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Item 18.2 of the provisional agenda*

THEMATIC PROGRAMMES OF WORK: REVIEW, FURTHER ELABORATION AND REFINEMENT

The elaborated programme of work on marine and coastal biological diversity

Note by the Executive Secretary

INTRODUCTION

1. The present document contains the elaborated programme of work on marine and coastal biological diversity, which has been produced in response to recommendations VIII/3 A-D of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). In recommendation VIII/3 A, SBSTTA stressed that the programme elements of the programme of work still corresponds to global priorities, and although much progress has been made, the programme of work has not yet been fully implemented. Therefore, SBSTTA recommended that the Conference of the Parties extend the time period of the programme of work by an additional six years, and that an elaboration of the programme of work be undertaken by the Executive Secretary in accordance with paragraph 2 of recommendation VIII/3 A for the consideration of the Conference of the Parties at its seventh meeting.

2. Pursuant to that recommendation, the Executive Secretary, with the assistance of an electronic peer-review group, has produced for the consideration of the Conference of the Parties an elaborated programme of work on marine and coastal biological diversity (see annex I below) by undertaking the following:

(a) Removing activities that have clearly been completed or that have been replaced by actions put forward by subsequent decisions, as indicated in annex II below;

(b) Incorporating new activities into each of the programme elements of the elaborated programme of work as specified in recommendation VIII/3 A, paragraph 2;

(c) Developing outcome-oriented targets as indicated by SBSTTA in its recommendation VIII/3 A, paragraph 2 (i). These targets were presented to SBSTTA at its ninth meeting (UNEP/CBD/SBSTTA/9/14/Add.3), and have been further refined based on comments received from

* UNEP/CBD/COP/7/1 and Corr.1.

Parties for the consideration of the Conference of the Parties. They are available to the Conference of the Parties as a separate document (UNEP/CBD/COP/7/20/Add.5).

3. The elaborated programme of work on marine and coastal biological diversity is presented for the consideration of the Conference of the Parties in annex I to this document. The structure of the programme of work has undergone the following changes:

(a) *Programme elements.* The programme elements have been retained as they were in the original programme of work (decision IV/5, annex), except that a new element on enabling activities has been added as requested in recommendation VIII/3 A, paragraph 2 (h);

(b) *Goals.* Goals have been added for each programme element in order to make the structure of the programme of work more consistent with other existing programmes of work under the Convention;

(c) *Activities.* Those activities that have not been fully implemented, or that are still relevant, have been retained. Those activities that are considered fully implemented have been deleted. Annex I contains information on the status of implementation and ongoing relevance of each operational objective and activity. Based on this information, the annex shows whether an activity is included in the elaborated programme of work, or whether it has been removed because it has already been completed. A number of new activities have been added. These activities come either from recommendations VIII/3 A-D or from the Plan of Implementation of the World Summit on Sustainable Development. In each case, the source of new activities is clearly indicated in parenthesis. In addition, annex III lists relevant activities from the Plan of Implementation and shows how they have been incorporated into the programme of work;

(d) *Ways and means of implementation.* As in the original programme of work, a section on ways and means has been included. This section remains similar to the original in identifying lead actors for the implementation of activities.

4. With these changes, the programme of work not only fully incorporates activities set forward in recommendations VIII/3 A-D, but also the targets and priority actions endorsed by the World Summit on Sustainable Development, including the 2010 target on biological diversity. In addition, the programme of work also has relevance to the Millennium Development Goals. The implementation of the programme of work on marine and coastal biological diversity makes a direct contribution to the achievement of target 9 of the Millennium Development Goals, namely, to integrate principles of sustainable development into country policies and programmes and to reverse the loss of environmental resources. Through its promotion of sustainable fisheries and aquaculture, the programme of work also contributes to target 2, which is to halve, between 1990 and 2015, the proportion of people who suffer from hunger.

5. If the elaborated programme of work is to be effectively implemented, the need for capacity-building and financial resources for developing country Parties, in particular the least developed and small island developing States among them, cannot be overemphasized. Therefore, Parties, other Governments, the financial mechanism, and funding organizations are invited to provide adequate and timely support towards the implementation of this programme of work.

6. The Conference of the Parties may wish to endorse the elaborated programme of work as presented in annex I and its appendices 1-5 below.

Annex I

**DRAFT 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. This goal was agreed upon by SBSTTA in its recommendation VIII/3 A.

C. Goals and targets

3. Once approved, the goals and targets submitted for the consideration of the Conference of the Parties (UNEP/CBD/COP/7/20/Add.5) will be incorporated into this section of the programme of work.

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 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. As stated in decision IV/5, the programme of work is 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**, through regional organizations, arrangements and bodies;

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

6. The involvement of all 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, and to perform an overall coordination role.

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 [New]*

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.
- (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. *[Recommendation VIII/3 A, annex]*
- (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. *[WSSD Plan of Implementation paragraph 30(e)]*
- (d) To promote the identification or establishment of subregional, regional or global 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. *[recommendation VIII/3 A, paragraph 2(f)]*

Ways and means

The activities will be carried out by Parties, assisted by regional and international organizations, and the Executive Secretary. An ad hoc technical expert group on implementation of IMCAM (recommendation VIII/3, 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*[New]

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. [WSSD Plan of Implementation paragraphs 33(d) and 32(c)]

Ways and means

The activities will be carried out by Parties and 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 will assist 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.*

Activities

- (a) To promote the development of sets of 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. [WSSD Plan of Implementation paragraph 36(b)]

Ways and means

The Executive Secretary will take a lead role in implementation of activities (a) on the global level, (b), (e), (f), and (g). Parties will implement (a), (b), (c), (d), and (e) on the national level, 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 sustainable use of marine and coastal living resources

Operational objective 2.1: To promote ecosystem approaches to the 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.

Activities

- (a) To develop collaborative links with relevant organizations and institutions.
- (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 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 and the guidance associated with the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem. [*WSSD Plan of Implementation paragraph 31(c)*]
- (h) To eliminate destructive fishing practices and maintain and restore fisheries stocks to sustainable levels. [*WSSD Plan of Implementation paragraphs 32(c) and 31(a)*]
- (i) To maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including areas within and beyond national jurisdiction. [*WSSD Plan of Implementation paragraph 32(a)*]
- (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 will be carried out by Parties and regional and international organizations. The Executive Secretary will assist in implementation, and will carry out activity (f).

Operational objective 2.2: To make available to the Parties information on marine and coastal genetic resources, including bioprospecting.

Activities

- (a) To compile and synthesize, in consultation with Parties and other Governments and in collaboration with relevant international organizations, such as the United Nations Division for Ocean Affairs and the Law of the Sea, the United Nations Environment Programme, the International Seabed Authority and the Intergovernmental Oceanographic Commission of the United Nations Educational, Cultural and Scientific Organization, information on the status and trends of deep sea bed genetic resources and on methods to identify, assess and monitor genetic resources of the deep seabed in areas beyond the limits of national jurisdiction, including identification of threats to such genetic resources and the means for their protection, with a view to addressing processes and activities under Article 4 (b) of the Convention. [*Recommendation VIII/3D, paragraph (a)*]

(b) 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 comply with Article 3 of the Convention. [*Recommendation VIII/3D, paragraph (c)*]

Ways and means

The Executive Secretary in collaboration with relevant international and regional organizations (as detailed in activity (a)) will take a lead role in implementation of activity (a). As indicated, activity (b) will be carried out 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 and implementation strategies to address: (i) the biological and socio-economic consequences of physical degradation and destruction of tropical and cold-water coral-reef 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 and rehabilitate damaged coral reef; and in particular (ii) the impacts of 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.

Activities

Activities on coral bleaching and physical degradation and destruction of coral reefs as adopted in decision VI/3 are contained in appendices 1 and 2 below.

Ways and means

The activities will be carried out by Parties and regional and international organizations. The Executive Secretary will 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.

Programme element 3: Marine and coastal protected areas

Goal: To establish and maintain marine and coastal protected areas that are effectively managed, ecologically based and contribute to a permanent representative global network of marine and coastal protected areas, building upon national networks, 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. [*Recommendation VIII/3 B., paragraph 8*]

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

Activities:

(a) To establish, as a matter of high priority and urgency, an effective marine and coastal biodiversity management framework, covering all areas subject to national jurisdiction, including the exclusive economic zone and continental shelf areas and deep sea basins, incorporating the elements set out in appendix I below, including by establishing new marine and coastal protected areas and by improving the effectiveness of existing marine and coastal protected areas. Such a marine and coastal biodiversity management framework would comprise sustainable management practices and actions to

protect biodiversity over the wider marine and coastal environment, including an integrated MCPA network consisting of:

- (i) Representative 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; and
- (ii) Other marine and coastal protected areas which may complement the biodiversity objectives of the areas referred to in (i), where threats are managed for the purpose of biodiversity conservation and/or sustainable use and thus where extractive uses may be allowed;

The balance between category (i) and (ii) MCPAs would be selected by country and that in selecting an appropriate balance the country should take into account that certain objectives such as scientific reference areas can only be achieved through the establishment of category (i) marine and coastal protected areas. *[Recommendation VIII/3 B, paragraphs 10 – 12]*

(b) To identify, in collaboration with the United Nations Division for Ocean Affairs and the Law of the Sea, the International Seabed Authority, the International Maritime Organization, regional seas conventions and action plans, the Food and Agriculture Organization of the United Nations, regional fisheries organizations, the Intergovernmental Oceanographic Commission (IOC) of UNESCO, and other relevant organizations, appropriate mechanisms for the establishment and management of marine and coastal protected areas beyond national jurisdiction, due to the urgent need to establish such MCPAs, consistent with international law, and based on scientific information, including in relation to seamounts, hydrothermal vents, cold water corals and open ocean. *[Recommendation VIII/3 B, paragraph 20]*

Ways and means

Activity (a) will be carried out by Parties and regional and international organizations. The Executive Secretary will assist in its implementation. The Executive Secretary will collaborate with the organizations referred to in activity (e) in order to facilitate its implementation. Further elaboration of the elements of the biodiversity management framework is provided in appendix 3 below.

Operational objective 3.2: To achieve effective management of existing MCPAs *[New]*

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. *[Recommendation VIII/3 B, paragraph 14]*

(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. *[Recommendation VIII/3 B, paragraph 15]*

(c) To facilitate relevant stakeholder and indigenous and local community participation as an essential component of implementing operational objective 3.2. *[Recommendation VIII/3 B, paragraph 16]*

Ways and means

The activities will be carried out by Parties and regional and international organizations. The Executive Secretary will facilitate their implementation.

Operational objective 3.3: To provide support for and facilitate monitoring of national and regional systems of MCPAs [*New*]

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. [*Recommendation VIII/3 B, paragraph 24*]

(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. [*Recommendation VIII/3 B, paragraph 27*]

Ways and means

The activities will be carried out by funding agencies, Parties and regional and international organizations, such as UNEP-WCMC. The Executive Secretary will facilitate their implementation.

Operational objective 3.4: To facilitate research and monitoring activities that reflect identified global knowledge gaps and priority information needs of MCPA management. [*New*]

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. [*Recommendation VIII/3 B, paragraph 22*]

(b) To identify and implement an appropriate mechanism for developing advice related to network design and ecological coherence of networks. [*Recommendation VIII/3 B, paragraph 26*]

(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 network of marine protected areas. [*Decision IV/5, annex*]

Ways and means

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

Programme element 4: Mariculture

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

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

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/minimize by-catch in cases where seed are collected from nature;
- (vii) Use of local species and subspecies in mariculture, noting that use of non-indigenous species may be appropriate in some circumstances;
- (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/minimize by-catch.
- (xiii) Considering traditional knowledge, where applicable as a source to develop sustainable mariculture techniques. [*Recommendation VIII/3 C, paragraphs 5 and 6*]

(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. [*Recommendation VIII/3 C, paragraph 7*]

(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. [*Recommendation VIII/3 C, paragraph 8*]

(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. [*Recommendation VIII/3 C, paragraph 11*]

Ways and means

Activities (a) and (b) will be carried out by Parties, with assistance from regional and international organizations (such as the FAO) and the Executive Secretary. The Executive Secretary will take a lead role in carrying out activity (c). Activity (d) will be carried out by Parties, regional and international organizations, including research organizations. The Executive Secretary will facilitate its undertaking.

Programme element 5: Alien species and genotypes

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

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

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 will 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. [*New*]

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. *[Recommendation VIII/3 A, paragraph 2(c)]*

(b) 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.

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

Ways and means

The activities will 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 and genotypes

Activities

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

Ways and means

The Executive Secretary will 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

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 will 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.

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. *[New]*
- (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. *[Recommendation VIII/3 A, paragraph 2(e)]*

Ways and means

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

IV. ENABLING ACTIVITIES

- (a) Provision of assistance to coastal States in developing ocean policies and mechanisms for integrated management. *[WSSD Plan of Implementation paragraph 30(e)]*
- (b) 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. *[Priority identified by Parties – see document UNEP/CBD/SBSTTA/8/9]*
- (c) Provision of assistance to coastal 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. *[WSSD Plan of Implementation paragraph 30(g)]*
- (d) 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. *[Recommendation VIII/3 A, paragraph 2(h)]*
- (e) 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. *[WSSD Plan of Implementation, paragraph 36(a)]*
- (f) 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. *[WSSD Plan of Implementation, paragraph 36(c)]*
- (g) Undertaking capacity building, technology transfer, public education and awareness, and training in order to improve the implementation of this programme of work. *[Priority identified by Parties]*
- (h) Urgent mobilisation 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. *[from document UNEP/CBD/SBSTTA/8/9 and WSSD Plan of Implementation paragraph 32(b)]*
- (i) Continued review of obstacles to implementation of each programme element leading to development of additional enabling activities, as appropriate, aimed at overcoming such obstacles.

Ways and means

The Executive Secretary will collaborate with funding agencies, international and regional organizations and Parties to facilitate the implementation of these activities.

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

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.

1. Information gathering

(a) **Implement and coordinate targeted research programmes, including predictive modelling, that investigate: (1) the tolerance limits and adaptation capacity of coral-reef species to acute and chronic increases in sea-surface temperature; (2) the relationship among large-scale coral-bleaching events, global warming, and the more localized threats that already place reefs at risk; and (3) the frequency and extent of coral-bleaching and related mortality events, as well as their impacts on ecological, social and economic systems.**

Ongoing initiatives

- (i) The “Ad Hoc Study Group on Indicators of Coral Bleaching and Subsequent Effects” was established September 2000 under the auspices of IOC/UNESCO with three major objectives: to develop possible molecular, cellular, physiological, and community indicators of coral bleaching that are reliable in their ability to detect early stress signals; examine potential mechanisms of reef corals for adaptation/acclimatization to global environmental change; investigate long-term response of reef corals to large scale changes in environmental variables. The group will meet annually for three years and distribute findings through annual reports and a final publication.
- (ii) The Global Coral Reef Monitoring Network (GCRMN) is a global network of coral reef scientists, Governments and local communities for monitoring and assessment of coral reefs, in terms of both biophysical and socio-economic parameters needed for management. GCRMN is co-hosted by the Australian Institute of Marine Science and the World Fish Center (ICLARM). ICLARM also host ReefBase, the official database of GCRMN, with data of over 8,000 coral reefs over the world. UNEP, together with IOC/UNESCO, is a sponsor of the GCRMN and a member of the GCRMN Management Group and the GCRMN Scientific and Technical Advisory Committee.
- (iii) GCRMN has developed a comprehensive Status of Coral Reefs of the World report to be updated every two years, with the most recent edition published in October 2000.
- (iv) UNEP, through GCRMN, emphasizes the importance of monitoring socio-economic parameters to achieve sustainable use of coral reef ecosystems. A socio-economic manual has recently been developed (October 2000) for monitoring of these parameters for enhanced management capacity.
- (v) Contributing to GCRMN are existing regional projects. Regional coral reef monitoring networks within GCRMN exist for the Indian Ocean and the Wider Caribbean funded by World Bank, with the goal of assisting in the conservation of the rich biodiversity of coral reefs and their socio-economic value, and in the sustainable management of their resources, through a monitoring network.
- (vi) Under the International Coral Reef Action Network (ICRAN), the World Conservation Monitoring Centre (WCMC) and ICLARM are exploring the integration and availability of map-based products through the WCMC website and through ReefBase.

- (vii) Some projects within the CORDIO programme in the Indian Ocean region focus on determining the socio-economic impacts of coral mortality and options for mitigating these through management and development of alternative livelihoods.

Specific tasks in addition to ongoing initiatives

- (i) Provide scientific information on the survival of reef-building corals under global warming to allow some prediction of the adaptation and survival of the biological diversity of coral reefs in coming decades;
- (ii) Compile information on existing networks, databases and websites which can provide up-to-date information of the status of coral reefs and their threats; and assess the quality of the data they contain and methodologies used for data collection and analysis;
- (iii) Strengthen networks for data collection and dissemination of information on coral-reef status and interpretation of long-term trends resulting from global climate change and anthropogenic stresses to assist effective management and conservation;
- (iv) Develop further target research programmes that investigate the impacts of coral bleaching and coral mortality events on social and economic systems;
- (v) See activity (k) (i) below.
- (b) **Implement and coordinate baseline assessments and long-term monitoring to measure the biological and meteorological variables relevant to coral bleaching, mortality and recovery, as well as the socio-economic parameters associated with coral-reef services.**

Ongoing initiatives

- (i) The objectives of the Ad Hoc Study Group on Indicators of Coral Bleaching and Subsequent Effects under activity (a) above include the identification of biological indicators that would facilitate long-term monitoring.
- (ii) GCRMN currently serves as a network for coral reef assessments and monitoring of biological variable relevant to coral bleaching, mortality and recovery, as well as many socio-economic parameters associated with coral-reef services (see activity (a)).
- (iii) Data repository and dissemination systems such as ReefBase may offer time-line biological data.
- (iv) GCRMN, in coordination with the World Bank, IUCN, the Australian Institute of Marine Science and UNEP regional seas programmes is targeting existing or planned marine protected areas as the focus of some of their monitoring activities. The sites may offer valuable baseline data and serve for long-term monitoring.
- (v) GCRMN is currently developing rapid assessment methodology for socio-economic and biophysical parameters in the Eastern African region, especially for use in developing countries where limited resources do not always allow for regular high-intensive monitoring.
- (vi) The UNEP Division of Environmental Information, Assessment and Early Warning coordinates a variety of information available from remote sensing technologies and organizations that facilitates dissemination of such information. They are well suited to coordinate assessment of meteorological variables relevant to coral bleaching, mortality and recovery.
- (vii) WCMC and ICLARM are exploring the integration and availability of map-based products through the WCMC website and through ReefBase.

Specific tasks in addition to ongoing initiatives

- (i) Identify pilot projects that establish training programmes and survey protocols and enhance availability of expert advice at a range of scales, including classification of scale data.
- (ii) Support ongoing assessment and monitoring initiatives, such as those of UNESCO, ICRAN, the regional seas conventions and action plans, GCRMN, UNEP and CORDIO.
- (c) **Develop a rapid response capability to document coral bleaching and mortality in developing countries and remote areas including establishment of training programmes, survey protocols, expert advice, and contingency fund or rapid release of special project funding.**

Ongoing initiatives

- (i) The objectives of the Ad Hoc Study Group on Indicators of Coral Bleaching and Subsequent Effects referred to under activity (a) above include the identification of physiological early-stress indicators in corals.
- (ii) The Sida-SAREC and World Bank programme on coral-reef degradation in the Indian Ocean, was initiated as a response to the 1998 coral-bleaching event (CORDIO).
- (iii) GCRMN is currently developing rapid assessment methodology for socio-economic and biophysical parameters in the Eastern African region, especially for use in developing countries where limited resources do not always allow for regular high-intensive monitoring (ReefCheck).
- (iv) Within the ICRAN strategic plan, it is intended that these capabilities will be developed and made widely available.
- (v) The UNEP Division of Environmental Information, Assessment and Early Warning coordinates a variety of information available from remote sensing technologies and organizations that facilitates dissemination of such information.

Specific tasks in addition to ongoing initiatives

- (i) Develop standardized training modules and manuals on detection and documentation of coral-bleaching events, mortality or recovery monitoring
- (ii) Organize annual meetings in each region on coral-reef assessment and monitoring methods with particular emphasis on documenting coral bleaching, bleaching related mortality and subsequent recovery. These should be integrated into existing programmes, where possible (regional seas conventions and actions plans may have the best capacity to implement these measures).
- (d) **Encourage and support countries in the development and dissemination of status-of-the-reefs reports and case-studies on the occurrence and impacts of coral bleaching and related mortality.**

Ongoing initiatives

- (i) GCRMN has developed a comprehensive *Status of Coral Reefs of the World* report to be updated every two years, with the most recent edition published in October 2000. This report is largely based of national and regional contributions.
- (ii) The Secretariat of the Convention on Biological Diversity, in accordance with decision V/3, paragraph 7, invited Parties to submit case-studies for dissemination through the clearing-house mechanism. The national reporting mechanism of the

Convention on Biological Diversity facilitates the collection of information on the status of coral reefs and case-studies on the occurrence and impacts of coral bleaching.

- (iii) The CORDIO Status Report 2000 offers reporting opportunities on the status of the reefs for Indian Ocean countries. The dissemination of this information through the CORDIO newsletter has facilitated further communication and coordination on local impacts.

Specific tasks in addition to ongoing initiatives

- (i) Support and expand existing networks and initiatives at the regional and national level conducting coral-reef status assessments and monitoring.
- (ii) Strengthen dissemination of existing assessment and monitoring information on status of coral reefs and their threats through existing networks (Under the ICRAN strategic plan, this is a core role of GCRMN and ReefBase).
- (e) **Extend the use of early-warning systems for coral bleaching by:**
 - (i) **Enhancing current NOAA AVHRR Hot Spot mapping by increasing resolution in targeted areas and carry out ground-truth validation exercises;**
 - (ii) **Encouraging space agencies and private entities to maintain deployment of relevant sensors and to initiate design and deployment of specialized technology for shallow-oceans monitoring;**
 - (iii) **Making the products of remote sensing readily accessible at low cost to coral-reef scientists and managers worldwide with a view to those scientists and managers that are based in developing countries.**

Ongoing initiatives

- (i) The UNEP Division of Environmental Information, Assessment and Early Warning coordinates a variety of information available from remote sensing technologies and organizations that facilitates dissemination of such information.
- (ii) Under the ICRAN, WCMC and ICLARM are exploring the integration and availability of map-based products through the WCMC website and through ReefBase that include satellite and aerial imagery.

Specific tasks in addition to ongoing initiatives

- (i) Expand the use of existing early warning systems (e.g. NOAA early warning mapping) and support the development of Web-based early warning systems.
- (ii) Develop local community capacity for remote and local level validation exercises.
- (iii) Develop mechanisms to make accessible high-resolution multi-spectrum imagery worldwide.

2. Capacity-building

- (f) **Support the training of and career opportunities for marine taxonomists, ecologists, and members of other relevant disciplines, particularly at the national and regional level.**

Ongoing initiatives

- (i) Various ongoing training activities not necessarily related to coral bleaching but to coral conservation issues, e.g. the Ramsar Wetlands for the Future training initiative for Latin America and the Caribbean; the regional seas programme for Caribbean protected areas managers; various activities supported by aid agencies and global and regional development banks.
- (ii) Many other training activities are carried out as components of wider projects and programmes. GCRMN is building capacity for coral-reef monitoring and assessments through training workshops, especially in developing countries.

Specific tasks in addition to ongoing initiatives

- (i) Further incorporate or support the issue of coral reefs and bleaching in the capacity building activities of multilateral environmental agreements (e.g. Ramsar Convention, Cartagena Convention) and of their respective contracting parties.
- (ii) Develop standardized training modules and manuals on detection and documentation of coral-bleaching events and subsequent recovery.
- (iii) Organize annual meetings in each region on coral-reef assessment and monitoring methods with particular emphasis on documenting coral bleaching, bleaching related mortality and subsequent recovery. These should be integrated into existing programmes, where possible.
- (iv) Create scholarship trust funds in each region of the regional seas programmes to provide scholarships at graduate/postgraduate level to at least two people per region to undertake studies on coral-reef ecology and management.
- (v) Promote exchange programmes between countries and/or regions.
- (vi) Promote further coordination and collaboration of ongoing regional activities.
- (vii) Promote the inclusion in national reports under the regional seas conventions, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change a section for reporting of ecological and socio-economic impacts of coral-bleaching events.
- (viii) Add coral bleaching to the national biodiversity strategies and action plans under the Convention on Biological Diversity.
- (g) **Encourage and support multidisciplinary approaches to coral-reef research, monitoring, socio-economics and management.**

Ongoing initiatives

- (i) ICRI and GCRMN activities are intended to encourage and support multidisciplinary approaches to coral reef research, monitoring, socio-economics and management.
- (ii) Regional seas programmes through the ICRAN strategic plan and existing programmes like CORDIO, and the UNEP Caribbean Environment Programme are increasing regional capacity towards monitoring, socio-economics and management, as related to coral bleaching. The four regions currently active under the ICRAN strategic plans are South—East Asia, Pacific, Caribbean and Eastern Africa.

Specific tasks in addition to ongoing initiatives

- (i) Develop a formal network of agencies in developed and developing countries, which agree to an annual exchange of staff in areas relevant to coral-reef management.
- (ii) Gather and assimilate information on existing training programmes on integrated coastal area management, best practices and related issues to sustainable management of coral reefs.
- (iii) Develop and/or expand training opportunities for fishers, protected area managers and related marine resource managers at the national and regional levels, on resource assessment, monitoring, user impact, ecosystem approaches to marine and coastal resource management, surveillance and enforcement, local community integration, and in setting and measuring the achievement of management performance goals and indicators.
- (iv) See activity (k) (ii) below.

(h) Build stakeholder partnerships, community participation programmes, and public-education campaigns and information products that address the causes and consequences of coral bleaching.*Ongoing initiatives*

- (i) ICRI and the International Tropical Marine Ecosystems Management Symposium (ITMEMS) are building the foundation of new ICRI action.
- (ii) A number of existing education and capacity-building projects within the regional seas programmes serve to raise awareness regarding coral bleaching.
- (iii) IUCN, the Secretariat of the Convention on Biological Diversity, USAID and WWF have produced a publication *Management of Bleached and Severely Damaged Coral Reefs*, to contribute to effective and immediate management action to aid reef protection and regeneration, and to enhance research to develop the necessary tools and measures for long-term success. In addition, the publication is intended to raise awareness of the urgent need to take all possible actions to reduce the impact of climate change on coral reefs.
- (iv) The WWF approach to worldwide coral reef conservation (CoralWeb): training of resource managers, increasing education, raising awareness, and implementing site-based reef management projects to help groups of stakeholders achieve their goals in reef management and sustainable economic development, including through the development of alternatives to destructive practices.
- (v) The International Coral Reef Information Network (ICRIN) is the primary public awareness mechanism of the ICRI, and thus serves to disseminate public information products that address the causes and consequences of coral bleaching.

Specific tasks in addition to ongoing initiatives

- (i) “Bridge the gap between global and local action through the creation of national and sub-regional coral-reef initiatives” (see ICRI and the International Tropical Marine Ecosystems Management Symposium on Building the Foundation of New ICRI Action).
- (ii) Package relevant information from status-of-reefs reports, *Reefs at Risk*, etc., into effective practical materials for general public, the media, private sector and policy makers

3. Policy development / implementation

(i) **Use existing policy frameworks to implement the multiple conservation measures outlined in the Renewed Call to Action of the International Coral Reef Initiative, and develop and implement comprehensive local-to-national-scale integrated marine and coastal area management plans that supplement marine protected areas.**

Ongoing initiatives

As an example, relevant regional activities within the Wider Caribbean are carried out, *inter alia*, in the framework of:

- The Cartagena Convention and its protocols on oil spills, land-based sources of marine pollution and specially protected areas and wildlife
- Regional ICRI Framework for Action
- Association of Caribbean States (ACS)
- Central American Commission on Environment and Development (CCAD)
- CARICOM

Specific tasks in addition to ongoing initiatives

- (i) Assess relevant actions of existing frameworks and how these are directly addressing the integrated marine and coastal areas management, in particular coral-reef issues.
 - (ii) Integrate in existing policies at the regional and national levels the priority issues identified by ICRI and the International Tropical Marine Ecosystems Management Symposium (ITMEMS).
 - (iii) Make use of the regional seas programmes and other regional agreement (i.e. shipping, fisheries, trade and land-based sources of marine pollution) as vehicles to develop and implement policies related to coral-reef management and protection.
- (j) **Identify and institute additional and alternative measures for securing the livelihoods of people who directly depend on coral-reef services.**

Ongoing initiatives

Some projects within the CORDIO programme in the Indian Ocean region focus on determining the socio-economic impacts of coral mortality and options for mitigating these through management and development of alternative livelihoods. Development is needed of further target research projects that investigate the impacts of coral bleaching and mortality events on social and economic systems in other regions.

Specific tasks in addition to ongoing initiatives

- (i) Compile information on the socio-economic impacts of coral bleaching on communities dependent on coral reefs.
- (ii) Support and expand existing projects that assess the impacts of coral bleaching on communities dependent on coral reefs, such as the CORDIO project in the Indian Ocean.
- (iii) Develop pilot projects for transitioning dependent communities to alternative and sustainable livelihoods.

(k) Initiate efforts to develop joint actions among the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the Convention on Wetlands to:

- (i) Develop approaches for assessing the vulnerability of coral-reef species to global warming;**
- (ii) Build capacity for predicting and monitoring the impacts of coral bleaching and related mortality;**
- (iii) Identify approaches for developing response measures to coral bleaching;**
- (iv) Provide guidance to financial institutions, including the Global Environment Facility (GEF), to support such activities.**

Ongoing initiatives

- (i) The Executive Secretary has transmitted the view to the United Nations Framework Convention on Climate Change (UNFCCC) that there is significant evidence that climate change is a primary cause of the recent and severe extensive coral bleaching, and that this evidence is sufficient to warrant remedial measures being taken in line with the precautionary approach. In this regard, the Secretariat of the Convention on Biological Diversity, the Secretariat of the UNFCCC, and the Intergovernmental Panel on Climate Change (IPCC) have initiated dialogue to explore the integration of biological diversity concerns into the implementation of the UNFCCC and its Kyoto Protocol.
- (ii) GEF Caribbean project on climate change adaptation (CPACC project).

Specific tasks in addition to ongoing initiatives

- (i) Promote and implement joint work plans with other relevant agreements, organizations and initiatives, including the Commission on Sustainable Development, FAO, regional seas conventions and action plans, regional trade and economic organizations, the Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities, ICRI and the Man and Biosphere Programme. In particular, assess and coordinate activities that have been agreed within multilateral environmental agreements about coral reefs.
 - (ii) Gather the outputs of the Caribbean GEF project on climate change adaptation (CPACC project) as a contribution to activities (k) (i)-(iv) above, and disseminate relevant findings through the clearing-house mechanism and other mechanisms.
 - (iii) Further development of response measures to coral bleaching and potential guidance to financial institutions, including the GEF may be needed.
- (l) Encourage FAO and regional fisheries organizations to develop and implement measures to assess and mitigate the impacts of sea-surface temperature rise on fisheries.**

Specific tasks

- (i) Investigate potentially deleterious effects of changes in oceanographic patterns and resulting impacts on target fish stocks resulting from sea-surface temperature rise.
- (ii) Establish no-fishing zones and limitation on fishing gear to protect breeding grounds and provide fish with a refuge.
- (iii) Enforce legislation prohibiting destructive fishing practices that further damage coral-reef ecosystems.

- (iv) Investigate strategies for management of coral-reef fisheries that are demonstrably sustainable with respect to fished stocks and the ecosystems that produce them (in collaboration with FAO).

(m) Emphasize that coral bleaching can be monitored as an early warning of the impacts of global warming on marine ecosystems and that the collapse of coral-reef ecosystems could impact ecological processes of the larger marine system of which coral reefs are a part.

Specific tasks

- (i) Recognizing that coral bleaching is a cumulative stress response (i.e. global warming is the most widespread stressor, but known human induced stresses exacerbate events), develop education programmes addressing an ecosystem approach to coral-reef management and the relation between ecological parameters of coral reefs, sea-surface temperature rise and other human-induced stresses.
- (ii) Investigate the relationship between coral-bleaching events and long-term meteorological data.
- (iii) Develop educational programmes on the relationship between coral reefs and larger marine systems (e.g. impacts of coral-reef loss on fisheries, local communities etc).

(n) Emphasize the interdependencies and uncertainties in the relationships among marine, terrestrial, and climatic systems.

4. Financing

(o) Mobilize international programmes and mechanisms for financial and technical development assistance, as well as national and private sources to support implementation.

Specific tasks

- (i) Promote programmes that identify the relationships among financial and technical development assistance and environmental project funding.
- (ii) Identify financial and technical assistance mechanisms of national and private sources to assistance communities impacted by coral bleaching.

Appendix 2

ELEMENTS OF A WORK PLAN ON PHYSICAL DEGRADATION AND DESTRUCTION OF CORAL REEFS

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 ^{1/}**

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 an insurance/precautionary 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 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 an integrated MCPA network consisting of:
 - (a) Representative 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; and
 - (b) Other marine and coastal protected areas which may complement the biodiversity objectives of the areas referred to in (i), where threats are managed for the purpose of biodiversity conservation and/or sustainable use and thus where extractive uses may be allowed.
6. The balance between category (i) and (ii) MCPAs in the previous paragraph would be selected by the country and when selecting an appropriate balance the country should take into account the advice of the AHTEG that certain objectives such as scientific reference areas can only be achieved through the establishment of category (i) MCPAs.
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

^{1/} From recommendation VIII/3 B, annex IV.

establishment and management of MCPAs as well as opportunities to protect and promote the use of their knowledge, innovations and practices.

C. *Representative areas from which extraction is excluded*

8. 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 our management. But they will also contribute to other objectives, including socio-economic well-being, sustainable use of fisheries in adjacent areas, and public enjoyment.

9. They should represent all ecosystems and contain examples of all marine biodiversity. They should contain sufficient area and replicates to ensure that they can fulfil their objectives and be ecologically viable over time. The AHTEG was unable to identify any simple formula for identifying whether such areas are representative, as this will depend on local circumstances (e.g., variability in habitats). Nevertheless, 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.

10. Protection from human impacts would mean that any removal 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), 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.

11. These MCPAs would be permanent. 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).

12. 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.

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

D. *MCPAs where extractive uses are permitted*

14. 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.

15. 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.

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 between MCPAs.

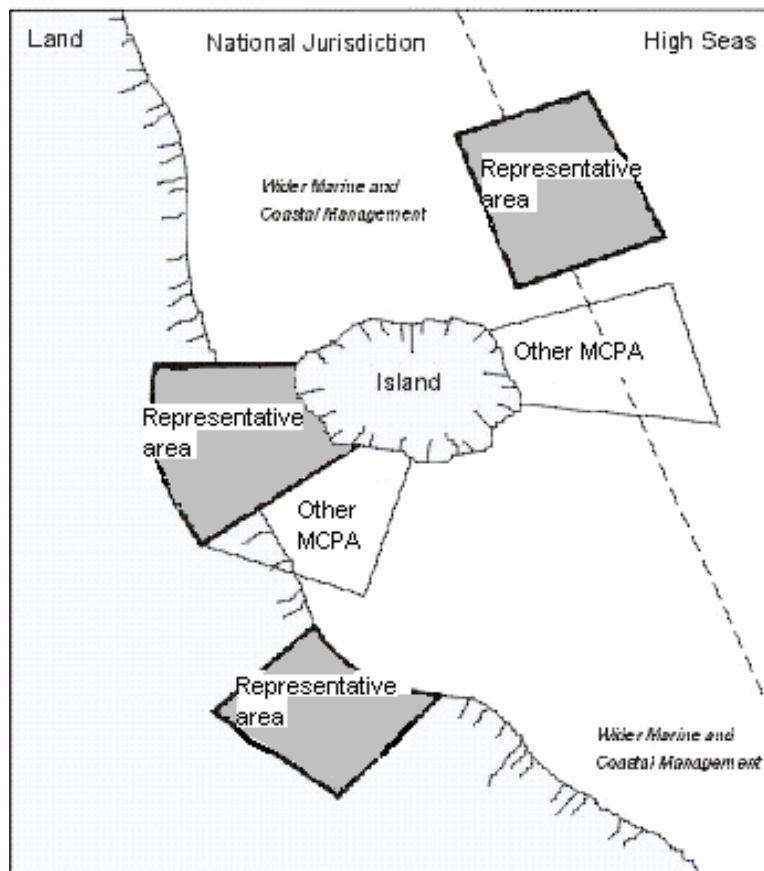
F. International support for creation and management of MCPA networks

18. The AHTEG identified a large number of 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.

ELEMENTS OF THE MARINE AND COASTAL BIODIVERSITY MANAGEMENT FRAMEWORK



Appendix 4

**RESEARCH PRIORITIES, INCLUDING RESEARCH AND MONITORING PROJECTS
ASSOCIATED WITH PROGRAMME ELEMENT 3: MARINE AND COASTAL
PROTECTED AREAS ^{2/}**

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 network 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.

^{2/} From recommendation VIII/3 B, annex I.

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.

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 3/**

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;
- (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;

3/ From recommendation VIII/3 C, annex.

- (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;
 - (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

**STATUS OF PROGRAMME ELEMENTS FROM DECISION IV/5, ANNEX, AND THEIR INCORPORATION
INTO THE ELABORATED PROGRAMME OF WORK**

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
1. Implementation of integrated marine and coastal area management (IMCAM)	1.1 To review the existing instruments relevant to IMCAM and their implication for the implementation of the Convention	(a) To identify existing mechanisms and instruments relevant to IMCAM	Completed (UNEP/CBD/COP/5/INF/6 and UNEP/CBD/COP/6/INF/32)	No
		(b) To identify focal points for the implementation of IMCAM at different levels (national, regional and global)	Completed	No
		(c) Secretariat to gather, compare and analyse information provided by the focal points	Completed in the context of national reports analysis on implementation of IMCAM	No
		(d) To convene meetings involving representatives of stakeholders at different levels	Will be further undertaken as part of the AHTEG on implementation of IMCAM	No
	1.2 To promote the development and implementation of IMCAM at the local, national and regional level	(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	Yes- this is a key activity for implementing IMCAM and it has not been fully implemented globally	Yes
		(b) To promote the identification or establishment of subregional, regional or global processes for developing advice on the application of IMCAM and issues identified under the operational objective	This activity is still relevant	Yes
		(c) 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	This activity is still relevant	Yes

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		resources		
		(d) To promote action to reduce and control sea-based sources of pollution	This activity is still relevant	Yes
		(e) To assist the development of national and regional capacity-building	This activity is still relevant	Yes
		(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	This activity is still relevant	Yes
		(g) To assist the development of appropriate education and public awareness programmes at all levels	This activity is still relevant	Yes
		(h) To provide guidance on maintenance and wider application of local and traditional knowledge	This activity is still relevant	Yes
	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.	(a) To promote the development of sets of indicators on which to base decision-making; and convene regional workshops to help select key indicators	Ongoing activity and still relevant	Yes
		(b) To identify existing organizations and initiatives	Partially implemented, but still relevant	Yes
		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, <i>inter alia</i> , coral reef systems	This activity is still relevant	Yes

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		(d) To promote the establishment or strengthening of mechanisms for research, monitoring and assessment of marine and coastal ecosystems and their living resources	This activity is still relevant	Yes
		(e) To promote exchange of information and experience using the clearing-house mechanism and other appropriate mechanisms	This activity has been partially implemented but continues to be relevant	Yes
		(f) To collaborate with relevant organizations in the preparation of guidelines	This activity is ongoing	Yes, but should be slightly modified to read “preparation and application of guidelines”
2. Marine and coastal living resources	2.1 To promote ecosystem approaches to the 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.	(a) To develop collaborative links with relevant organizations and institutions	Ongoing and relevant activity	Yes
		To promote the exchange of information and experience using appropriate mechanisms	Ongoing and relevant activity	Yes
		To promote the identification and development of ecosystem approaches compatible with the sustainable use of marine and coastal living resources	Ongoing and relevant activity	Yes
		To promote the identification both of components of the ecosystems which are critical to the functioning of the ecosystem and of key threats	Ongoing and relevant activity	Yes
		To promote capacity-building at local, national and regional levels, including local and traditional knowledge	Yes	Yes

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		To carry out a study on the effects of stock enhancement on marine and coastal biological diversity at the species and genetic levels	Partially covered by mariculture AHTEG (document UNEP/CBD/SBSTTA/8/INF/7), but a more detailed study is needed.	Yes
	2.2 To make available to the Parties information on marine and coastal genetic resources, including bioprospecting	To explore ways to expand the knowledge base on which to make informed and appropriate decisions about how this area might be managed in accordance with the objectives of the Convention	Partially completed (see document UNEP/CBD/SBSTTA/8/INF/3/REV1) but more work is still needed on this emerging issue	Yes – should be replaced with the more up-to-date activities in recommendation VIII/3 D
	2.3 To gather and assimilate information on, build capacity to mitigate the effects of, and to promote policy development and implementation strategies to address: (i) the biological and socio-economic consequences of physical degradation and destruction of tropical and cold-water coral-reef 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 and rehabilitate damaged coral reef; and in particular (ii) the impacts of 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	See work plans on coral bleaching and physical degradation and destruction of coral reefs	Ongoing activity	Yes

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
3. Marine and coastal protected areas	To facilitate research and monitoring activities related to the value and the effects of marine and coastal protected areas or similarly restricted management areas on sustainable use of marine and coastal living resources	(a) To collaborate with relevant organizations in the preparation of project proposals	Value and effects of MCPAs on sustainable use of living resources has been subject to extensive research. Much of this research was reviewed in document UNEP/CBD/AHTEG-MCPA/1/2. An updated version of this document was presented to SBSTTA as document UNEP/CBD/SBSTTA/8/INF/12. SBSTTA adopted in recommendation VIII/3.B a set of research priorities, including pilot protects, which correspond to updated global priorities and can be used to update this activity.	No – could be replaced by new research priorities from recommendation VIII/3 B, as these reflect current knowledge gaps
		(b) To work with relevant organizations to identify pilot projects	See above	See above
		(c) To conduct a desk study to gather and assimilate information	Completed (see document UNEP/CBD/AHTEG-MCPA/1/2)	No
		(d) To facilitate Parties, countries or international/regional organizations in conducting research on the effects of marine and coastal protected or closed areas on population size and dynamics, subject to national legislation	See (a) and (b) above	See (a) and (b) above
	3.2: To develop criteria for the establishment of, and for management aspects of, marine and coastal protected areas	(a) To compile research findings on aspects of marine and coastal protected areas relevant to their selection, design, establishment and management	Completed (see documents UNEP/CBD/SBSTTA/8/INF/7 and UNEP/CBD/SBSTTA/8/INF/11)	No, although updates regarding new research findings should be reported on, and this can be accomplished in the context of the identified research priorities in recommendation VIII/3 B, annex I
		(b) To assist in developing criteria for selection of marine and coastal protected areas, where critical habitats for marine living resources should be one important criterion	Completed (see documents UNEP/CBD/SBSTTA/8/INF/7 and UNEP/CBD/SBSTTA/8/INF/11), although more detailed technical advice on network design is still needed (recommendation VIII/3.B paragraph 26).	No, but can be replaced with text in recommendation VIII/3 B, paragraph 26

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		(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 network of marine protected areas	Yes - Not fully completed and still valid.	Yes
		(d) To implement activities as in subparagraphs (e) to (h) under operational objective 1.2	Still valid	Yes
4. Mariculture	To assess the consequences of mariculture for marine and coastal biological diversity and promote techniques which minimize adverse impact	(a) To provide guidance on criteria, methods and techniques which avoid the adverse effects of mariculture and also subsequent stock enhancement on marine and coastal biological diversity and enhance the positive effects of mariculture on marine and coastal productivity	Completed (see document UNEP/CBD/SBSTTA/8/INF/6)	No, although updates should be provided on new criteria, methods and techniques as they become available. Could be replaced by text in recommendation VIII/3 C.
		(b) To collect and disseminate information, data, literature and bibliography relevant to the operational objective and best practice of successful sustainable mariculture, including the use of local species where appropriate	Partially completed, but still valid	Yes, but could be replaced by text in recommendation VIII/3 C.
		(c) To evaluate the current state of scientific and technological knowledge on the effects of mariculture on marine and coastal biological diversity	Completed (see document UNEP/CBD/SBSTTA/8/INF/6)	No, although updates should be provided on new findings as they become available. Could be replaced by text in recommendation VIII/3 C.
5. Alien species and genotypes	5.1 To achieve better understanding of the causes of the introduction of alien species and genotypes and the impact of such introductions on biological diversity	(a) To analyse and disseminate information, data and case-studies on the subject	Completed (see document UNEP/CBD/SBSTTA/6/INF/2), but analysis and dissemination of new case studies, data and information as they become available is still relevant.	Yes

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		(b) To develop collaboration with relevant organizations	Collaboration has been established with organizations such as IMO, GISP, FAO, and IUCN on this topic, however the activity is still relevant as collaboration needs to be maintained and new collaborative activities initiated.	Yes
		c) To ensure exchange of information and experience, using appropriate mechanisms	This activity is still relevant	Yes
	5.2 To identify gaps in existing or proposed legal instruments, guidelines and procedures to counteract the introduction of and the adverse effects exerted by alien species and genotypes which threaten ecosystems, habitats or species, paying particular attention to transboundary effects; and to collect information on national and international actions to address these problems, with a view to prepare for the development of a scientifically-based global strategy for dealing with the prevention, control and eradication of those alien species which threaten marine and coastal ecosystems, habitats and species.	(a) To request views and information from Parties, countries and other bodies	Completed (see document UNEP/CBD/SBSTTA/6/INF/2)	No, except in context of continuing information exchange
		(b) To analyse the information for the purpose of identifying gaps in legal instruments, guidelines and procedures	Completed (see documents UNEP/CBD/SBSTTA/6/7 and UNEP/CBD/SBSTTA/6/INF/5)	No. Efforts should focus on developing and implementing measures to address identified gaps. Could be replaced by text in recommendation VIII/3 A, paragraph 2 (c).

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		(c) To evaluate the information on the effectiveness of efforts to prevent the introduction of, and to control or eradicate, those alien species which may threaten ecosystems, habitats or species	Completed (see document UNEP/CBD/SBSTTA/6/7)	No. Efforts should focus on implementing measures to prevent introductions, and control or eradicate those alien species, which may threaten ecosystems, habitats or species. Could be replaced by text in recommendation VIII/3 A paragraph 2 (c).
		(d) To identify means to support capacity-building in developing countries to strengthen their ability to conduct work related to alien species	This activity is still relevant	Yes
6. General	To establish an "incident list" on introductions of alien species and genotypes through the national reporting process or any other appropriate means	(a) To distil references of incidents from the national reports and other appropriate sources	Incident lists have been established by UNEP-WCMC, the IUCN Species Survival Commission, the FAO and the IMO. National incident lists also exist. Incidents of alien invasions were also reported on in document UNEP/CBD/SBSTTA/6/INF/2). The activity has therefore been completed, although maintenance and updating of incident lists is required	No, except in terms of maintaining incident lists
		(b) To make the information available through the clearing-house mechanism or other appropriate mechanisms	This activity is still relevant	Yes
6. General	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	(a) To identify sources of relevant information and to make this readily available	This initiative has been partially implemented, is still relevant, and should be retained	Yes
		(b) To request inputs from Parties, countries and relevant organizations and bodies	See (a) above	Yes

Programme element	Operational objective	Activity	Is it still relevant?	Incorporation into elaborated PoW?
		(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	See (a) above	Yes
	6.2 To develop a database of experts from the roster and other sources, to be available for the development and implementation of specific elements of national policies on marine and coastal biological diversity, giving full recognition to the importance of taxonomy and following closely the development of the Global Taxonomy Initiative and in accordance with decision IV/1 D. Special consideration should be given to regional perspectives and the setting up of regional centres of taxonomic expertise, as well as to the taxonomy efforts of other intergovernmental programmes, agencies and relevant institutions	(a) To maintain and update regularly a database of experts on marine and coastal biological diversity	Completed, though roster needs regular updating	No
		(b) To make the information available through the clearing-house mechanism	Completed, though needs regular updating	No
		(c) To promote the strengthening of taxonomic expertise at regional and national levels	To be undertaken in collaboration with the Global Taxonomy Initiative	Yes, but incorporated under programme element 2, operational objective 2.1

Annex III

INCORPORATION OF RELEVANT ACTIONS FROM THE PLAN OF IMPLEMENTATION OF THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT INTO THE ELABORATED PROGRAMME OF WORK

Paragraph of the Plan of Implementation	Text	Incorporation into programme of work
30(d)	Encourage the application by 2010 of the ecosystem approach, noting the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem and decision V/6 of the Conference of the Parties	Under operational objective 2.1, activity (g)
30(e)	Promote integrated, multidisciplinary and multisectoral coastal and ocean management at the national level, and encourage and assist coastal States in developing ocean policies and mechanisms on integrated coastal management	Under operational objective 1.1, activity (c)
30(g)	Assist developing countries in coordinating policies and programmes at the regional and subregional levels aimed at the conservation and sustainable management of fishery resources, and implement 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.	As an enabling activity
31(a)	Maintain and restore (fisheries) stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015.	Maintenance and restoration of fisheries stocks to sustainable levels is covered in activity 2.1(h)
31(c)	Implement the 1995 Code of Conduct for Responsible Fisheries, taking note of the special requirements of developing countries as noted in its article 5, and the relevant FAO international plans of action and technical guidelines.	Under operational objective 2.1, activity (g)
32(a)	Maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including areas within and beyond national jurisdiction.	Under operational objective 2.1, activity (i)
32(b)	Implement the work programme arising from the Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biological Diversity of the Convention on Biological Diversity, including through urgent mobilization of financial resources and technological assistance and the development of human and institutional capacity, particularly in developing countries.	Financial and technological assistance, and development of capacity included as enabling activities

Paragraph of the Plan of Implementation	Text	Incorporation into programme of work
32(c)	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.	Elimination of destructive fishing practices under operational objective 2.1 (h). Coastal land use, watershed planning etc. incorporated under operational objective 1.1, activity (l). The rest are already covered under programme elements 1, 2 and 3.
33(d)	Make every effort to achieve substantial progress by the next Global Programme of Action conference in 2006 to protect the marine environment from land-based activities	Under operational objective 1.1, activity (l)
36(a)	Increase 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 and non-living marine resources and expanding ocean-observing capabilities for timely prediction and assessment of the state of the marine environment.	As enabling activity
36(b)	Establish by 2004 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,	Under operational objective 1.2, activity (g)
36(c)	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.	As enabling activity
