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MARINE AND COASTAL BIOLOGICAL DIVERSITY

Draft decision submitted by the Chair of Working Group I

Review of the programme of work on marine and coastal biodiversity

The Conference of the Parties

1. *Takes note* that progress has been made in the implementation of the programme of work at the national, regional and global levels and that facilitation of implementation has been undertaken by the Secretariat;
2. *Recognizes* that the programme of work on marine and coastal biological diversity must incorporate a diverse range of tools and approaches and address the three objectives of the Convention, and notes the need to ensure integration between the programmes of work on protected areas and on marine and coastal biological diversity, and in particular the programme element on MCPAs, to ensure effective coordination in their implementation;
3. *Agrees* that the programme of work on marine and coastal biological diversity should be applied and interpreted consistently with national law, and where applicable, international law, including the United Nations Convention on the Law of the Sea;
4. *Decides* that the programme elements of the programme of work still correspond to global priorities, which are not fully implemented, and therefore *extends* the time period of the programme of work by an additional six years, taking into account the multi-year programme of work of the Conference of the Parties up to 2010;
5. *Notes* that the programme of work has been refined to take into account recent developments and new priorities and *endorses* for the guidance of Parties and any other relevant organizations or bodies the elaborated programme of work as presented in annex I to the present decision and its appendices 1-5, noting that Parties will implement those suggested activities that are consistent with their national priorities.;

/...

6. *Welcomes* the entry into force of the Agreement on the Conservation of Albatrosses and Petrels, and *notes* the adoption of the International Convention for the control and management of ships' ballast water and sediments under IMO and *encourages* Parties to the CBD and other governments to consider ratifying these conventions.

7. *Agrees* that further technical advice is required to support the implementation of the programme elements related to sustainable use and to support the work of developing countries in achieving sustainable use of their marine and coastal areas, including in relation to tourism and fishing, and *requests* the Executive Secretary to work with the Food and Agriculture Organization of the United Nations (FAO) and other relevant organizations to develop that advice and support;

8. *Taking into account* the AHTEG report on biodiversity and climate change and the recommendations of SBSTTA at its ninth meeting and the decision of the Conference of the Parties at its seventh meeting on biodiversity and climate change, *agrees* that the programme of work on marine and coastal biodiversity should address issues related to biodiversity and climate change, and further encourages Parties to make use of it as relevant source of useful information and take measures to manage coastal and marine ecosystems, including mangroves, seagrass beds and coral reefs so as to maintain their resilience to extreme climatic events;

9. Recognizing the particular significance of this programme of work to small island developing States, *invites* the Global Environment Facility, other funding institutions, and development agencies to provide financial support for the implementation of the elaborated programme of work on marine and coastal biodiversity; and its annexes and appendices

Marine and coastal protected areas

10. *Welcomes* the report of the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas (UNEP/CBD/SBSTTA/8/INF/7), ^{1/} *expresses its gratitude* to the Governments of New Zealand and the United States of America, and the World Conservation Union (IUCN), for their financial, organizational and technical support for this work, and *expresses its gratitude* to the Chair and members of the Ad Hoc Technical Expert Group for their work;

11. *Notes* that marine and coastal biodiversity is under rapidly increasing and locally acute human pressure, such that globally, regionally and nationally marine and coastal biodiversity is declining or being lost. One of the reasons for this level of threat is the very low level of development of marine and coastal protected areas;

12. *Notes* that marine and coastal protected areas have been proven to contribute to:

- (a) Protecting biodiversity;
- (b) Sustainable use of components of biodiversity; and
- (c) Managing conflict, enhancing economic well-being and improving the quality of life;

^{1/} The Ad Hoc Technical Expert Group adopted the following definition of "marine and coastal protected area", which incorporates all of the IUCN categories of protected areas:

" 'Marine and coastal protected area' means any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings.

"Areas within the marine environment include permanent shallow marine waters; sea bays; straits; lagoons; estuaries; subtidal aquatic beds (kelp beds, seagrass beds; tropical marine meadows); coral reefs; intertidal muds; sand or salt flats and marshes; deep-water coral reefs; deep-water vents; and open ocean habitats."

13. *Notes* that there are increasing numbers of marine and coastal protected areas, but in many cases they have not been effective because of problems related to their management (including as a result of lack of resources), size and habitat coverage;

14. *Notes also* that according to available data, marine and coastal ecosystems are severely underrepresented as protected areas, and these protected areas probably protect a very small proportion of marine and coastal environments globally and consequently make a relatively small contribution to sustainable management of marine and coastal biodiversity;

15. *Takes note with appreciation* of the joint note of the International Coral Reef Initiative and the Convention on Biological Diversity (UNEP/CBD/COP/7/INF/26) on the ICRI resolution on small island States (see annex 1) and on cold water coral reefs (see annex 2) of the document. This is proposed pursuant to decision VI/3 of the Convention on Biological Diversity;

Goals of marine and coastal protected areas

16. *Agrees* that marine and coastal protected areas are one of the essential tools and approaches in the conservation and sustainable use of marine and coastal biodiversity

17. *Notes* that there is an international body of evidence demonstrating that those marine and coastal protected areas where extractive uses are excluded have benefits for fisheries in surrounding areas, and in many cases for communities, and for sustainable tourism and other economic activities within and outside the marine and coastal protected area;

18. *Agrees* that the goal for work under the Convention relating to marine and coastal protected areas should be:

The establishment and maintenance of marine and coastal protected areas that are effectively managed, ecologically based and contribute to a global network² of marine and coastal protected areas, building upon national and regional systems, including a range of levels of protection, where human activities are managed, particularly through national legislation, regional programmes and policies, traditional and cultural practices and international agreements, to maintain the structure and functioning of the full range of marine and coastal ecosystems, in order to provide benefits to both present and future generations.

19. *Notes* that the World Summit on Sustainable Development Plan of Implementation promotes the conservation and management of the oceans, and agreed to develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks, by 2012, and time/area closures for the protection of nursery grounds and periods, proper coastal land use; and watershed planning, and the integration of marine and coastal areas management into key sectors; and *agrees* to adopt this approach for the work of the Convention on marine and coastal protected areas, and to develop a strategy to meet this goal, including indicators of progress;

20. Aware that MCPAs should be part of a wider marine and coastal management framework, urges Parties and other governments, as appropriate, to make efforts to adopt, as a matter of

^{2/} A global network provides for the connections between Parties, with the collaboration of others, for the exchange of ideas and experiences, scientific and technical cooperation, capacity building and cooperative action that mutually support national and regional systems of protected areas which collectively contribute to the achievement of the programme of work. This network has no authority or mandate over national or regional systems.

high priority (while taking into account the resource limitations of small island developing States), such a framework, taking into account Appendix 3 of Annex I.

National framework of marine and coastal protected areas

21. *Agrees* that an effective marine and coastal biodiversity management framework as set out in appendix 3 to annex I to the present decision would comprise sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment, including integrated networks of marine and coastal protected areas consisting of:

(a) Marine and coastal protected areas, where threats are managed for the purpose of biodiversity conservation and/or sustainable use and where extractive uses may be allowed; and

(b) Representative marine and coastal protected areas where extractive uses are excluded, and other significant human pressures are removed or minimized, to enable the integrity, structure and functioning of ecosystems to be maintained or recovered;

22. *Agrees* that the balance between category (a) and (b) MCPAs in paragraph 21 above would be selected by the country concerned.

23. *Notes* that the Ad Hoc Technical Expert Group on MCPAs advised that certain objectives of MCPAs, such as scientific reference areas can only be accomplished through the establishment of category (b) MCPAs, and encourages Parties to take this advice into account when determining an appropriate balance between categories (a) and (b);

24. *Notes* that there are some benefits of the framework that can be provided with any degree of certainty only by including highly protected areas, and that to achieve the full benefits a network needs to include representative and distinctive areas and contain a sufficient area of the coastal and marine environment to be effective and ecologically viable;

25. *Agrees* that key factors for achieving effective management of marine and coastal protected areas include effective governance, clear national legal or customary frameworks to prevent damaging activities, effective compliance and enforcement, ability to control external activities that affect the marine and coastal protected area, strategic planning, capacity-building and having a sustainable financing for management;

26. *Urges* Parties to urgently address, through appropriate integrated marine and coastal management approaches, all threats, including those arising from the land (e.g. water quality, sedimentation) and shipping/transport, in order to maximize the effectiveness of marine and coastal protected areas and networks in achieving their marine and coastal biodiversity objectives taking into account possible effects of climate change such as rising sea levels;

27. *Agrees* that the full participation of indigenous and local communities and relevant stakeholders is important for achieving the global goal, and for the establishment and maintenance of individual marine and coastal protected areas and national and regional networks in line with decision VII/-- on protected areas;

28. *Notes* the technical advice provided by the Ad Hoc Technical Expert Group, contained in annex II to the present decision and in its report, relating to marine and coastal protected areas within national jurisdiction, and *urges* Parties and Governments to utilize that advice in their work to establish marine and coastal protected areas networks;

Marine protected areas in areas beyond national jurisdiction

29. *Notes* that there are increasing risks to biodiversity in marine areas beyond national jurisdiction and that marine and coastal protected areas are extremely deficient in purpose, numbers and coverage in these areas;

30. *Agrees* that there is an urgent need for international cooperation and action to improve conservation and sustainable use of biodiversity in marine areas beyond the limits of national jurisdiction, including the establishment of further marine protected areas consistent with international law, and based on scientific information, including areas such as seamounts, hydrothermal vents, cold-water corals and other vulnerable ecosystems;

31. *Recognizes* that the law of the sea provides a legal framework for regulating activities in marine areas beyond national jurisdiction and *requests* the Executive Secretary to urgently collaborate with the Secretary-General of the UN and relevant international and regional bodies in accordance with their mandates and their rules of procedure on the report called for in UNGA resolution 58/240 paragraph 52 and to support any work of UNGA in identifying appropriate mechanisms for the future establishment and effective management of marine protected areas beyond national jurisdiction.

Assessment, monitoring and research priorities

32. *Notes* that the research priorities and pilot projects set out in appendix 4 to annex I to the present decision would provide important assistance to national and, where appropriate, regional efforts to establish and maintain marine and coastal protected areas and national and regional networks, and that research programmes on the conservation of marine and coastal biodiversity resources are needed while setting up national biodiversity research priorities;

33. *Agrees* to incorporate the research priorities and pilot projects contained in appendix 4 to annex I to the present decision into the programme of work in marine and coastal biodiversity, and *requests* the Executive Secretary to identify partners to adopt the research priorities and undertake these projects as a matter of urgency;

34. *Notes* that it is necessary to develop research programmes on the conservation of marine biological diversity resources beyond marine and coastal protected areas, with a view to establishing protected-area networks;

International support for the creation of networks of marine and coastal protected areas

35. *Urges* Parties, other Governments and relevant organizations to provide active financial, technical and other support for the establishment of a global system of marine and coastal protected area networks and the implementation within it of relevant provisions contained in this decision, including identification and removal of barriers to the creation of marine and coastal protected areas, and removal of perverse incentives for unsustainable activities in the marine and coastal environment, pursuant to decision VI/15, on incentive measures, within the framework of relevant marine-related international law;

36. *Decides* to examine the need for support through the financial mechanism to developing country Parties, in particular the least developed and small island developing States among them, for country-driven activities aimed at enhancing capabilities for activities relating to the establishment and maintenance of marine and coastal protected areas and networks of marine and coastal protected areas and in particular to assist Parties to develop systems to make their marine and coastal protection area networks self-sustaining in the medium to long term;

37. *Notes* that further technical advice related to network design and in particular ecological coherence of networks may be needed to assist Parties in implementation work, and request the Executive Secretary, in consultation with the Bureau of Subsidiary Body on Scientific, Technical and Technological Advice, to identify appropriate mechanisms for developing this advice.

Monitoring progress toward the global goal

38. *Invites* the UNEP-WCMC (World Conservation Monitoring Centre of the United Nations Environment Programme), in collaboration with relevant organizations and authorities, to provide and maintain up-to-date information on marine and coastal protected areas, in line with the proposed categories for inventory and contextual information set out in annex III below, to provide a basis for the assessment work under the Convention;

39. *Requests* the Executive Secretary to provide an assessment of progress toward the global goal, as part of reporting on the programme of work on marine and coastal biological diversity;

Mariculture

40. *Welcomes* the summary report of the Ad Hoc Technical Expert Group on Mariculture (UNEP/CBD/SBSTTA/8/9/Add.2) and the full report of the Group as presented as an information document for the eighth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (UNEP/CBD/SBSTTA/8/INF/6);

41. *Expresses its appreciation* to the Food and Agriculture Organization of the United Nations (FAO) for the technical support and meeting facilities provided for the meeting of the ad hoc technical expert group on mariculture;

42. *Takes note* of the negative biodiversity effects of mariculture, as described in section II of the summary report of the Ad Hoc Technical Expert Group on Mariculture, and of the methods and techniques available for their mitigation, as described in section III of that summary report;

43. *Notes also* that the AHTEG in section IV of the summary report identified some positive effects for biodiversity of some forms of mariculture with native species ;;

44. *Urges* Parties and other Governments to adopt the use of relevant methods and techniques for avoiding the adverse effects of mariculture on marine and coastal biological diversity, and incorporate them into their national biodiversity strategies and action plans;

45. *Recognizes* the complexity of mariculture activities, the highly variable circumstances of different geographical areas, mariculture practices and cultured species, as well as social, cultural and economic conditions, which will influence mitigation options, and, accordingly, taking into account the special needs of and the difficulties faced by stakeholders in developing countries, *recommends* that Parties and other Governments adopt the use of the following specific methods, techniques or practices for avoiding the adverse biodiversity-related effects of mariculture:

(a) The application of environmental impact assessments, or similar assessment and monitoring procedures, for mariculture developments, with due consideration paid to the scale and nature of the operation, as well as carrying capacities of the environment, taking into account the guidelines on the integration of biodiversity considerations in environmental impact assessment legislation and/or processes and in strategic impact assessment, endorsed by the Conference of the Parties in its decision VI/7 A, as well as the recommendations endorsed in decision VI/10, annex II, on the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by

indigenous and local communities. There is a need to address the likely immediate, intermediate and long-term impacts on all levels of biodiversity;

(b) Development of effective site-selection methods, in the framework of integrated marine and coastal area management, taking into account the special needs and difficulties encountered by stakeholders in developing countries;

(c) Development of effective methods for effluent and waste control;

(d) Development of appropriate genetic resource management plans at the hatchery level and in the breeding areas, including cryo-preservation techniques, aimed at biodiversity conservation;

(e) Development of controlled low-cost hatchery and genetically sound reproduction methods, made available for widespread use, in order to avoid seed collection from nature, where appropriate. In cases where seed collection from nature cannot be avoided, environmentally sound practices for spat collecting operations should be employed;

(f) Use of selective fishing gear in order to avoid or minimize by-catch in cases where seed are collected from nature;

(g) Use of native species and subspecies in mariculture,;

(h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polyploids, including, in the framework of the Cartagena Protocol on Biosafety, living modified organisms (LMOs);

(i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity;

(j) Minimizing the use of antibiotics through better husbandry techniques;

(k) Ensure that fish stocks used for fish meal and fish oil are managed in such a way as to be sustainable and to maintain the trophic web;

(l) Use selective methods in industrial fisheries to avoid or minimize by-catch.

(m) Considering traditional knowledge, where applicable as a source to develop sustainable mariculture techniques;

46. *Urges* Parties and other Governments to adopt relevant best management practices and legal and institutional arrangements for sustainable mariculture, taking into account the special needs and difficulties encountered by stakeholders in developing countries, in particular through implementing Article 9 of Code of Conduct on Responsible Fisheries, as well as other provisions in the Code dealing with aquaculture, recognizing that it provides necessary guidance to develop legislative and policy frameworks at the national, regional and international levels;

47. *Requests* the Executive Secretary to undertake a comprehensive review of relevant documents on best practices relevant to mariculture, and to disseminate the results, as well as relevant case studies, through the clearing-house mechanism prior to the tenth meeting of the Subsidiary Body;

48. *Agrees* to incorporate the research and monitoring priorities identified by the Ad Hoc Technical Expert Group on Mariculture as outlined in appendix 5 to annex I to the present decision into the programme of work on marine and coastal biological diversity;

49. *Recommends* that the Executive Secretary, in collaboration with the Food and Agriculture Organization of the United Nations and other relevant organizations, explore ways and means for implementing these research and monitoring priorities, including an evaluation of means through which mariculture can be used to restore or maintain biodiversity;

50. *Recommends* that the Executive Secretary, in collaboration with the Food and Agriculture Organization of the United Nations and other relevant organizations, harmonize the use of terms in regards to mariculture by further developing and adopting the glossary of the Food and Agriculture Organization of the United Nations;

51. *Expresses its support* for regional and international collaboration to address transboundary impacts of mariculture on biodiversity, such as spread of disease and invasive alien species;

52. *Decides* to promote technical exchange and training programmes, and transfer of tools and technology;

53. *Decides* to examine the need for support through the financial mechanism to developing country Parties for country-driven activities aimed at enhancing capabilities to mitigate the adverse effects of mariculture on biological diversity;

Conservation and sustainable use of deep seabed genetic resources beyond national jurisdiction: arising from the study of the relationship between the Convention on Biological Diversity and the United Nations Convention on the Law of the Sea

54. *Requests* the Executive Secretary, in consultation with Parties and other Governments and the International Seabed Authority, and in collaboration with international organizations, such as the United Nations Division for Ocean Affairs and the Law of the Sea, the United Nations Environment Programme, and the Intergovernmental Oceanographic Commission of the United Nations Educational, Cultural and Scientific Organization, if appropriate, to compile information on the methods for the identification, assessment and monitoring of genetic resources of the seabed and ocean floor and subsoil thereof, in areas beyond the limits of national jurisdiction; compile and synthesize information on their status and trends including identification of threats to such genetic resources and the technical options for their protection; and report on the progress made to the SBSTTA

55. Welcomes the United Nations General Assembly's resolution 58/240 and *invites* the Parties to raise their concerns regarding the issue of conservation and sustainable use of genetic resources of the deep seabed beyond limits of national jurisdiction at the next meeting of the General Assembly and further *invites* the General Assembly to further coordinate work relating to conservation and sustainable use of genetic resources of the deep seabed beyond the limits of national jurisdiction.

56. *Invites* Parties and other States to identify activities and processes under their jurisdiction or control which may have significant adverse impact on deep seabed ecosystems and species beyond the limits of national jurisdiction, in order to address Article 3 of the Convention.

Conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction

57. *Recalling* paragraph 32(a) and (c) of the Johannesburg Plan of Implementation from the World Summit on Sustainable Development, that calls on the international community to "maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including in areas within and beyond national jurisdiction";

58. *Notes* that United Nations General Assembly in its resolution 58/240 of 23 December 2003, paragraph 51, has reiterated “its call for urgent consideration of ways to integrate and improve, on a scientific basis, the management of risks to the marine biodiversity of seamounts, cold water coral reefs and certain other underwater features”;

59. *Recalls* paragraph 52 of the above-mentioned UNGA Resolution that “invites the relevant global and regional bodies, in accordance with their mandate, to investigate urgently how to better address, on a scientific basis, including the application of precaution, the threats and risks to vulnerable and threatened marine ecosystems and biodiversity beyond national jurisdiction; how existing treaties and other relevant instruments can be used in this process consistent with international law, in particular with the Convention, and with the principles of an integrated ecosystem-based approach to management, including the identification of marine ecosystem types that warrant priority attention and to explore a range of potential approaches and tools for the protection and management”;

60. *Concerned about* the serious threats to the biological diversity, *stresses* the need for rapid action to address these threats on the basis of the precautionary approach and the ecosystem approach, in marine areas beyond the limits of national jurisdiction, in particular areas with seamounts, hydrothermal vents, and cold-water corals, other vulnerable ecosystems and certain other underwater features, resulting from processes and activities in such areas;

61. *Calls upon* the United Nations General Assembly and other relevant international and regional organizations, within their mandate, according to their rules of procedure, to urgently take the necessary short-term, medium-term and long-term measures to eliminate/avoid destructive practices, consistent with international law, on scientific basis, including the application of precaution, for example, on a case by case basis, interim prohibition of destructive practices adversely impacting the marine biological diversity associated with the areas identified in paragraph 60 above.

62. *Recommends* Parties to also urgently take the necessary short-term, medium-term and long-term measures to respond to the loss or reduction of marine biological diversity associated with the areas identified in paragraph 60 above.

Annex I

ELABORATED PROGRAMME OF WORK ON MARINE AND COASTAL BIOLOGICAL DIVERSITY

I. VISION, MISSION, GOALS AND TARGETS OF THE PROGRAMME OF WORK ON MARINE AND COASTAL BIOLOGICAL DIVERSITY

A. Overall vision

1. The overall vision that the effective implementation of the elaborated programme of work on marine and coastal biological diversity strives to attain is to halt the loss of marine and coastal biological diversity nationally, regionally and globally and secure its capacity to provide goods and services.

B. Mission

2. The overall goal of the programme of work on marine and coastal biodiversity, consistent with the Strategic Plan of the Convention, is to promote the implementation of the three objectives of the Convention and achieve significant reduction of the current rate of marine and coastal biological diversity loss by the year 2010.

C. *Goals and targets*

3. Requests SBSTTA at its 10th or 11th meeting to further refine the proposal for the integration of outcome-oriented targets into the programme of work on marine and coastal biodiversity taking into account, as appropriate, the framework in annex 2 in decision VII/-- (strategic plan), and taking into account that these goals and targets should be viewed as flexible framework within which national and/or regional targets may be developed, according to national priorities and capacities, and decides that outcome-oriented targets are a key priority at SBSTTA.

II. BASIC PRINCIPLES

4. In accordance with decision IV/5, annex, paragraphs 2–14, the ecosystem approach and the precautionary approach have a central role in guiding all activities undertaken as part of the programme of work, and thus provide the foundation for its implementation. The success of the programme of work also relies on scientific research aimed at providing understanding of the functioning of the broader ecosystem in terms of its component parts and their connectivity. Research efforts oriented towards the information needs of management ensure that management decisions are based on best available science in the context of the precautionary approach. The roster of experts continues to provide the Executive Secretary with a valuable source of expertise in marine and coastal biological diversity, and its continued use, expansion and updating is encouraged. The programme of work will also use and draw upon scientific, technical and technological knowledge of local and indigenous communities in keeping with the contents of Article 8(j) of the Convention, as well as community and user-based approaches.

5. The programme of work may be implemented on the following levels:

(a) **National and local**, which provide the primary level of implementation of the activities in the programme of work;

(b) **Regional**, where appropriate, through regional organizations, arrangements and bodies,;

(c) **Global**, where appropriate, through international organizations and appropriate bodies.

6. The involvement of all relevant stakeholders in implementation of the programme of work should be promoted. The role of the Secretariat is to promote and facilitate the implementation of the programme of work.

7. The implementation of the programme of work should be carried out with the full and effective participation of indigenous and local communities as appropriate and respect of their rights under domestic and applicable international law. In this context, Article 6.18 of the FAO Code of Conduct for Responsible Fisheries that highlights the need to protect the preferential access rights of fishers and fishworkers, particularly those engaged in subsistence, small scale and artisanal fisheries, to traditional fishing grounds and resources should be noted.

8. In accordance with the Millennium Development Goals, the implementation of the programme of work aims to make a direct contribution to poverty alleviation. Its successful implementation will require national and regional capacity-building and financial resources for developing country Parties, in particular the least developed and small island developing States among them.

III. PROGRAMME ELEMENTS

Programme element 1: Implementation of integrated marine and coastal area management (IMCAM)

Goal: To promote and improve the implementation of IMCAM at the local, national and regional level.

Operational objective 1.1: *To apply appropriate policy instruments and strategies, including building of capacity, for the effective implementation of IMCAM*

Suggested activities:

(a) To promote, within the framework of IMCAM, the integration of biological diversity concerns in all socio-economic sectors adversely impacting the marine and coastal environment.

(a) *bis* To promote the application of ecosystem-based management, including through integration of coastal management activities and watershed management.

(b) To identify obstacles to the implementation of IMCAM nationally and regionally, and develop and implement strategies, such as partnerships, tools and other means, to overcome those obstacles, including provision of guidance on the application of such tools.

(c) To encourage the application of the ecosystem approach, promote integrated multidisciplinary and multisectoral coastal and ocean management at the national level, and encourage States in developing ocean policies and mechanisms on integrated coastal management.

(d) To promote the identification or establishment of national and, where appropriate, regional processes for developing advice on the application of IMCAM and issues identified under the operational objective.

(e) To assist the development of national and regional capacity-building.

(f) To provide information on relevant legal and institutional issues, having regard to the United Nations Convention on the Law of the Sea (UNCLOS) and other related international and regional agreements.

(g) To assist the development of appropriate education and public awareness programmes at all levels.

(h) To provide guidance on maintenance and wider application of local and traditional knowledge.

(i) To cooperate with and build upon the Large Marine Ecosystem (LME) concept, as well as specific LME projects that are ongoing or planned.

Ways and means

The activities should be carried out by Parties acting individually or under regional agreements, assisted by regional and international organizations, and the Executive Secretary. An ad hoc technical expert group on implementation of IMCAM (recommendation VIII/3 A, annex) will provide guidance on implementation of activity (b).

Operational objective 1.2: *To undertake direct action to protect the marine environment from negative impacts*

Suggested activities:

- (a) To promote adequate protection of areas important for reproduction such as spawning and nursery areas and restoration of such areas and other important habitats for marine living resources.
- (b) To promote action to reduce and control sea-based sources of pollution.
- (c) To achieve substantial progress in protecting the marine environment from land-based activities through effective application of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and other appropriate instruments, including proper coastal land use, watershed planning, and integration of integrated marine and coastal area management into key sectors.
- (f) To promote urgent and special attention and measures in respect to closed and semi-closed seas.
- (d) To take measures to reduce by-catch.

Ways and means

The activities should be carried out by Parties acting individually or under regional agreements where appropriate and assisted by regional and international organizations, including the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). The Executive Secretary should assist Parties in implementation.

Operational objective 1.3: *To develop guidelines for ecosystem evaluation and assessment, paying attention to the need to identify and select indicators, including social and abiotic indicators, that distinguish between natural and human-induced effects.*

Suggested activities:

- (a) To promote the development of sets of national indicators on which to base decision-making; and convene regional workshops to help select key indicators.
- (b) To identify existing organizations and initiatives.
- (c) To promote the identification of key habitats for marine living resources on a regional basis, with a view to further develop policies for action to prevent physical alteration and destruction of these habitats, and pursue restoration of degraded habitats, including, *inter alia*, coral reef systems.
- (d) To promote the establishment or strengthening of mechanisms for research, monitoring and assessment of marine and coastal ecosystems and their living resources.
- (e) To promote exchange of information and experience using the clearing-house mechanism and other appropriate mechanisms.
- (f) To collaborate with relevant organizations in the preparation of guidelines.
- (g) To facilitate the establishment of a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments.

Ways and means

The Executive Secretary should support the implementation of activities (a) on the global level, (b), (e), (f), and (g). Parties should implement (a), (b), (c), (d), and (e) on the national level and under

regional agreements where appropriate, with regional organizations, such as regional seas conventions and action plans, taking a lead role on relevant activities at the regional level.

Programme element 2: Marine and coastal living resources

Goal: To ensure the conservation and sustainable use of marine and coastal living resources

Operational objective 2.1: *To promote ecosystem approaches to the conservation and sustainable use of marine and coastal living resources, including the identification of key variables or interactions, for the purpose of assessing and monitoring, first, components of biological diversity; second, the sustainable use of such components; and, third, ecosystem effects.*

Suggested activities:

(a) To develop collaborative links with relevant organizations and institutions, including in regards to cooperative activities aimed at protecting biodiversity in marine areas beyond national jurisdiction.

(b) To promote the exchange of information and experience using appropriate mechanisms.

(c) To promote the identification and development of ecosystem approaches compatible with the sustainable use of marine and coastal living resources.

(d) To promote the identification both of components of the ecosystems which are critical to the functioning of the ecosystem and of key threats.

(e) To promote capacity-building at local, national and regional levels, including local and traditional knowledge.

(f) To carry out a study on the effects of fish and invertebrate stock enhancement on marine and coastal biological diversity at the species and genetic levels.

(g) To implement the 1995 Code of Conduct for Responsible Fisheries taking note of the relevant FAO international plans of action and technical guidelines.

(h) To eliminate destructive fishing practices, and restore and maintain fisheries stocks to sustainable levels by the year 2015, including through financial assistance to developing countries, in particular small island developing States, for improved enforcement, surveillance and patrolling and recognizing the importance of use of sustainable fishing practices, including traditional fishing practices.

(i) To maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including areas within and beyond national jurisdiction.

(j) To promote, in collaboration with the Global Taxonomy Initiative, the strengthening of taxonomic expertise at regional and national levels.

Ways and means

The activities should be carried out by Parties acting individually or under regional agreements where appropriate, and regional and international organizations. The Executive Secretary will assist Parties in implementation, and should carry out activity (f).

Operational objective 2.2: To make available to the Parties information on marine genetic resources in marine areas beyond national jurisdiction and, as appropriate, on coastal and marine genetic resources under national jurisdiction from publicly available information sources.

Suggested activities:

(a) To compile and synthesize information on the methods for the identification, assessment and monitoring of genetic resources of the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction, and information on their status and trends including identification of threats to such genetic resources and the technical options for their protection; and report on the progress made to SBSTTA.

(b). To identify activities and processes under national jurisdiction or control which may have significant adverse impact on deep seabed ecosystems and species beyond the limits of national jurisdiction, in order to address Article 3 of the Convention.

Ways and means

Activity (a) should be carried out by international organizations, such as the United Nations Division for Ocean Affairs and the Law of the Sea, the United Nations Environment Programme, and the Intergovernmental Oceanographic Commission of the United Nations Educational, Cultural and Scientific Organization, as appropriate with the support of the Executive Secretary. Activity (b) should be undertaken by Parties and other States

Operational objective 2.3: To gather and assimilate information on, build capacity to mitigate the effects of, and to promote policy development, implementation strategies and actions to address: (i) the biological and socio-economic consequences of physical degradation and destruction of key marine and coastal habitats including mangrove ecosystems, tropical and cold-water coral-reef ecosystems, seamount ecosystems and seagrass ecosystems including identification and promotion of management practices, methodologies and policies to reduce and mitigate impacts upon marine and coastal biological diversity and to restore mangrove forests and rehabilitate damaged coral reef; and in particular (ii) the impacts of mangrove forest destruction, coral bleaching and related mortality on coral-reef ecosystems and the human communities which depend upon coral-reef services, including through financial and technical assistance.

Suggested activities:

(a) Activities on coral bleaching and physical degradation and destruction of coral reefs as adopted in decision VI/3 and amended in VII/-- (in this annex) are contained in appendices 1 and 2 below.

Other activities relevant to non coral ecosystems will be developed by Parties and, where appropriate, by regional organizations.

Ways and means

The Executive Secretary should facilitate implementation, through active collaboration with International Coral Reef Initiative and its partners, the regional seas programmes of the United Nations Environment Programme, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, and other relevant organizations. The other activities should be carried out by Parties acting individually or under regional agreements and regional and international organizations.

Operational objective 2.4: *To enhance the conservation and sustainable use of biological diversity of marine living resources in areas beyond the limits of national jurisdiction*

Suggested activities:

(a) To identify threats to the biological diversity in areas beyond the limits of national jurisdiction, in particular areas with seamounts, hydrothermal vents, and cold-water corals, and certain other underwater features.

(b) To urgently take the necessary short-term, medium-term and long-term measures to eliminate/avoid destructive practices, consistent with international law, on scientific basis, including the application of precaution, for example, consideration, on a case by case basis, of interim prohibition of destructive practices adversely impacting the marine biological diversity associated with marine areas beyond the limits of national jurisdiction, in particular areas with seamounts, hydrothermal vents, and cold-water corals, other vulnerable ecosystems and certain other underwater features.

Ways and means

Activities (a) and (b) should be carried out by Parties, the United Nations General Assembly and other relevant international and regional organizations, within their mandate, and according to their rules of procedure.

Programme element 3: Marine and coastal protected areas

Goal: The establishment and maintenance of marine and coastal protected areas that are effectively managed, ecologically based and contribute to a global network³ of marine and coastal protected areas, building upon national and regional systems, including a range of levels of protection, where human activities are managed, particularly through national legislation, regional programmes and policies, traditional and cultural practices and international agreements, to maintain the structure and functioning of the full range of marine and coastal ecosystems, in order to provide benefits to both present and future generations.

Operational objective 3.1: *To establish and strengthen national and regional systems of MCPAs integrated into a global network³ and as a contribution to globally agreed goals.*

Suggested activities:

(a) To establish effective marine and coastal biodiversity management frameworks as set out in appendix 3 to annex I to the present decision, which would comprise sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment, including integrated networks of marine and coastal protected areas consisting of:

- (i) Marine and coastal protected areas, where threats are managed for the purpose of biodiversity conservation and/or sustainable use and where extractive uses may be allowed; and
- (ii) Representative marine and coastal protected areas where extractive uses are excluded, and other significant human pressures are removed or minimized, to

^{3/} A global network provides for the connections between Parties, with the collaboration of others, for the exchange of ideas and experiences, scientific and technical cooperation, capacity building and cooperative action that mutually support national and regional systems of protected areas which collectively contribute to the achievement of the programme of work. This network has no authority or mandate over national or regional systems.

enable the integrity, structure and functioning of ecosystems to be maintained or recovered.

In establishing these frameworks, the appropriate balance between categories (i) and (ii) above would be selected by the country concerned.

Ways and means:

Activity (a) should be carried out by Parties acting individually or under regional agreements and regional and international organizations. Funding agencies should support implementation of these activities.

Operational objective 3.2: *To enhance the conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction*

Suggested activities:

(a) To support any work of UNGA in identifying appropriate mechanisms for the future establishment and effective management of marine protected areas beyond national jurisdiction

Ways and means

Activity (a) should be carried out by the Executive Secretary in support of the Secretary-General of the UN.

Operational objective 3.3: *To achieve effective management of existing MCPAs*

Suggested activities

(a) To achieve effective management of MCPAs through good governance, clear legal or customary frameworks to prevent damaging activities, effective compliance and enforcement, ability to control external activities that affect the marine and coastal protected area, strategic planning, capacity building and sustainable financing.

(b) To address, through appropriate integrated marine and coastal management approaches, all threats, including those arising from the land (e.g. water quality, sedimentation) and shipping/transport, in order to maximize the effectiveness of marine and coastal protected areas and networks in achieving their marine and coastal biodiversity objectives taking into account possible effects of climate change such as rising sea levels.

(c) To facilitate relevant stakeholder and indigenous and local community participation as an essential component of implementing operational objective 3.2.

Ways and means

The activities should be carried out by Parties acting individually or under regional agreements and regional and international organizations. Funding agencies should support implementation of these activities.

Operational objective 3.4: *To provide support for and facilitate monitoring of national and regional systems of MCPAs*

Suggested activities:

(a) To provide active financial, technical and other support for the establishment of a global system of marine and coastal protected area networks and the implementation within it of relevant provisions contained in this operational objective, including identification and removal of barriers to the

creation of marine and coastal protected areas, and removal of perverse incentives for unsustainable activities in the marine and coastal environment, pursuant to decision VI/15, on incentive measures, within the framework of relevant marine-related international law.

(b) To provide and maintain, in collaboration with the World Conservation Monitoring Centre of the United Nations Environment Programme, in collaboration with relevant organizations and authorities, up-to-date information on marine and coastal protected areas in order to provide a basis for assessment of progress made in implementing the operational objective.

(c) Promote transfer of appropriate technology and closely collaborate with regional initiatives to fund activities, such as monitoring, geared towards conservation and sustainable use of marine and coastal biological diversity.

Ways and means

The activities should be carried out by Parties acting individually or under regional agreements, and regional and international organizations, such as UNEP-WCMC. The Executive Secretary should facilitate their implementation. Funding agencies should support implementation of the activities.

Operational objective 3.5: *To facilitate research and monitoring activities that reflect identified global knowledge gaps and priority information needs of MCPA management.*

Suggested activities:

(a) To collaborate with relevant organizations in the preparation of project proposals to facilitate the implementation of the research and monitoring priorities outlined in appendix 4 below.

(b) To identify and implement an appropriate mechanism for developing advice related to network design and ecological coherence of networks.

(c) Using the clearing-house mechanism, to assist the exchange of information on research, management issues and problems (including incentive measures) between marine protected area managers, to facilitate continuous improvement in management effectiveness across the global network⁴ of marine protected areas.

Ways and means

Activity (a) should be carried out by Parties acting individually or under regional agreements and regional and international organizations, including research organizations. The Executive Secretary should facilitate its implementation. The Executive Secretary should take the lead role in implementing activities (b) and (c).

Programme element 4: Mariculture

Goal: To prevent or minimize the negative impacts of mariculture on marine and coastal biodiversity and to enhance any positive effects of mariculture using native species.

⁴ A global network provides for the connections between Parties, with the collaboration of others, for the exchange of ideas and experiences, scientific and technical cooperation, capacity building and cooperative action that mutually support national and regional systems of protected areas which collectively contribute to the achievement of the programme of work. This network has no authority or mandate over national or regional systems.

Operational objective 4.1: *To promote use of techniques, which minimize adverse impact of mariculture on marine and coastal biological diversity.*

Suggested activities:

(a) To adopt the use of relevant methods, techniques and practices for avoiding the adverse effects of mariculture on marine and coastal biological diversity, and to incorporate them into national biodiversity strategies and action plans as appropriate, including

- (i) The application of environmental impact assessments, or similar assessment and monitoring procedures, for mariculture developments, with due consideration paid to the scale and nature of the operation, as well as carrying capacities of the ecosystem, taking into account the guidelines on the integration of biodiversity considerations in environmental impact assessment legislation and/or processes and in strategic impact assessment, endorsed by the Conference of the Parties in its decision VI/7 A, as well as the recommendations endorsed in decision VI/10, annex II, on the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities. There is a need to address the likely immediate, intermediate and long-term impacts on all levels of biodiversity;
- (ii) Development of effective site-selection methods, in the framework of integrated marine and coastal area management, taking into account the special needs and difficulties encountered by stakeholders in developing countries;
- (iii) Development of effective methods for effluent and waste control;
- (iv) Development of appropriate genetic resource management plans at the hatchery level and in the breeding areas, including cryo-preservation techniques, aimed at biodiversity conservation;
- (v) Development of controlled low-cost hatchery and genetically sound reproduction methods, made available for widespread use, in order to avoid seed collection from nature, where appropriate. In cases where seed collection from nature cannot be avoided, environmentally sound practices for spat collecting operations should be employed;
- (vi) Use of selective fishing gear in order to avoid or minimize by-catch in cases where seed are collected from nature;
- (vii) Use of native species and subspecies in mariculture;
- (viii) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polyploids, including, in the framework of the Cartagena Protocol on Biosafety, living modified organisms (LMOs);
- (ix) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity;
- (x) Minimizing the use of antibiotics through better husbandry techniques;
- (xi) Ensure that fish stocks used for fish meal and fish oil are managed in such a way as to be sustainable and to maintain the trophic web;

- (xii) Use selective methods in industrial fisheries to avoid or minimize by-catch.
- (xiii) Considering traditional knowledge, where applicable as a source to develop sustainable mariculture techniques.

(b) To adopt best management practices and legal and institutional arrangements for sustainable mariculture, taking into account the special needs and difficulties encountered by stakeholders in developing countries, in particular through implementing Article 9 of Code of Conduct on Responsible Fisheries, as well as other provisions in the Code dealing with aquaculture, recognizing that it provides necessary guidance to develop legislative and policy frameworks at the national, regional and international levels.

(c) To undertake a comprehensive review of relevant documents on best practices relevant to mariculture, and to disseminate the results, as well as relevant case-studies, through the clearing-house mechanism prior to the tenth meeting of the Subsidiary Body.

(d) To facilitate the implementation of the research and monitoring priorities outlined in appendix 5 below in collaboration with the Food and Agriculture Organization of the United Nations and other relevant organizations.

(e) To undertake regional and international collaboration to address transboundary impacts of mariculture on biodiversity, such as the spread of disease and invasive alien species.

Ways and means

Activities (a), (b) should be carried out by Parties acting individually or under regional agreements, with assistance from regional and international organizations, such as the FAO, and the Executive Secretary. The Executive Secretary should take a lead role in carrying out activity (c). Activity (d) should be carried out by Parties, regional and international organizations, including research organizations. The Executive Secretary should facilitate its undertaking. Funding agencies should support implementation of activities (a) and (b).

Programme element 5: Invasive alien species

Goal: To prevent the introduction of invasive alien species into the marine and coastal environment, and to eradicate to the extent possible those invasive alien species that have already been introduced.

Operational objective 5.1: *To achieve better understanding of the pathways and the causes of the introduction of alien species and the impact of such introductions on biological diversity.*

Suggested activities:

- (a) To analyse and disseminate information, data and case-studies on the subject.
- (b) To develop collaboration with relevant organizations.
- (c) To ensure exchange of information and experience, using appropriate mechanisms.

Ways and means

The Executive Secretary should take a lead role in carrying out these activities, with assistance from international organizations (such as the IMO and GISP), regional organizations and Parties.

Operational objective 5.2: *To put in place mechanisms to control all pathways, including shipping, trade and mariculture, for potential alien invasive species in the marine and coastal environment.*

Suggested activities:

(a) To invite relevant organizations such the International Maritime Organization (IMO), the Global Invasive Species Programme (GISP), the Food and Agriculture Organization of the United Nations (FAO), and the Ramsar Convention on Wetlands to work together to develop an international cooperative initiative to address impediments to the management of marine alien species, particularly to address technical problems related to the identification and control of marine invasions.

(b) To implement measures to address invasive alien species in ballast water, including through the International Convention for the Control and Management of Ships' Ballast Water and Sediments

(c) To exchange information and facilitate technical cooperation on effective techniques for prevention, early detection, eradication and control of invasive alien species in the marine and coastal environments.

(d) To develop close collaboration between national agencies responsible for development of controls on pathways for entry of alien species and national input into the work of IPPC, OIE, IMO and other relevant international agreements.

(e) To identify means to support capacity-building in developing countries to strengthen their ability to conduct work related to alien species.

(f) To promote international cooperation by inviting relevant organizations and donor agencies to collaborate in the assessment of the effects of invasive alien species, and in the elaboration of strategies for their control.

Ways and means

Activities (b), (c) and (d) should be carried out by Parties. The other activities should be carried out by the Executive Secretary and the organizations identified in activity (a) as well as by, and in collaboration with, Parties.

Operational objective 5.3: To maintain an incident list on introductions of alien species

Suggested activities:

To continue making updated information on introductions of alien species available through the clearing-house mechanism or other appropriate mechanisms.

Ways and means

The Executive Secretary should take a lead role in facilitating the implementation of this activity in collaboration with relevant international and regional organizations and the Parties.

Programme element 6. General

Operational objective 6.1: *To assemble a database of initiatives on programme elements through a cooperative approach with relevant organizations and bodies, with special emphasis on integrated marine and coastal areas management.*

Suggested activities:

- (a) To identify sources of relevant information and to make this readily available.
- (b) To request inputs from Parties, countries and relevant organizations and bodies.

(c) To carry out desk evaluations with the assistance of the roster of experts of available information and to disseminate the findings through the clearing-house mechanism.

Ways and means

The Executive Secretary should take a lead role in implementing these activities.

Operational objective 6.2: *To undertake effective collaboration, cooperation and harmonization of initiatives with relevant conventions, organizations and agencies while recognising their independent mandates.*

Suggested activities:

(a) To identify and implement meaningful joint activities and initiatives with relevant conventions, organizations and agencies aimed at the implementation of this work programme.

(b) To collaborate with regional seas conventions and action plans, including identification of joint programmes of work on topics of mutual relevance, including through regionally elaborated criteria for the establishment and management of marine and coastal protected areas under regional seas conventions and action plans.

Ways and means

The Executive Secretary should take a lead role in implementing these activities, together with relevant conventions, organizations and agencies, coordinating units of regional seas conventions and action plans.

IV. ENABLING ACTIVITIES

(a) Provision of assistance to coastal in particular small island developing States in developing ocean policies and mechanisms for integrated management.

(b). Strengthening capacity of small island developing States, through training and other appropriate means, to enable their effective participation in all elements of the Convention's research priorities on marine and coastal biodiversity, including conducting new research and compiling information from past research on marine and coastal biodiversity within and beyond national jurisdiction.

(c) Updating and strengthening existing legislation as well as institutions dealing with marine and coastal issues, including the effective implementation of laws and regulations, and the strengthening and rationalization of institutions.

(d) Provision of assistance to coastal in particular small Island developing States in coordinating policies and programmes at the regional and subregional level, aimed at the conservation and sustainable management of fishery resources and implementation of integrated coastal area management plans, including through the promotion of sustainable coastal and small-scale fishing activities and, where appropriate, the development of related infrastructure.

(e) Formation of cooperative partnerships between countries or between international and/or regional organizations to enhance capacity for implementation, taking into account the special needs and difficulties experienced by stakeholders in developing countries and by indigenous and local communities.

(f) Increase of scientific, technical and technological collaboration, including integrated assessment at the global and regional levels, including the appropriate transfer of marine science and marine technologies and techniques for the conservation and management of living marine resources and

expanding ocean-observing capabilities for timely prediction and assessment of the state of the marine environment.

(g) Build capacity in marine science, information and management, through, *inter alia*, promoting the use of environmental impact assessments and environmental evaluation and reporting techniques for projects or activities that are potential harmful to the coastal and marine environments and their living and non-living resources.

(h) Undertaking capacity building, technology transfer, public education and awareness, and training in order to improve the implementation of this programme of work.

(i) Urgent mobilization of financial resources and identification of additional funding mechanisms for implementation of this programme of work, including provision of information about creative arrangements and tools for financing conservation and sustainable use, and through establishment of additional mechanisms, such as small grants funds.

(j). Provision of financial and technical support by the international community including by distant water fishing nations to developing countries in particular small island developing States for sustainable management and use of marine and coastal resources.

(k) Continued review of obstacles to implementation of each programme element leading to development of additional enabling activities, as appropriate, aimed at overcoming such obstacles.

(l) To develop close collaboration between national agencies responsible for implementation of this programme of work and related supporting activities.

Ways and means

The Executive Secretary should collaborate with funding agencies, international and regional organizations and Parties to facilitate the implementation of these activities. Activity (b) will be carried out in collaboration with regional fisheries and research organizations as appropriate. Funding agencies should support implementation of activity (b).

V. TIME SCHEDULE

The elaborated programme of work will be effective for a six year time period (2004-2010) at which point its implementation will be reviewed in-depth, and the programme of work will be revised as necessary. Additional elaboration of the programme of work prior to 2010 can be undertaken through decisions of the Conference of the Parties in response to emerging global priorities needing urgent action.

Appendix 1

SPECIFIC WORK PLAN ON CORAL BLEACHING

(To be incorporated from UNEP/CBD/COP/7/L.31/Add.1)

Appendix 2

**ELEMENTS OF A WORK PLAN ON PHYSICAL DEGRADATION AND DESTRUCTION
OF CORAL REEFS, INCLUDING COLD WATER CORALS**

The following activities, adopted by the Conference of the Parties in its decision VI/3, would be incorporated under operational objective 2.3 of the elaborated programme of work:

(a) *Assessments and indicators.* To provide a comprehensive analysis of the status and trends of global coral-reef ecosystems, including determination of indicators for continued monitoring and determination of ecological and socio-economic impacts of coral-reef degradation and destruction;

(b) *Management.* To identify management practices, technologies and policies that promote the conservation and sustainable use of coral-reef ecosystems and their associated marine biological diversity, with a view to addressing recognized threats (i.e., overfishing, coastal development, destructive fishing practices, land-based pollution, marine-based pollution and recreational use) and identifying sustainable management approaches;

(c) *Capacity-building.* To strengthen the capacities of Parties, regions, local communities and other stakeholders, to manage sustainably coral-reef ecosystems and their associated marine biological diversity so as to maintain their ecosystem benefits and to promote awareness and responsible action to prevent and mitigate physical degradation and destruction of coral reefs and its effects on marine biological diversity;

(d) *Financing.* To recognize and promote existing programmes and mobilize further mechanisms for financial and technical development assistance to support implementation of activities addressing the physical degradation and destruction of coral reefs;

(e) *Education and public awareness.* To educate and inform the public, policy makers and other stakeholders of ecological and socio-economic values of coral-reef ecosystems and the importance of an ecosystem approach towards their conservation and sustainable management.

Appendix 3

**ELEMENTS OF A MARINE AND COASTAL BIODIVERSITY MANAGEMENT
FRAMEWORK**

A. *Purpose of the framework*

1. The overall marine and coastal biodiversity management framework should fulfil the three objectives of the Convention, namely the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits, arising out of the utilization of genetic resources.

2. The framework would play a precautionary approach role to help halt losses in biodiversity and encourage recovery, notwithstanding our imperfect knowledge of the marine environment.

3. The framework should address all elements of biodiversity, as reflected in Annex I to the Convention, including the genetic, species and ecosystem levels.

4. Marine ecosystems include both benthic and pelagic elements. Most species have a mobile stage in their life cycle. As a consequence, marine systems are considered open and dispersing larvae can link distant marine, coastal and inland water habitats. This means that connectivity issues are significant in

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designing a marine biodiversity management framework, and one MCPA will not be able to protect all the biodiversity within the area. A network approach is therefore essential. The network should be at an appropriate scale, which may in some cases require a regional approach. That regional approach should address proportionality issues on a regional rather than a national scale, for example when one or a handful of countries possess most or all of a particular habitat type or the world population of a particular species.

B. Elements of the framework

5. An effective marine and coastal biodiversity management framework would comprise sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment, including integrated networks of marine and coastal protected areas consisting of:

(i) Marine and coastal protected areas, where threats are managed for the purpose of biodiversity conservation and/or sustainable use and where extractive uses may be allowed; and

(ii) Representative marine and coastal protected areas where extractive uses are excluded, and other significant human pressures are removed or minimized, to enable the integrity, structure and functioning of ecosystems to be maintained or recovered.

6. The balance between category (i) and (ii) MCPAs in paragraph 17 above would be selected by the country concerned.

7. This framework should take into account national requirements with respect to the interests of indigenous and local communities, such as spiritual and cultural practices and socio-economic interests and, as appropriate, opportunities for the participation of indigenous and local communities in the establishment and management of MCPAs, and in accordance with Article 8(j) and related provisions should respect, preserve and maintain traditional knowledge, innovations and practices.

C. MCPAs where extractive uses are permitted

8. MCPAs where extractive uses are permitted would contain areas that are subject to site-specific controls that have an explicit biodiversity objective or recognized biodiversity effect. Those controls may also have other objectives (e.g., economic or social objectives). In many countries these may comprise the majority of areas within MCPA networks and deliver most biodiversity benefits. Examples of such controls include controls on fishing methods (e.g., restricting bottom trawling), controls on the removal of certain species (e.g., habitat forming species), rotational closures, and controls on pollution and sedimentation.

9. Amongst the roles for these areas may be to maintain connectivity across the overall network, protect life cycle stages (e.g. as a result of spawning behaviour), and buffer the representative areas where extractive uses have been excluded.

D. Representative areas from which extraction is excluded

10. Such representative areas would be managed to maintain their integrity, structure, functioning, resilience and persistence, or to take restorative or rehabilitative steps for biodiversity. They would encompass a full range of marine and coastal ecosystems (including those that are also unique or special), and be protected from human impacts and the effects of alien species. The key purpose of these areas would be to provide for intrinsic values, to allow us to better understand the marine and coastal environment by acting as scientific reference areas, to contribute towards marine environmental recovery, and to act as insurance against failures in management. But they will also contribute to other objectives, including socio-economic well-being, sustainable use of fisheries in adjacent areas, and public enjoyment.

11. They should be representative of all marine and coastal ecosystems and should attempt to cover centers of endemism. They should contain sufficient area and replicates to ensure that they can fulfil their objectives and be ecologically viable over time. Although the application of criteria for representativeness in the marine environment is a complex issue, experience in terrestrial protected area work, the work on MCPAs to date, and the literature all indicate that the 'representative' concept will not be provided by a few small MCPAs.

12. Protection from human impacts would mean that extraction of indigenous biota would be prevented except to the extent necessary to allow essential scientific research and education (i.e., these would be no-take reserves applying to the area or to a specified element of the ecosystem), but also that other practices which significantly impact on biodiversity (e.g. substrate alteration, changes in sediment movements, pollution, visitor disturbance of sensitive species) would be prevented or minimized.

13. These MCPAs would be permanent, subject to any necessary changes to allow them to better achieve their objectives, taking into account natural dynamics. They would need to be viable, in the face of changing threats and long-term environmental change (e.g. climate change). Viability might depend on matters such as the nature of the legal protection, the presence of replicates, the design of the individual MCPAs, and the connectivity between MCPAs (directly or using other MCPAs as stepping stones).

14. Although public access may be encouraged in order to generate educational and enjoyment benefits, these benefits would be treated as secondary to the primary purposes listed above. Public access may need to be controlled to prevent unacceptable impacts.

15. Areas would need to be geographically dispersed across biogeographic regions and would need to be ecosystem-based, rather than focus on single species.

E. Sustainable management of the wider environment

16. The MCPA network would be sitting within a framework of sustainable management practices over the wider marine and coastal environment.

17. Sustainable management practices over the wider marine and coastal environment could include general restrictions that would apply to the entire area (e.g., bans on certain destructive fishing methods), and site-specific restrictions imposed for non-biodiversity purposes (e.g., trawling restrictions to protect cables, restricted areas for defence purposes). These practices can contribute to biodiversity protection in a number of ways, including:

(a) The management of more widespread issues that pose a threat to the effectiveness of individual MCPAs, and ultimately, the aim of regional networks. These threats usually arise from land-based sources, and include issues such as water quality, sedimentation and shipping/transport;

(b) Providing direct benefits to biodiversity (e.g. restrictions on trawling to prevent cable damage can also protect sensitive biodiversity such as corals and sponges);

(c) Protecting wide-ranging marine and coastal biodiversity species which are difficult to address through site-specific measures (e.g. restrictions on fishing practices that cause a by-catch of species such as albatross, marine mammals and turtles); and

(d) Reducing impacts on the connections between MCPAs, e.g., by allowing the movement of larvae and wide ranging species between MCPAs.

F. International support for creation and management of MCPA networks

18. There are a large number of identified impediments to the creation and management of MCPAs at the national level. There are a number of ways in which the international community can help to overcome these impediments. In particular, it can:

- (a) Provide active financial, technical and other support for MCPA work; and
- (b) Help to identify and remove both the barriers to the creation of MCPAs, and perverse incentives for unsustainable activities in the marine and coastal environment.

Appendix 4

**RESEARCH PRIORITIES, INCLUDING RESEARCH AND MONITORING PROJECTS
ASSOCIATED WITH PROGRAMME ELEMENT 3: MARINE AND COASTAL
PROTECTED AREAS ^{5/}**

The following research priorities and pilot projects are designed to both explore and enhance the linkages between marine and coastal protected areas and the sustainable use of marine and coastal living resources. Achieving the goal of sustainable use of living resources is dependent on the social, economic and cultural context of each MCPA, and therefore a number of the research priorities focus on this aspect of MCPAs. The effects of MCPAs on population size and dynamics (paragraph (d) of the terms of reference) are investigated through priority 2.1 (connectivity and proportionality), priority 2.3 (d) (climate change), priority 3.1 (MCPA size and location vs. species & habitat dynamics), and priority 3.6 (b) (percentage of protection required vs. size and dynamics of local population).

A. *Establishing a global network₆ of MCPAs*

Priority 1.1: Developing and implementing national, regional and global strategies towards establishing networks of MCPAs.

Pilot project:

- (a) Parties, regional bodies and relevant organizations to bring to the attention of the Secretariat of the Convention on Biological Diversity existing and planned initiatives towards the development of networks of MCPAs.
- (b) Draft action-oriented strategies for establishing MCPA networks, and implement those strategies in line with regional initiatives, for example by holding regional workshops.

B. *Inventory and assessment of MCPAs and the global system*

Priority 2.1: Assessing the representativeness, connectivity and proportionality of the existing MCPA system.

Pilot projects:

- (a) Undertake initiatives to map ecosystems and habitats within regions and biogeographic areas, and determine the minimum level of broad habitat categories required for assessing representativeness of MCPA networks. Use this as a basis for assessing representativeness of the existing MCPA network. This work should use a high-level framework that is compatible with the basis for global inventory work. One possible approach to this work is to hold regional workshops.
- (b) Assess connectivity to determine bioregions, and apply this information for evaluation of the existing MCPA network, as well as for identifying priority areas for the future.
- (c) Assess the effectiveness of the current MCPA network regionally and globally for the conservation and sustainable use of migratory species.

^{5/} From SBSTTA recommendation VIII/3 B, annex I.

^{6/} see definition in footnote 2

Priority 2.2: Developing appropriate databases at the national level to allow for an assessment of MCPA frameworks on a larger (regional/global) scale. Using these data to identify patterns among MCPAs to generate priority needs for future research and approaches for adaptive management.

Pilot projects:

- (a) Develop the high-level framework for the global inventory (see annex IV below), and related advice to national managers on national inventories.
- (b) Develop national databases for assessment of selected existing national/regional networks, selecting examples from the range of political, economic and biogeographic situations.
- (c) Undertake a global review of the current state of knowledge of MCPAs by region. Provide output in a format understandable for managers and policy makers.
- (d) Compiling information that illustrates the values, benefits and unique contributions of marine and coastal biodiversity, inter alia, breeding, migration patterns of marine species, and spawning sites.

Priority 2.3: Identifying the best indicators for assessing management effectiveness at various scales within an overall system.

Pilot projects:

- (a) Develop and test a suite of effective assessment measures, including indicators, on a number of existing sites (biological, socio-economic and governance-based indicators). Selected pilot sites must cover the range of cold, temperate and tropical regions.
- (b) Develop methods for evaluating the effectiveness of entire MCPA networks.
- (c) Develop methods for adapting MCPA management in response to possible changing species and habitat distribution patterns, which may result from climate change.

C. Implementation of MCPA networks

Priority 3.1: Develop methods to manage conflicts and generate support for adequate protection of biodiversity through area-specific approaches.

Pilot project:

- (a) Evaluate the long-term benefits (for example species changes, habitat changes and ecosystem changes) of protecting large-enough/significant-enough critical habitats and ecosystems, by developing case studies.

Priority 3.2: Establishing criteria for choosing MCPAs in countries that lack such criteria.

Pilot project:

- (a) Provide a conceptual model and best practice examples of criteria for selecting MCPAs, by undertaking linked work in a small number of selected countries.

Priority 3.3: Enhancing social and economic effects of MCPAs, particularly in terms of poverty alleviation.

Pilot projects:

- (a) Development of culturally sensitive MCPA development/management approaches to achieve effective participation, as appropriate, of indigenous and local communities and relevant stakeholders.
- (b) Develop adaptive approaches to MCPA establishment and management. This could be done by collection and dissemination of case studies of both best and worst-case examples of the degree to which an understanding of how target communities operate (socially/culturally) and “do business” can affect the success of MCPA establishment and management.

Priority 3.4: Developing effective “learning networks”—networking among MCPAs at the national/international level. Develop and test such networks in a representative range of test countries/regions.

Pilot projects:

- (a) Develop networks of communities/stakeholders of MCPAs to enable them to share and learn from experiences.
- (b) Compile information on existing learning networks, and develop guidance for the operation of such networks based on these experiences.

Priority 3.5: Developing effective methods for integrating traditional knowledge into MCPA establishment and management.

Pilot project:

- (a) Develop guidelines for integration of traditional knowledge, practices and innovation, with the participation of indigenous and local communities and with their prior informed consent in accordance with national legislation, into MCPA establishment and management, and support these by compiling and disseminating case studies on a wide range of examples from places where such initiatives have been undertaken (for example, New Zealand, Chile, the Wider Caribbean).

Priority 3.6: Developing strategies for integrating MCPAs and network development into long-term national and regional planning.

Pilot projects:

- (a) Develop strategies based on past experience and future needs for the range of geographical regions.
- (b) Develop methods for estimating the percentage of non-extractive protection required, in conjunction with national monitoring programmes, depending on the size and dynamics of local populations.
- (c) Incorporate considerations of sedimentation and water quality into planning and management processes.

Appendix 5

**RESEARCH AND MONITORING PRIORITIES ASSOCIATED WITH
PROGRAMME ELEMENT 4: MARICULTURE ^{7/}**

At the present time there is insufficient information available about the effects of mariculture on biodiversity and its mitigation. Therefore, additional efforts, including through the use of the knowledge, innovations and practices of indigenous and local communities as appropriate, should be developed in the following areas:

- (a) *General research needs:*
 - (i) Development of research programmes to support establishment of efficient monitoring programmes to monitor impacts of mariculture on marine and coastal biological diversity;
 - (ii) Development of criteria for judging the seriousness of biodiversity effects of mariculture;
 - (iii) Subsequent establishment of monitoring programmes to detect biodiversity effects of mariculture;
 - (iv) Research on the impact of escaped mariculture species on biodiversity;
 - (v) Development of criteria for when environmental impact assessments are required, and for the application of environmental impact assessments at all levels of biodiversity in the context of the guidelines endorsed by the Conference of the Parties in decision VI/7 A (genes, species, ecosystems), and the recommendations endorsed in decision VI/10, annex II;
 - (vi) Noting that the FAO glossary of terms is skewed towards marine capture fisheries, expansion of this glossary with regard to its terminology related to aquaculture;
 - (vii) Reinforcement of global assessments of marine and coastal biological diversity;

^{7/} From SBSTTA recommendation VIII/3 C, annex.

- (b) *Research related to impacts of mariculture on genetic diversity:*
- (i) Development of genetic resource management plans for broodstock;
 - (ii) Research aimed at understanding genetic effects of biotechnology developments in aquaculture;
 - (iii) Research aimed at understanding genetic structure of both the farmed and wild populations, including:
 - Effects of genetic pollution from farmed populations on wild populations;
 - Maintenance of genetic viability of farmed populations;
 - Studies of (genetics of) wild populations as potential new candidates for mariculture;
- (c) *Research related to impacts of mariculture on species diversity:*
- (i) Support for basic global-scale taxonomic studies, possibly in conjunction with the Global Taxonomy Initiative (GTI);
 - (ii) Support for studies aimed at development of responsible aquaculture using native species, including through consideration of traditional knowledge;
 - (iii) Development of methods and techniques for limiting by-catch of seed collection;
- (d) *Research related to impacts of mariculture on ecosystem diversity:*
- (i) Research on carrying capacity and carrying capacity models for planning aquaculture, especially stocking rates;
 - (ii) Comprehensive studies to quantitatively and qualitatively assess effects of mariculture on biodiversity for various aquatic ecosystems, selected by their sensitiveness degree;
 - (iii) Research on the competitive nature imposed on marine fisheries by capture and culture fisheries;
 - (iv) Studies aimed at improved understanding of the effects of inputs, such as chemicals, hormones, antibiotics and feeds on biodiversity;
 - (v) Research on the impact of diseases in cultured and wild species on biodiversity;
- (e) *Research related to socio-economics, culture, policy and legislation:*
- (i) Comparative studies on legislation, economic and financial mechanisms for regulating mariculture activity;
 - (ii) Development of quantitative and qualitative criteria to assess mariculture impacts on the environment, including cultural and social impacts, as outlined in the recommendations of decision VI/10, annex II;
- (f) *Monitoring programmes:*
- (i) Support for mariculture-related disease monitoring programmes at the global level;
 - (ii) Support for the transfer of biotechnological diagnostic tools for wide use;

- (iii) Update of taxonomic database including genetic diversity at the intra-specific level.

Annex II

GUIDANCE FOR THE DEVELOPMENT OF A NATIONAL MARINE AND COASTAL BIODIVERSITY MANAGEMENT FRAMEWORK⁸

1. For countries with no MCPAs or no highly protected MCPAs, the first step should be to develop the first few MCPAs, and the necessary mechanisms to allow future MCPAs and networks to be developed. The goals and objectives of each MCPA should be clearly established when they are created.
2. A strategic planning approach should be adopted at the national and regional levels when developing an ecologically viable framework for MCPA development. This should be based on past experiences in effective management, large-scale factors affecting MCPA viability and long-term goals.
3. Management should focus on ensuring that each MCPA, and the network, are fulfilling the identified goals and objectives. This will require evaluation of effectiveness, and adaptive management over time.
4. Key factors for achieving effective management of MCPAs include good governance, clear legal or customary frameworks to prevent damaging activities, effective compliance and enforcement, ability to control external activities that affect the MCPA, strategic planning, and sustainable financing.
5. Good governance will depend on having one or more bodies, each with the authority and capacity to undertake their responsibilities. When there is more than one body, including, in the case of transboundary areas, bodies in different countries, mechanisms for coordinating and integrating management will be vital.
6. The legal or customary framework should clearly identify:
 - (a) Prohibited activities that will be contrary to the objectives of the MCPA;
 - (b) Those activities which will be allowed with clear restrictions or conditions to ensure that they will not be contrary to the objectives; and
 - (c) A decision-making process for all other activities.
7. Minimizing the number of discretionary activities is desirable in order to minimize potential harmful impacts in the MCPA.
8. Effective enforcement will depend on:
 - (a) Adequate enforcement capacity, including clear responsibilities, inter-agency coordination, trained and equipped personnel and the necessary legal or customary powers;
 - (b) Appropriate penalties and associated legal provisions; and
 - (c) Integration between enforcement, voluntary compliance and management.
9. Governments should be encouraged to urgently address, through appropriate integrated marine and coastal management approaches, all threats, including those arising from the land (e.g., water quality,

⁸ Further elaboration is provided in CBD Technical Document #13.

sedimentation and marine debris), and shipping/transport in order to maximize the effectiveness of MCPAs and the network in achieving their objectives for marine and coastal biodiversity.

10. The AHTEG identified stakeholder participation as essential for achieving the global goal and for the establishment and maintenance of individual MCPAs and regional networks. Stakeholder participation would be particularly important in establishing equitable sharing of benefits accruing from creation of MCPAs. In addition, stakeholder participation would:

- (a) Allow decisions to be made in an inclusive and transparent way;
- (b) Facilitate the involvement in decision-making and management of a wide range of players, increasing the likelihood of success;
- (c) Recognize traditional rights and customs, and other interests of indigenous and local communities and other relevant stakeholders in accordance with national law as appropriate; and
- (d) Allow decisions and management to be undertaken at the appropriate level (e.g., through decentralization).

11. It was recognized that the type and extent of participation will depend on local circumstances, including issues such as the traditional rights, customs and traditions of indigenous and local communities in accordance with national law, available mechanisms and governance approaches, and the degree of interest of stakeholders.

Annex III

IMPROVEMENT OF AVAILABLE DATA FOR ASSESSMENT OF PROGRESS TOWARDS THE GLOBAL GOAL

1. Since 1981, UNEP-WCMC has developed and maintained a global database on protected areas. The importance of this database, which is managed in collaboration with the IUCN World Commission on Protected Areas, has been broadly recognized. Within the database is a subset of clearly identified marine and coastal protected areas.

2. The AHTEG examined available information, consulted UNEP-WCMC (and indirectly WWF-International), and concluded that global data on MCPAs should be improved and/or gathered in the following critical categories:

- (a) **Location** (physical coordinates and country or political unit, including the names of neighbouring country/countries where the MCPA is transboundary);
- (b) **Total size** of the protected area, the relative size of the marine and coastal component and, where transboundary, the total area under country jurisdiction;
- (c) **Temporal aspects** e.g. permanency or seasonality of protection or management;
- (d) **Type of protection and management** proposed or being implemented, using a simple three-tier system:
 - (i) Representative highly-protected areas where extractive uses are excluded;
 - (ii) Additional MCPAs;
 - (iii) Sustainable management practice in the wider coastal and marine environment.

(e) **Effectiveness of protection and management** gauged against the regime being proposed or being implemented, using a simple three-tier system:

- (i) Currently fully effective – no significant problems known;
- (ii) Currently partially effective – some deficiencies;
- (iii) Currently ineffective – significant implementation problems.

(f) **Nationally-designated names** for type of protection and management e.g. marine park, marine and coastal nature reserve, etc.

(g) **Habitats protected and managed** (3D not just benthic).

(h) **Species protected and managed** (3D not just benthic).

(i) **Habitats and species specifically excluded from protection/management within the MCPA** (i.e. that have no legal protection).

(j) **Nature of threats to habitats/species** – see table 1.

(k) **Name and contact details** of person(s) providing the above information and date on which this was done.

3. These data categories are a core set, which would provide the key information needed to evaluate progress, and success. They consist of sufficiently few categories to make data collection rapid, easy and hopefully achievable. They would not only underpin the actions of the Convention in the marine and coastal environments but are also considered to be of value to the wider conservation community at global, regional and national levels.

4. The collection of information on habitats being protected and managed would need to be structured from a standard list. This would speed up and standardize data collection. This would need to consist of no more than 15 categories and would need to take a very high level approach. Such an approach needs to be developed but could use terms such as “coral, sea grass, mangrove, estuary, seamounts, etc.”. A similar approach would need to be taken over high-level categories to collect information on threats. Some first thoughts on such categories are provided in table 1. In both cases, a decision at the time of data collection would need to be made on which categories were relevant. Whilst this may cause difficulty on occasions, ‘fitting’ a site into this proposed management framework, any errors would be insignificant at the network, regional and global scales.

5. Data in other fields currently held within the world database on protected area of proven value to a wider audience, such as the IUCN management categories and GIS boundary data, could also be gathered but are not considered to be as important. IUCN category information will be collected for all sites on the United Nations list and so could be integrated into the above ‘global’ categories.

6. It is also important, in the context of the Convention on Biological Diversity, that additional contextual information be gathered for each signatory country on the nature of their marine and coastal environments. This would provide benchmarks against which data return would be analysed, progress tracked and future Convention policy determined. This information should include:

(a) *Total area of seas under country jurisdiction in km²* in accordance with the United Nations Convention on the Law of the Sea, and the criteria against which this measurement was made (e.g. high water to seaward limit of jurisdiction, low water to seaward limit); and

(b) *Habitat and species inventories.* In order to assess whether adequate action is being taken, habitat and species inventories to establish global extent and distribution will be required.

7. The former would enable coverage of the marine and coastal protected area network being established under the Convention on Biological Diversity at local, regional and global scales to be tracked, whilst the latter would provide a reference point against which to set future priorities for action under the Convention to address deficiencies. Both are essential for assessing achievement of the proposed global goal.

8. UNEP-WCMC and the IUCN World Commission on Protected Areas (WCPA), working in collaboration with UNEP regional seas offices and other relevant bodies, provide a vehicle by which such a consolidation and updating of global data on MCPAs could be achieved. The United States National Oceanographic and Atmospheric Administration currently chairs the WCPA marine programme, and is interested in using its resources and experience of marine and coastal issues to help develop the information base for making decisions on MCPAs.

9. The advent of Internet-based tools will greatly ease data-gathering and increase the accessibility of the information and its analysis to advise on local, regional and global progress and trends. Internet-based initiatives, and the predominate use of drop-down menus when gathering data from managers and practitioners, will also reduce data entry time and provide major advantages for the consistency and coherency, and ultimately reliability, of the dataset that needs to be gathered.

Table 1.

*Examples of six possible high-level categories that could be used globally to structure collection of information on the nature of the principal threats to habitats/species within MCPAs**

<i>High level category</i>	<i>Sub-categories</i>
Physical loss	<ul style="list-style-type: none"> • Removal (e.g. harvesting, draining to create dry land) • Smothering (e.g. by artificial structures, disposal of dredge spoil)
Physical damage	<ul style="list-style-type: none"> • Siltation (e.g. run-off, dredging, outfalls) • Abrasion (e.g. boating, anchoring, trampling) • Selective extraction (e.g. aggregate dredging, entanglement, turf cutting)
Non-physical disturbance	<ul style="list-style-type: none"> • Noise (e.g. boat activity) • Visual (e.g. recreational activity)
Toxic contamination	<ul style="list-style-type: none"> • Introduction of synthetic compounds (e.g. pesticides, antifoulants, PCBs) • Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons) • Introduction of radio nuclides
Non-toxic contamination	<ul style="list-style-type: none"> • Nutrient enrichment (e.g. agricultural run-off, outfalls) • Organic enrichment (e.g. mariculture, outfalls) • Changes in thermal regime (e.g. outfalls, power stations) • Changes in turbidity (e.g. run-off, dredging) • Changes in salinity (e.g. water abstraction, outfalls)

<i>High level category</i>	<i>Sub-categories</i>
Biological disturbance	<ul style="list-style-type: none">• Introduction of microbial pathogens• Introduction of non-native species and translocations• Selective extraction of species (e.g. bait collection, wildfowling, commercial & recreational fishing)

Note: one MCPA could qualify for a number of high-level categories.
