts.* Forward planning can identify gaps in policy and help to avoid slow incremental damage, but only if all critical impacts are monitored and the management response is a solution tailored to the management issues and the goals and objectives laid out for MSP to address.

Social barriers

46. *A sense that MSP is the next big thing, and that planners and management agencies need to drop what they are doing to embrace this new approach.* MSP is new and it unclear how it will complement, rather than replace, community-based approaches to coastal and marine resource management.

47. *Difficulty in reconciling top-down, large-scale planning with bottom-up and more localized management.* MSP must recognize the importance of existing bottom up approaches – it is not meant to replace these initiatives but coordinate and build on them. The process of MSP is iterative and encourages the bottom up initiatives as well as the top governance improvements. MSP can in fact identify synergies and manage uses to promote multiple use of space.

Economic barriers

48. *Established sectors with perceived free access such as fisheries, oil and gas, pipes and cables, shipping and navigation may see themselves losing out in the MSP process.* The demand for marine space from new uses such as renewable, sand and gravel extraction and conservation will continue and probably increase. There is a distinct disadvantage by not being involved in the forward planning of the spatial allocation for these activities. Being involved and seeking mitigation, compromises and synergies is essential.

49. *Lack of attention to costs and benefits.* Tangible benefits (even if deemed greater than costs) are not always made clear to institutions and leaders. Change can be costly and will alter present benefit streams from the *status quo*. Prospective benefits should be identified and assessed realistically, while at the same time, costs are considered. Incentives for inter-institutional collaboration (funds, cost reductions, etc) can facilitate the launching of an MSP process and its eventual success. Capacity development is a slow and laborious, but essential, task. Without capacity for managing complex processes, MSP is likely to fail. Sustaining capacity is difficult due to the generally short funding cycles.

50. *Resistance to MSP should be anticipated.* This resistance can come from powerful, vested interests (military, political leaders, resource user groups, etc) or disinterested institutions with authority (lack of perceived need, low priority in face of pressing issues). Jurisdictional overlaps and ‘turf battles’ should be identified and overcome through the MSP process. It is worth stressing again that MSP is not a panacea and will not overcome such resistance in all cases, as is evident from failed or inadequate MSP initiatives outlined in the report.

51. *Where conflicts arise, they should be mediated rather than suppressed.* Marine Spatial Planning is generally considered neutral in striving to deliver and even promote development that is socially, economically and environmentally sustainable. However, in reality MSP (as well as IMCAM, marine protected areas and other more focused spatial management tools) can depart from being neutral. In these cases MSP becomes a representation of a particular value system, which may be considered valid and

may represent the majority interest, but which will meet resistance by others who hold other values. That conflict must be mediated.

52. *Perceptions and language matter.* As an example, zoning as an outcome of MSP is widely accepted in Europe, but considered a political non-starter in other places. There are cases in which one or more user groups have resisted MSP, but there is also evidence that perceptions can be changed by open discussion of what MSP is and is not. In some cases, users have not only supported but have driven MSP processes. Thus, misperceptions and language barriers can be overcome by mediated discussion, and a planning process which is as participatory, open, and equitable as possible.

IV. CONCLUSIONS

53. MSP is a framework supporting ecosystem-based management, in that it recognizes the connections between land, freshwater, and marine ecosystems, and addresses human uses and impacts of importance in all these systems. As such, comprehensive MSP has the potential to greatly improve management, reduce the loss of ecosystem services, help address or avoid conflict, and create economies of scale and efficiencies for enforcement and management. Planners that have strived for equitable sharing of benefits have witnessed more and longer-lasting support for MSP.

54. One size doesn't fit all in MSP; in order for MSP to realize its full potential, capacity needs to be built for context-specific planning and governance. Multi-scale processes are needed to bring together top-down and bottom-up initiatives into a systematic approach. Engaging leaders, creating common understanding and establishing working groups leads to increased buy-in, co-financing, and improved management.

55. Comprehensive MSP initiatives are relatively new and thus largely untested. In those that are underway there appears to be greater emphasis on planning than on post-plan implementation. This is in contrast to smaller scale MSP processes, such as those that serve as the foundation for IMCAM or MPA design. Robust MSP processes take into consideration the feasibility of implementation, which in turn affects the development of marine spatial plans.

56. A supportive legal framework to support MSP, and a governance system that allows participatory planning and adaptive management in which strategic goals and objectives are periodically revisited, provide essential elements for MSP success. In preparing for MSP, there should be clear definition of issues to be addressed by MSP, and the possible risks and costs in engaging in the process. Development of participatory planning processes is essential to developing MSP legitimacy and buy-in.

57. Successful MSP requires not only a legislative framework, but good governance (in this case, good means appropriate to the social and political context and capacity; governance refers to all forms of governance, not just that taken on by governments).

58. Recognizing and acting upon the need for sustainable financial streams to support MSP is important. It may be preferable to have modest, but consistent amounts of support, such as through streams of revenue from Payments for Ecosystem Services or user fees, since large grants can create dependencies.

59. Intergovernmental organizations, and national and local governments should support sufficient capacity-building and public awareness activities targeting relevant audiences on the utility of MSP as one of the key management approaches for coastal zone and maritime space at the international, national and local levels across a range of themes, including:

(a) Strengthening governance, institutional and legal frameworks conducive for MSP mainstreaming into existing management frameworks;

(b) Establishing or enhancing monitoring, data analysis and scenario modelling of ecosystem goods and services as a basis for MSP development;

(c) Supporting impact assessments and embedding effectiveness monitoring into existing MSP efforts; and

(d) Nurturing and facilitating collaboration across multilateral organizations, government, private and public sectors, educational and scientific institutions, indigenous and local communities in the development and implementation of MSP.
