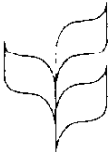




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CONSERVATION AND SUSTAINABLE USE OF MARINE  
AND COASTAL BIOLOGICAL DIVERSITY

Report by the Executive Secretary

EXECUTIVE SUMMARY

1. This report has been prepared by the Executive Secretary for the third meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to the Convention on Biological Diversity. It recalls decision II/10 of the Conference of the Parties, which instructs the Executive Secretary, in accordance with Annex II of the decision, to provide SBSTTA with scientific, technical and technological advice and options for recommendations to the Conference of the Parties in further elaborating the recommendations contained in recommendation I/8, with the exception of paragraphs 3 and 4. It also recalls recommendation II/10 of SBSTTA, which states that, at the third meeting, the secretariat, on the basis of the outcome from the first Meeting of Experts, should provide an interim report on recommendations for proceeding with positive action on conservation and sustainable use of marine and coastal biodiversity.

2. The report covers activities undertaken during the period September 1996-May 1997. It provides information to SBSTTA on collaboration with other agencies and processes, and on arrangements made for the first Meeting of Experts. It transmits the conclusions and recommendations of the Meeting, together with the recommendations of the Executive Secretary for a possible three-year work programme, as required by Annex II to decision II/10.

3. In accordance also with paragraph 11 of decision III/24, preliminary estimates are included of the likely costs of the recommendations for activities under the possible work programme, where these have significant implications for the budget of the Convention.

\* UNEP/CBD/SBSTTA/3/1.

CONSERVATION AND SUSTAINABLE USE OF MARINE  
AND COASTAL BIOLOGICAL DIVERSITY

INTRODUCTION

4. In the light of deep concern at the serious threats to marine and coastal biological diversity caused by many human activities, at its second meeting, in 1995, the Conference of the Parties adopted decision II/10 on the conservation and sustainable use of marine and coastal biodiversity. The Jakarta Ministerial Statement, adopted at the same meeting, reaffirmed the critical need to address the conservation and sustainable use of marine and coastal biological diversity and urged Parties to initiate immediate actions to implement the decisions adopted on this issue. In this context, the Ministerial Statement welcomed the commitment of the Government of Indonesia to play a major role in facilitating such implementation at the global and regional level, and welcomed the declaration by the Conference of the Parties of the new global consensus on the importance of marine and coastal biological diversity as the "Jakarta Mandate on Marine and Coastal Biodiversity".

5. In decision II/10, the Conference of the Parties took note of SBSTTA recommendation I/8 and affirmed that it represented a solid basis for future elaboration of the issues presented. The decision supported paragraphs 10-19 of recommendation I/8, subject to Annex 1 of the decision and its further elaboration by SBSTTA and the Conference of the Parties, and reaffirmed the importance of future work by SBSTTA to provide a balanced perspective on the remaining issues presented by recommendation I/8 and Annex 1 of the decision.

6. Recommendation I/8 of SBSTTA identifies, in paragraphs 10-19, the following five thematic areas:

- (a) Integrated marine and coastal area management;
- (b) Marine and coastal protected areas;
- (c) Sustainable use of marine and coastal living resources;
- (d) Mariculture; and
- (e) Alien species.

7. Paragraph 2 of decision II/10 encouraged the use of integrated marine and coastal area management (IMCAM) as the most suitable framework for addressing human impacts on marine and coastal biological diversity and for promoting its conservation and sustainable use. Paragraph 3 of the decision encouraged Parties to establish and/or strengthen institutional, administrative and legislative arrangements for the development of integrated marine and coastal ecosystems, plans and strategies for marine and coastal areas, and their integration within national development plans.

8. Paragraph 13 of decision II/10 invited international and regional bodies responsible for legal instruments, agreements and programmes which address activities relevant to the conservation and sustainable use of marine and coastal biological diversity to review their programmes with a view to

improving existing measures and developing new actions in light of the recommendations adopted by the Conference of the Parties. Those institutions were invited to cooperate with the Conference of the Parties through SBSTTA in the planning and implementation of programmes affecting marine and coastal biological diversity.

9. Decision II/10 instructed the Executive Secretary to provide SBSTTA with scientific, technical, and technological advice and options for recommendation to the Conference of the Parties in further elaborating the recommendations contained in recommendation I/8, with the exception of paragraphs 3 and 4. The Conference of the Parties recommended that the Executive Secretary should solicit input from Parties and other countries and relevant bodies; establish, on the basis of country input, a roster of experts; and convene, as appropriate, meetings of experts drawn from the roster to support the secretariat in advancing the work.

10. At its second meeting, in recommendation II/10, SBSTTA urged the secretariat to convene the first Meeting of Experts on Marine and Coastal Biological Diversity early in 1997; requested that the Meeting of Experts assist the Executive Secretary in identifying priorities for implementing decision II/10; and urged the secretariat to strengthen and develop special partnership arrangements with relevant international organizations and institutions.

11. The present report provides an overview of steps taken since the second meeting of SBSTTA to strengthen and develop such partnership arrangements; provides information about the organization of the First Meeting of Experts; and offers, in the light of the recommendations of the First Meeting of Experts and in accordance with paragraph 4 (b) of Annex II to decision II/10, recommendations on a three-year work plan.

#### I. ACTIVITIES UNDERTAKEN SINCE THE SECOND MEETING OF SBSTTA

##### A. Collaboration with international organizations and institutions

12. The Executive Secretary provided information to the third meeting of the Conference of the Parties on the memoranda of cooperation signed with the secretariats of other biodiversity-related conventions in 1996 (cf., inter alia, document UNEP/CBD/COP/3/29). In 1996, memoranda of cooperation were signed with the Bureau of the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention), the secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

13. The Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), on the occasion of the IOC-National Oceanic and Atmospheric Administration (NOAA) Ad Hoc Consultation on Marine Biodiversity, held in Paris from 3 to 5 May 1995, reviewed its programme with a view to developing action to promote conservation and sustainable use of marine and coastal biodiversity. IOC reviewed the issues referred to in paragraphs 10-19 of SBSTTA recommendation I/8, and identified those to which it is in a position to contribute. These include: the promotion of integrated marine and coastal

management; the promotion of rapid appraisal techniques; the use or establishment of monitoring mechanisms to assist the sustainable management of marine and coastal living resources; and the provision of knowledge and information on ecosystem functions and processes, identifying and targeting critical processes for the conservation and sustainable use of marine and coastal biodiversity. At the First Meeting of Experts, the representative of IOC reiterated the commitment of the Commission to entering into a partnership under the framework of the Convention on Biological Diversity for implementing the Jakarta Mandate. A memorandum of cooperation between the secretariat and IOC is in the final stages of discussion.

14. Parties to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention) have mandated the Caribbean Environment Programme of the United Nations Environment Programme (UNEP) to develop a cooperative programme with the Convention on Biological Diversity in the field of marine and coastal biodiversity. A draft memorandum of cooperation outlining the possible linkages between the two conventions was submitted to the third meeting of the Conference of the Parties for information (document UNEP/CBD/COP/3/Inf.50). The memorandum of cooperation was signed by the Executive Secretary and the acting Deputy Coordinator in March 1997.

15. During the First Meeting of Experts, the representatives of the World Bank, the Food and Agriculture Organization of the United Nations (FAO), UNEP and UNESCO identified the programmatic linkages between the Convention and their respective organizations. The programmatic linkages between the Convention and European regional initiatives were also identified. Details, as provided by the relevant organizations, are contained in Annex I to the present report.

16. Discussions have taken place with other international, regional and national bodies and non-governmental organizations on developing partnership arrangements, as called for in SBSTTA recommendation II/10.

#### B. Roster of experts on marine and coastal biodiversity

17. In accordance with the guidance from the Conference of the Parties referred to above, the Executive Secretary has established, on the basis of input from countries, a roster of experts with specialization relevant to the work described in paragraph 7 of decision II/10. The status of the roster as at the end of June 1996 was communicated to the second meeting of SBSTTA in document UNEP/CBD/SBSTTA/2/14 and the status as at 20 October 1996 was communicated to the third meeting of the Conference of the Parties in document UNEP/CBD/COP/3/Inf.26.

18. As at 1 May 1997, countries had provided the secretariat with the names of over 700 experts. The list of countries which have submitted names to the roster of experts on marine and coastal biological diversity appears as Annex II to this report.

19. As part of its ongoing activities, the secretariat will continue to update this roster, including, where necessary, by obtaining fuller information on each expert and by improving the relevant database. The secretariat intends to make available through the clearing-house mechanism

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databases containing the rosters of experts for all issues where rosters have been established.

C. Preparations for the First Meeting of Experts on Marine and Coastal Biological Diversity

20. The first Meeting of Experts on Marine and Coastal Biological Diversity took place from 7 to 10 March 1997 in Indonesia, at the invitation of the Government of Indonesia. The report of the meeting is available, in English only, as document UNEP/CBD/JM/Expert/1/5. This report has been available since late April 1997 through the Internet, on the secretariat's homepage (<http://www.biodiv.org>), and has been made available upon request in hard copy or by electronic mail. Copies will be sent to national focal points together with the present report.

21. Fifteen experts were selected on the basis of the following criteria:

(a) Geographic representation, taking into consideration the special conditions of least- developed countries and small island developing States;

(b) Representation of expertise in the five thematic areas identified in SBSTTA recommendation I/8:

- (i) Integrated marine and coastal area management;
- (ii) Marine and coastal protected areas;
- (iii) Sustainable use of marine and coastal living resources;
- (iv) Mariculture, and
- (v) Alien species;

(c) Representation of the expertise identified in decision II/10, namely, scientific, technical, technological, social, management, economic, policy, legal and indigenous and traditional knowledge, in the field of biodiversity and relevant to the five thematic areas mentioned above.

The experts selected were nominated to the roster by: Australia, Barbados, Croatia, European Community, Japan, Latvia, Marshall Islands, Mexico, Netherlands, Nigeria, Republic of Korea, Russian Federation, Senegal, South Africa, and Uruguay. Fourteen experts were present at the Meeting. An expert nominated by the Government of Indonesia participated ex officio.

22. The Chairman and the Chairman-elect of SBSTTA were present. Representatives of six international agencies - FAO, the International Development Research Centre (IDRC), IOC, UNESCO, UNEP and the World Bank - also participated in the Meeting. A full list of participants is contained in annex I to document UNEP/CBD/JM/Expert/1/5 and a summary of the experts' background and areas of expertise is contained in annex IV to the same document.

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23. The Government of the Netherlands seconded an expert to assist the secretariat in the preparation of working documents and in servicing the meeting. The secretariat prepared background documents for the meeting. These are listed in annex III to document UNEP/CBD/JM/Expert/1/5 and have been made available on the Internet. The secretariat also received many valuable submissions, publications and other documents from several agencies and organizations. These are also listed in annex III to document UNEP/CBD/JM/Expert/1/5.

D. Other matters

24. SBSTTA recommendation II/10 recommended that the Conference of the Parties ensure that resources should be made available to fill the posts within the secretariat associated with this mandate as soon as possible. In decision III/24, the Conference of the Parties approved three posts within the secretariat in connection with the Jakarta Mandate: Programme Officer-Marine Ecology (P-4), Programme Officer (P-3), and Junior Programme Officer (P-2).

25. The situation as at 1 May 1997 is that the post of Junior Programme Officer (P-2) has been filled since January 1997 by a professional provided by the Government of Italy. The post of Programme Officer (P-3) continues to be filled on a short-term basis. It is expected that the vacancy announcement will be published by the United Nations Office at Nairobi (UNON) before the third meeting of SBSTTA. The post of Programme Officer-Marine Ecology (P-4) is intended to be filled by secondment from UNESCO, the Executive Secretary and UNESCO having agreed upon a candidate in December 1996. The secretariat is currently awaiting further news from UNESCO regarding the status of the recruitment.

II. FIRST MEETING OF EXPERTS

A. Terms of reference for the First Meeting of Experts

26. The following terms of reference were given to the meeting:

(a) To assist the Executive Secretary in providing SBSTTA with scientific, technical and technological advice and options for recommendations to the Conference of the Parties in further elaborating SBSTTA recommendation I/8, with the exception of paragraphs 3 and 4, by addressing the following tasks:

- (i) Identification of options for a pragmatic but comprehensive approach in addressing marine and coastal biological diversity on the basis of an ecosystem approach, including its components at the levels of species and genetic resources, distinguishing regions at the relevant scales, and using the results from this activity to identify gaps in knowledge of the distribution and abundance of marine and coastal biodiversity;
- (ii) Identification of the particular needs for conservation and sustainable use of marine and coastal biological diversity in the context of activities which will impact on marine resources; and

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- (iii) Review of the mandates and activities under international agreements that affect marine and coastal biological diversity, and development of analyses that can be offered by the Conference of the Parties to the relevant institutions relating to implications of the Convention on Biological Diversity for these activities;
- (b) To apply the following general approaches in addressing these issues:
  - (i) The precautionary approach;
  - (ii) Interaction with relevant organizations and agencies;
  - (iii) Capacity-building and technology transfer;
  - (iv) Knowledge of local and indigenous communities;
  - (v) Community and user-based approaches; and
  - (vi) Use of the Convention clearing-house mechanism and national reports of Parties;
- (c) To assist the secretariat in providing an interim report on recommendations for proceeding with positive action on the conservation and sustainable use of coastal and marine biodiversity. These recommendations should be made on the basis of priorities that consider:
  - (i) What resources are or will be available;
  - (ii) On which of the five thematic issues (integrated marine and coastal area management, marine and coastal protected areas, sustainable use of marine and coastal living resources, mariculture and alien species) the Convention can have the greatest effect;
  - (iii) Which of the five thematic issues are being, or will be, adequately addressed by other non-Convention on Biological Diversity entities; and
  - (iv) Where other planned or ongoing activities outside the Convention on Biological Diversity process can contribute to proposed actions under the Convention;
- (d) To assist the Executive Secretary in identifying:
  - (i) Priorities for implementing the Jakarta Mandate;
  - (ii) Options for a pragmatic but comprehensive approach in addressing marine and coastal biodiversity; and
  - (iii) Products, timetables and ways and means of proceeding in line with paragraphs 1 (b), 1 (c) and 7 of decision II/10;

(e) To advise on ways to strengthen and develop special partnership arrangements with international organizations and institutions, including regional bodies, with particular competence in specific areas of marine and coastal biodiversity.

B. Conclusions and recommendations

27. The First Meeting of Experts agreed upon the following conclusions and recommendations:

- (a) Implementation of marine and coastal biodiversity activities;
- (b) Application of the precautionary approach to biodiversity impacts;
- (c) Implementation of integrated marine and coastal area management (IMCAM);
- (d) Definition of a "healthy ecosystem",
- (e) Regional implementation capacity;
- (f) Open ocean ecosystems (including marine and straddling species and oceanic protected areas); and
- (g) Eco-labelling.

28. The conclusions and recommendations of the meeting, as contained in annex V of document UNEP/CBD/JM/Expert/1/5, are reproduced below.

III. CONCLUSIONS AND RECOMMENDATIONS OF THE FIRST MEETING OF EXPERTS

A. Implementation of the marine and coastal biodiversity activities

29. The Meeting emphasized the important role to be played by various Convention mechanisms in the effective implementation of the provisions of the Convention in relation to marine and coastal biodiversity issues. To a large extent, such mechanisms rely on regional, national and local activities as well as the opportunities offered by the Convention structure for the facilitation and coordination of activities.

30. The Meeting therefore endorsed facilitation by Convention structures of the following:

- (a) The holding of special workshops or consultations by experts on specific issues;
- (b) The formulation of particular scientific, technological and technical tasks and the assignment of tasks to be carried out by experts, or by other identified forums, under the guidance of the Executive Secretary. Such tasks might include, inter alia:

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- (i) Gathering, compilation and synthesis of primary information;
- (ii) Review of scientific and technical activities, literature and reports;
- (iii) Assessment of data from relevant national, regional and international organizations and/or institutions;
- (iv) Compilation and reporting of methodologies to assess the effectiveness of measures to limit biodiversity impacts and to assess the implementation of the Convention;
- (v) Reviewing activities to promote technology transfer and development;
- (vi) Attention to be given to the building of expertise and regional empowerment in methods of strategic importance for the assessment of biodiversity impact and the implementation of the Convention;
- (vii) Formulation of procedures to assess the relative weighting and monetary value of biodiversity attributes in the evaluation of impact costs - i.e., to internalize externalities along the lines of the current World Bank analysis; and
- (viii) Strengthening and promoting the flow of information and data relevant to the implementation of the Convention, including through electronic conferencing, between the Parties and the regional organizations concerned with the conservation and sustainable use of marine and coastal biodiversity, and between the secretariat and such organizations.

31. These considerations indicate that a strategic approach will be required to avoid duplication of efforts and to promote cost effective cooperation. Examples of current initiatives addressing biodiversity-related issues are given in annex I to the present report. The Meeting recommended that a full review should be carried out of relevant activities in this context. The proposed review would serve to avoid duplication. It should focus on current actions rather than on planned actions, so as to ensure the best use of available commitments and resources in the planning and implementation of activities under the Convention.

B. Application of the precautionary approach to biodiversity impacts

32. With regard to the Convention, the Meeting agreed that the precautionary approach <sup>1/</sup> should take account of uncertainties in knowledge on biodiversity and recognize the need to take action in the face of incomplete knowledge.

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<sup>1/</sup> The preamble to the Convention on Biological Diversity notes that, "where there is a threat of significant reduction or loss of biological iversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat".

33. The precautionary approach also implies that activities which are likely to impact on biodiversity should be subject to prior review and that some evaluation of the effects of impacts should be undertaken. As far as possible, therefore, a management plan should be developed with management objectives being clearly specified and guidelines given on how biodiversity impacts are to be assessed, monitored and addressed. Specified interim management measures should apply to all activities likely to impact on biodiversity until a management plan is in place. The standard of proof to be used in decisions regarding these activities should take account of the potential risk to the biodiversity or functions of the system or systems concerned, while also taking into account the expected benefits of the activities.

34. In connection with the above, the management objectives should consider both the manner in which the benefits from the biodiversity impact activity are to be realized as well as the possible undesirable outcomes which are to be avoided. Broad objectives include the consideration of long term interests and the avoidance of irreversible or slowly reversible changes. These general objectives could be taken as the starting point for setting more specific objectives for a particular biodiversity impact activity. To ensure that an approach is precautionary, priority should be accorded to the avoidance of potential harmful activities and the over-capitalization of such activity.

35. Operational targets and limits should be specified on the basis of the best scientific evidence available. Targets identify the planned outcome for a given biodiversity impact activity. These may, for example, take the form of some limited biodiversity impact, or a specified level of impact relative to time zero or any other agreed baseline state. The operational constraints explicitly define the undesirable outcomes that are to be avoided. Both operational targets and constraints should be expressed in measurable terms, such as target reference points and limit reference points. 1/ The details of what can be measured will often vary, depending on different species and biodiversity impact activities and national capacity; consequently, the operational targets and constraints should be expressed in terms which take these issues into account. The specification of operational targets and constraints cannot be separated from the consideration of the types of data and methods to be used to assess biodiversity impacts.

36. Once these targets or limits are reached, predetermined and agreed contingency plans (mitigation measures) should be implemented. The procedure described above is similar to that involved in the implementation of environmental impact assessments, which are - or are becoming - formally incorporated into the planning process in most countries. In the application of the precautionary approach described here, it is necessary for the decision-making process to be explicitly incorporated into predetermined management plans.

37. The Meeting derived this precautionary methodology from procedures established in other international forums. These include the practice of the

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2/ See, inter alia, FAO Fisheries Report, No. 527, 1995.

1980 Convention on the Conservation of Antarctic Marine Living Resources, the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stock and Highly Migratory Fish Stocks and the proceedings of the Workshop on Technical Consultation of the Precautionary Approach to Capture Fisheries, Lysekil, 6-13 June 1995 (FAO Fisheries Technical Paper 350/1, 1995), which sets guidelines for the application of the precautionary approach to capture fisheries and species introduction. Consequently, it was agreed that a thorough evaluation of the precautionary approach, as developed in the relevant literature, legal instruments and operational practices, should be undertaken as a matter of priority in relation to the five thematic areas of the Jakarta Mandate.

38. The Meeting also drew the attention of Parties and the Conference of the Parties to the fact that implementation of the precautionary approach for biodiversity matters should be vested in national and regional organizations with environmental competence. For example, the undertaking of impact assessments on proposed activities requires insight into ecological principles as well as an appreciation of possible biodiversity effects. The authorization of subsequent activities would therefore be based on an environmentally competent assessment. In instances where capacity and environmental competence are absent or insufficient, the building of environmental competence should be accorded high priority.

C. Implementation of integrated marine and coastal area management (IMCAM)

39. The Meeting agreed that IMCAM constituted the most effective tool to implement the Convention with respect to the conservation and sustainable use of marine and coastal biodiversity. Such a tool required implementation at different levels, ranging from intra-national, or local, through national and regional, or supranational, to global.

40. The Meeting recognized that IMCAM would be implemented largely by individual Parties to the Convention, but that, because of the linkages (ecological and others) between marine areas, it should be by existing regional mechanisms, such as the regional seas programmes and regional conventions. Furthermore, the effective implementation of IMCAM would depend on international and global cooperation, particularly with regard to straddling stocks and marine pollution from land-based activities, which might spread over large geographic areas. Consequently, the Meeting anticipated that the implementation of IMCAM would be linked to the actions of the United Nations Convention on the Law of the Sea and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

41. The Meeting agreed that there was a need at the national level to establish broad objectives and goals for IMCAM, which should be approved by coastal zone policy-makers in national, regional or municipal governmental bodies, supported by relevant scientific institutions. The Meeting emphasized the important linkages between IMCAM and the conservation and sustainable use of inland water ecosystems. Linking structures should therefore include departments or ministries responsible for economic development, water management and coastal defence, environmental and physical planning, as well as common interest groups that represented targets of IMCAM policy, such as fishery organizations, local communities and tourist operators.

42. It is important that IMCAM operate at both national and local levels, and that a community-based approach be adopted. Implementation of IMCAM may therefore require some institutional reorganization at both the national and regional level, where institutions carry out functions relevant, but not exclusive, to biodiversity issues.

#### D. Additional issues

##### 1. Definition of a "healthy ecosystem"

43. The Meeting recognized that the development of appropriate and functional definitions of "ecosystem health" is fundamental to assessing the extent to which effects on biodiversity are "harmful".

44. While agreeing that priority attention should be given to the development of definitions for ecosystem health and harmful effects, the Meeting offered the following interim working definitions:

"A healthy ecosystem is one whose parameters do not vary outside predetermined limits, from a predetermined level, within a given period of time".

45. To take account of the possibility that a steady-state condition may arise following a gross perturbation or perturbations and impairment of functions, this definition requires the following caveat:

"Any lack of, or extreme, variation outside the pre-determined limits should be kept under constant review and contextual comparisons made with systems of similar structure and/or function to assist in interpretation of observed changes".

46. A "harmful" effect would thus be defined as one that violates the conditions for a healthy ecosystem.

47. In addressing the further development of the conditions, it is imperative that due consideration be given to the potential reversibility of harmful effects and to the minimization of the risk attached to the induction of irreversible effects. These latter principles are consistent with the Meeting's understanding of the precautionary approach outlined above.

##### 2. Regional implementation capacity

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48. The Meeting recognized the importance of existing regional activities and associated conventions and protocols in implementing many of the objectives of all of the thematic issue areas of the Jakarta Mandate. It also recognized the considerable advantage to the Convention of establishing programmatic linkages with such existing activities as the various UNEP regional seas programmes, and the regional activities of IOC of UNESCO. Based upon information available to the Meeting, a summary of potential programme linkages is given in annex VII of the report of the meeting (UNEP/CBD/JM/Expert/1/5). The Meeting agreed that the secretariat should be requested to draw up a list of all relevant regional programmes and activities.

### 3. Open ocean ecosystems

49. The Meeting acknowledged the significant lacunae in knowledge about open water marine ecosystems. In particular, there is much still to learn about the taxonomy of oceanic and deep seabed species, there is need for an inventory of known species and their geography, as well as further information on the links between marine biodiversity and ecological processes in the open ocean.

50. Migratory and straddling species: The open ocean impacts on some species which occur either permanently or transiently in coastal waters. There is, consequently, a linkage between the health and biodiversity of open ocean areas and coastal ecosystems. The vulnerability of this linkage to negative impacts varies temporally and spatially, as well as with the life history responses of the organisms concerned. Consequently, anthropogenic impacts on all demographic properties of the species concerned should be considered over all relevant scales. The Meeting recognized that many of these issues were addressed in principle by the 1995 Straddling Stocks Agreement and had been addressed by other treaty regimes at global and regional levels, such as CMS, the Northwest Atlantic Fisheries Organization (NAFO), the International Whaling Commission (IWC) and the 1996 Inter-American Convention for the Protection and Conservation of Sea Turtles. The 1995 Straddling Stocks Agreement, in particular, calls for the establishment of regional fisheries organizations, to conserve and manage stocks that occur both on the high seas and within national jurisdictional limits.

51. Oceanic protected areas: The Meeting also highlighted the unique significance of certain high seas and deep seabed areas, such as identified spawning areas, deep ocean trenches and certain hydrothermal vents, outside the limits of national jurisdiction, and called for consideration to be given to the development of means and modalities for the establishment of marine protected areas in such locations. The Meeting suggested that the secretariat should include this issue in its collaborative relations with the United Nations Division for Ocean Affairs and the Law of the Sea.

### 4. Eco-labelling

52. Initiatives exist or are being planned for the eco-labelling of fishery products, with the idea that market forces will motivate sustainable resource use. Such initiatives have been used in other sectors to promote conservation and sustainable use. These initiatives will need to be

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evaluated in the light of the objectives of the Convention. Appropriate means for undertaking this evaluation should be identified.

IV. ELEMENTS OF A THREE-YEAR WORK PLAN IDENTIFIED BY THE  
FIRST MEETING OF EXPERTS 1/

53. Taking account of the above conclusions and recommendations, the proposed mechanism of work contained in document UNEP/CBD/JM/Expert/1/3 and the information contained in annex VI (annex III to the present report), the Meeting developed an outline of activities to address the five thematic issue areas identified by the Jakarta Mandate. This outline is attached as annex IV to the present report. The Meeting emphasized that the work plan was in skeleton form only and that difference of detail between elements did not imply any inherent or priority weightings.

V. PROPOSAL BY THE EXECUTIVE SECRETARY FOR A THREE-YEAR WORK PLAN

54. On the basis of the above conclusions and recommendations, and of the identified elements of a work plan, the Executive Secretary proposes the following three-year programme of work for the consideration of SBSTTA:

Programme element 1. Application of the precautionary approach

Rationale: The precautionary approach should take account of uncertainties in knowledge on biological diversity and recognize the need to take action in the face of incomplete knowledge. In accordance with this approach, activities that are likely to cause an impact on biological diversity should also be subject to prior review and evaluation of the effects of such impacts.

Operational objective: To undertake a thorough evaluation of the precautionary approach as developed in the relevant literature, legal instruments and operational best practice for the five thematic issue areas (integrated marine and coastal area management; marine and coastal protected areas; sustainable use of marine and coastal living resources; mariculture; alien species) in order to develop guidance to Parties on the practical application of precautionary principles.

Activities:

(a) To gather and compile the available literature, guidelines, techniques, legal instruments, economic measures, and formulations of best practice, including traditional practices;

(b) To analyse further the possibilities for the application and implementation of the precautionary approach in the five thematic areas, possibly by convening a meeting of experts in the second year (1999);

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1/ The original text is included in annex V of document UNEP/CBD/JM/Expert/1/5.

- (c) To develop guidelines on:
- (i) Implementation of research and monitoring;
  - (ii) Application of economic and legal measures;
  - (iii) Identification of targets and limits based on the best scientific evidence available;
  - (iv) Harmonization of measures at the national and regional levels.

Time schedule and ways and means: The above activities can be carried out over the three-year period (1998-2000) by the secretariat under the guidance of SBSTTA.

Budgetary implications: With the exception of convening a meeting of experts, the activities can be incorporated into the work programme of the Jakarta Mandate unit within the secretariat, on the basis of the human resources provided for in decision III/24. The additional cost of a meeting of experts would need to be reflected in the budget of the Trust Fund for 1999. An indicative figure for this expenditure would be \$100,000.

Programme element 2. Implementation of integrated marine and coastal area management

Rationale: IMCAM constitutes the most effective tool for implementing the Convention with respect to the conservation and sustainable use of marine and coastal biological diversity. Such a tool requires implementation at different levels, ranging from the intra-national, or local, through national and regional, or supra-national to the global level.

Operational objective 2.1: To review the existing instruments relevant to IMCAM and their implication for the implementation of the Convention;

Activities:

- (a) To identify existing mechanisms and instruments relevant to IMCAM;
- (b) To identify focal points for the implementation of IMCAM at different levels (national, regional and global);
- (c) To gather, compare and analyse information provided by the focal points;
- (d) To convene meetings involving representatives of stakeholders at different levels; and
- (e) To promote the implementation of IMCAM at the national and regional levels.

Time schedule and ways and means: The activities will be carried out during the three-year period by the secretariat, with the collaboration of an

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informal inter-agency task force.

Budgetary implications: The activities can be incorporated into the work programme of the Jakarta Mandate unit within the secretariat, on the basis of the human resources provided for in decision III/24. The establishment of an informal inter-agency task force, while providing for savings against future additional human resource needs within the secretariat, will entail communications and travel costs. There are no specific provisions for such expenditure in the budget of the Trust Fund for 1997-1998, as laid out in decision III/24. Possible indicative costs might be \$5,000 per annum for communications and \$20,000 per annum for staff travel to inter-agency meetings and to service meetings. Indicative average costs of convening meetings of stakeholders will vary according to the nature of the meeting, ranging from comparatively modest amounts for national or subregional meetings to an indicative \$100,000 for meetings with global participation. For such meetings to be held in 1998, additional voluntary contributions to the Trust Fund would be required. Meetings to be planned for 1999 or 2000 will require the necessary allocation in the budget of the Trust Fund for the period from 1999 onwards, to be agreed at the fourth meeting of the Conference of the Parties.

Operational objective 2.2: To develop guidelines for ecosystem assessments, paying special 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 identify existing organisations and initiatives;
- (b) To convene workshops to identify and select key indicators; and
- (c) To collaborate with relevant organisations in the preparation of guidelines.

Time schedule and ways and means: The activities should be carried out, under the guidance of SBSTTA, as part of the work programme on indicators, monitoring and assessment.

Budgetary implications: To be defined in conjunction with the adoption of a future work programme of SBSTTA on indicators, monitoring and assessment. Indicative average costs of convening workshops will vary according to the nature of the workshop, ranging from comparatively modest amounts for national or subregional meetings to an indicative \$100,000 for meetings with global participation. For such workshops to be held in 1998, additional voluntary contributions to the Trust Fund would be required. Workshops to be planned for 1999 or 2000 will require the necessary allocation in the budget of the Trust Fund for the period from 1999 onwards, to be agreed at the fourth meeting of the Conference of the Parties.

Programme element 3. Marine and coastal living resources

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Rationale: Very little is currently known about the loss of genetic, species and ecosystem diversity in marine and coastal ecosystems. A significant number of marine species have disappeared in recorded history and this process continues. Ecosystems have been degraded and, from the loss of populations, it is reasonable to infer that there has been a consequent loss of genetic diversity. The overall goal is to achieve conservation and long-term sustainable use of marine and coastal living resources in a manner that satisfies human needs and guarantees the integrity of ecosystems.

Operational Objective: To develop ecosystem level 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:

- (a) Components of biological diversity;
- (b) The sustainable use of such components; and
- (c) Ecosystem effects.

Activities:

- (a) To develop collaborative links with relevant organizations and institutions;
- (b) To collect and disseminate information;
- (c) To arrange expert meetings as required;
- (d) To promote ecosystem level approaches compatible with sustainable use of marine and coastal living resources;
- (e) To promote capacity building at national and regional level.

Time schedule and ways and means: The activities should be undertaken throughout the three-year period. The information dissemination aspects should be included in the work plan of the clearing-house mechanism. The secretariat will seek to establish an informal inter-agency task force for this work.

Budgetary implications: Many of the liaison and information-gathering activities can be incorporated into the work programme of the Jakarta Mandate unit within the secretariat, on the basis of the human resources provided for in decision III/24. The establishment of an informal inter-agency task force, while providing for savings against future additional human resource needs within the secretariat, will entail communications and travel costs. There are no specific provisions for such expenditure in the budget of the Trust Fund for 1997-1998, as laid out in decision III/24. Possible indicative costs might be \$5,000 per annum for communications and \$20,000 per annum for staff travel to inter agency meetings and to service meetings.

Indicative average costs of convening meetings of stakeholders will vary according to the nature of the meeting, ranging from comparatively modest amounts for national or subregional meetings to an indicative \$100,000 for meetings with global participation. For such meetings to be held in 1998,

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additional voluntary contributions to the Trust Fund would be required. Meetings to be planned for 1999 or 2000 will require the necessary allocation in the budget for the period from 1999 onwards, to be agreed at the fourth of the Conference of the Parties.

Programme element 4. Marine and coastal protected areas

Rationale: Marine and coastal protected areas are a critical component of effective biodiversity conservation strategies. Individual protected areas can serve many conservation-related functions by protecting critical habitats, ecological features or processes, special or unique sites or features, ecologically representative or typical habitats, and control areas for research and monitoring. To be effective, however, such protected areas have to be integrated into wider strategies for preventing adverse effects to marine and coastal ecosystems from external activities.

Operational objective 4.1: In collaboration with relevant intergovernmental, national and non-governmental organizations, to develop guidance on criteria for, and operational aspects of, marine and coastal protected areas, in accordance with the six protected area categories as defined by IUCN. 1/

Activities:

- (a) To compile research findings on relevant aspects of marine and coastal protected areas through existing relevant literature, bibliographies and information networks;
- (b) To facilitate the exchange of information on appropriate incentive measures, including through the clearing-house mechanism and through regional workshops;
- (c) To assist the development of national and regional capacity-building;
- (d) To develop guidance on relevant legal and institutional issues;
- (e) To assist the development of appropriate education and public awareness programmes at all levels;
- (f) To assist information exchange between sites aimed at networking;
- (g) To provide guidance on the maintenance and wider application of local and traditional knowledge; and
- (h) To identify the linkages between conservation and sustainable use.

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1/ Category I: Strict nature reserve/wilderness area; Category II: National park; Category III: Natural monument; Category IV: Habitat/species management area; Category V: Protected landscape; Category VI: Managed resource protected areas.

Time schedule and ways and means: These should be ongoing activities over the three-year period. The basis for undertaking these activities should be collaboration between the secretariat, under the guidance of SBSTTA, and relevant intergovernmental, national and non-governmental organizations. The creation of an informal task force may be an appropriate mechanism, conducting its work through regular communication and through periodic meetings as required. The clearing-house mechanism will play a key role.

Budgetary implications: The activities can be incorporated into the work programme of the Jakarta Mandate unit within the secretariat, on the basis of the human resources provided for in decision III/24. The establishment of an informal inter-agency task force, while providing for savings against future additional human resource needs within the secretariat, will entail communications and travel costs. Possible indicative costs might be \$5,000 per annum for communications and \$20,000 per annum for staff travel to inter-agency meetings and to service meetings. Indicative average costs of convening meetings will vary according to the nature of the meeting, ranging from comparatively modest amounts for national or subregional meetings to an indicative \$100,000 for meetings with global participation. For such meetings to be held in 1998, additional voluntary contributions to the Trust Fund would be required. Meetings to be planned for 1999 or 2000 will require the necessary allocation in the budget for the period from 1999 onwards, to be agreed at the fourth meeting of the Conference of the Parties.

Operational objective 4.2: To conduct research on the effects of marine and coastal protected areas on population size and dynamics, within the protected and adjacent areas.

Activities:

- (a) To collaborate with relevant competent organizations for the preparation of a project proposal;
- (b) To select pilot projects with the assistance of competent organizations;
- (c) To facilitate countries or international/regional organisations in conducting research on the effects of marine and coastal protected areas on population size and dynamics; and
- (d) To conduct desk study to gather and assimilate information.

Time schedule and ways and means: The programme should be an ongoing activity, to be carried out by an ad hoc technical expert group under SBSTTA.

Budgetary implications: Secretariat staff time will be required for servicing an ad hoc technical expert group. An indicative budget for meetings of the ad hoc technical expert group would be \$100,000 per meeting. For such meetings to be held in 1998, additional voluntary contributions to the Trust Fund would be required. Meetings to be planned for 1999 or 2000 will require the necessary allocation in the budget for the period from 1999 onwards, to be agreed at the fourth meeting of the Conference of the Parties.

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The commissioning, conduct and evaluation of the research involved would need to be undertaken with the support of relevant scientific and funding institutions.

Programme element 5. Mariculture

Rationale: Mariculture offers possibilities for sustainable protein-rich food production and for the economic development of local populations, as well as for enhancing genetic aspects of biodiversity.

Operational objective 5.1: To promote sustainable mariculture.

Activities: To provide guidance to Governments, public and private mariculture sector organizations, financial institutions and donor agencies, scientific research institutions and bodies on criteria and methods for promoting sustainable mariculture, including:

- (a) Collection and dissemination of information, data, literature and bibliography relevant to sustainable mariculture;
- (b) Evaluation of the current state of knowledge on mariculture; and
- (c) Development of best practices and identification of examples of successful sustainable mariculture.

Components of such evaluation and elaboration of best practice would include:

- (a) Application of the precautionary principle;
- (b) Development of value criteria to separate mariculture for economic benefits only and mariculture for biodiversity (e.g., species recovery) and formulation of criteria to evaluate the effects of these respective forms of mariculture;
- (c) Development of sustainable mariculture practices, especially for shrimp culture;
- (d) Research into polyculture approaches in marine aquaculture;
- (e) Development of emergency techniques;
- (f) Identification of suitable species for mariculture which are in a lower trophic level; documenting local species and their culture performance (for the purpose of identifying local species as an alternative to alien introductions);
- (g) Assessment of the impacts of genetic mixing;
- (h) Assessment of the potential impact of GMO release into the wild;
- (i) Identification of replacements for fish meal (farmer access to lower cost food);

- (j) Continuation of research on breeding technologies to enhance genetic aspects of biodiversity for captive and wild populations;
- (k) Evaluation of the environmental impact on potential areas and their carrying capacity; and
- (l) Development of guidelines for the restoration and rehabilitation of mariculture sites.

Time schedule and ways and means: The coordination of this programme of activities within the secretariat creates the need for a professional with specific high-level expertise. This need could probably best be met through the secondment by a Party or specialized institution of an appropriate professional. To be successful and cost-effective, the work would need to draw upon specialist scientific knowledge worldwide. It would thus need to be supported by a specialist inter-agency task force or by the establishment of an ad hoc technical expert group under SBSTTA. Operational aspects thus suggest that this work be undertaken from 1999 onwards. The aspects of this work relating to the application of the precautionary principle should form part of the activities described under programme element 1 above, and should thus be addressed by the expert group recommended to be convened in 1999. The clearing-house mechanism will have an important role to play.

Budgetary implications: The secondment to the secretariat of a specialist professional would imply a voluntary contribution by the Party or institution in question, without cost to the Trust Fund. The establishment of an inter-agency task force will entail communications and travel costs for the period 1999-2000. Possible indicative costs might be \$5,000 per annum for communications and \$20,000 per annum for staff travel to inter-agency meetings and to service meetings. Indicative costs of convening meetings of an ad hoc technical expert group would be \$100,000 for a meeting of fifteen experts, with due regard to the need for geographical balance. Such meetings to be planned for 1999 or 2000 will require the necessary allocation in the budget for the period from 1999 onwards, to be agreed at the fourth meeting of the Conference of the Parties.

Operational objective 5.2: To collaborate with CITES on the application of CITES appendices to vulnerable and endangered commercial species.

Activities: To collaborate with CITES in identifying the vulnerable and endangered commercial species.

Time schedule and ways and means: This is an ongoing activity to be developed by the secretariat under the terms of the memorandum of cooperation between the two secretariats. The communication to the CITES secretariat of information on vulnerable and endangered species and the joint analysis of the possible application of CITES appendices are activities potentially arising out of the other programme elements described above.

Budgetary implications: The activity has implications for staff time within the Jakarta Mandate unit.

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Programme element 6. Alien species

Rationale: While some eradication and control technology options exist for alien species in marine and coastal environment, the most effective strategy for limiting their effects on biological diversity is to prevent their introductions.

Operational objective 6.1: To achieve a better understanding of the impact on biological diversity of the introduction of alien species, with particular attention to the characteristics of the species and of the recipient ecosystems.

Activities:

- (a) To analyse and disseminate information, data, cases studies on the subject;
- (b) To develop collaboration with relevant organizations; and
- (c) To organize technical meetings with relevant organizations.

Time schedule and ways and means: The activities will be carried out from the second half of 1998 onwards, with the aim of organizing a technical workshop or conference in late 1999 or 2000. The secretariat, under the guidance of SBSTTA, will seek the assistance of relevant organizations through an informal inter-agency task force. In particular, the options will be investigated for collaboration with the Scientific Committee on Problems of the Environment (SCOPE)/IUCN efforts to develop a global strategy and action plan.

Budgetary implications: The staffing of the Jakarta Mandate unit in the secretariat may need to be strengthened from 1999 onwards, to take account of this work. This need could be met through the secondment by a Party or specialized institution of an appropriate professional, which would imply a voluntary contribution by the Party or institution in question, without cost to the Trust Fund. Alternatively, an appropriate post could be included in the secretariat at the time of the consideration of the budget of the Trust Fund for the period from 1999 onwards to be undertaken by the Conference of the Parties at its fourth meeting. An indicative budget for a technical workshop of fifteen experts selected with due regard to geographical representation and serviced by the secretariat would be \$100,000. The cost of a conference is likely to be considerably greater. An allocation for this purpose will require the necessary allocation in the budget for the period from 1999 onwards, to be agreed at the fourth meeting of the Conference of the Parties.

Operational objective 6.2:

- (a) To examine the need for additional effective legal instruments related to the introduction of alien species, in particular providing input on biodiversity-related matter into the discussions within IMO on its International Guidelines for Preventing the Introduction of Unwanted Aquatic Marine Organisms and Pathogens from Ship's Ballast Water and Sediment Discharges; and

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(b) To establish a process to deal with reckless or deliberate introductions of alien species (especially where transboundary effects have occurred).

Activities:

(a) The Conference of the Parties might authorize the Executive Secretary to apply for observer status at the appropriate IMO proceedings and to provide input on biodiversity-related matters to the discussions;

(b) Parties and other bodies should be requested to provide the Executive Secretary with their views on the linkages between biodiversity-related matters and the discussions on the IMO Guidelines, and on the possible need for additional legal instruments, especially with regard to reckless or deliberate introductions; and

(c) Input from the IMO proceedings and the views of Parties should be incorporated in the work of the technical workshop or conference on alien species referred to under operational objective 6.1 above.

Time schedule and ways and means: Starting in mid-1998, following approval by the Conference of the Parties, the secretariat would apply for IMO observer status and request the views of Parties.

Budgetary implications: Attendance at IMO meetings would require the allocation of the necessary funds for travel. The preparation of documentation for meetings and the analysis of the views of Parties would require staff time. The budgetary implications of a technical workshop or conference are referred to under operational objective 6.1 above.

Operational objective 6.3: To establish an "incident list" on introductions of alien species through the national reporting process.

Activities: To distil references of incidents from the national reports.

Time schedule and ways and means: To be considered by the Conference of the Parties at its fourth meeting, as part of its consideration of the intervals and forms of subsequent national reports. If approved, appropriate guidance to Parties would need to be prepared and this distillation and dissemination would form part of the ongoing work of the national reports unit and of the clearing-house mechanism unit, when receiving national reports from Parties.

Budgetary implications: Staff time would be required within the clearing-house mechanism unit, for the design of appropriate databases and the posting of information.

Programme element 7. General

Rationale: The Executive Secretary should pursue further collaborative linkages with a wide range of agencies and organizations whose mandates and activities are relevant to the conservation and sustainable use of marine and coastal biological diversity, in order to avoid unnecessary duplication and to ensure efficiency and cost effectiveness in carrying out the work.

Operational objective 7.1: To assemble a database of ongoing case studies through a cooperative approach with relevant bodies and organizations, with special emphasis on integrated marine and coastal area management.

Activities:

- (a) To identify sources of relevant information;
- (b) To request inputs from countries and from relevant organizations and bodies; and
- (c) To carry out desk evaluations of available information and to disseminate the findings.

Time schedule and ways and means: Ongoing activities to be carried out by the secretariat over the three-year period as previously described in programme element 2 above, involving collaboration between the Jakarta Mandate unit and the clearing-house mechanism unit.

Budgetary implications: Additional staff time would be required within the clearing-house mechanism unit, for the design of appropriate databases and the posting of information.

Operational objective 7.2: To develop a database of experts, starting from the roster, to be available for the development and implementation of specific elements of national policies on marine and coastal biodiversity, giving full recognition to the importance of taxonomy and following closely the development of the Global Taxonomic Initiative. Special consideration should be given to regional perspectives and the setting up of regional centres of taxonomic expertise, as well as to the taxonomic efforts of other intergovernmental programmes, agencies and relevant institutions.

Activities:

- (a) To maintain and update regularly the database of information on experts on marine and coastal biodiversity nominated to the roster; and
- (b) To make the information database available through the clearing-house mechanism.

Time schedule and ways and means: Ongoing activity undertaken by the secretariat.

Budgetary implications: No additional budgetary implications.



Table 1

SUMMARY OF PROGRAMME ELEMENTS AND BUDGET IMPLICATIONS

Programme element	Time	Ways and means	Budget (US dollars)
1	1998-2000	Secretariat meeting of experts 1999	<u>a/</u> \$100,000
2.1	1998-2000	Secretariat Inter-agency task force	<u>a/</u> Additional \$25,000 p.a.
2.2	1998-2000	Related to ongoing work on Art. 7 Possible workshops	up to \$100,000 each
3	1998-2000	Secretariat via clearing-house mechanism Inter-agency task force meeting of experts	<u>a/</u> , <u>b/</u> Additional \$25,000 p.a. up to \$100,000 each
4.1	1998-2000	Secretariat Inter-agency task force	<u>a/</u> Additional \$25,000 p.a.
4.2	1998-2000	Secretariat meetings of experts	<u>a/</u> up to \$100,000 each
5.1	1998-2000	Secondment of secretariat Inter-agency task force and/or meetings of experts	Voluntary contribution Additional \$25,000 p.a. up to \$100,000 each
5.2	1998-2000	Secretariat	<u>a/</u>
6.1	1998-2000	Secondment to secretariat (i) Technical workshop or (ii) Conference	Voluntary contribution \$100,000 to be determined
6.2	1998-2000	Secretariat Cooperation between secretariats	<u>a/</u> Additional \$20,000 p.a.
6.3	1998-2000	Secretariat	<u>a/</u> , <u>b/</u> , <u>c/</u>
7.1	1998-2000	Secretariat	<u>a/</u> , <u>b/</u>
7.2	1998-2000	Secretariat	<u>a/</u> , <u>b/</u>

a/ No additional budgetary implication if the Jakarta Mandate unit is fully staffed in 1998 in accordance with decision III/24 and if budgetary provision for these posts is carried forward for the period 1999-2000.

b/ Staff time in the clearing-house mechanism unit.

c/ Staff time in the national reports and reviews unit.

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Annex I

PROGRAMMATIC LINKAGES 1/

A. World Bank

1. Since 1992, and the adoption of chapter 17 of Agenda 21 by the United Nations Conference on Environment and Development (UNCED), some 25 projects with coastal and marine components have been developed in more than 22 countries, amounting to more than \$325 million. These include a number of planned projects, such as the Indonesia Coral Reef Rehabilitation and Management Project (COREMAP), the Thailand Coastal Resources Management Project, the Madagascar Second Environmental Project and the Mauritius Biodiversity Restoration Project. Components of all these projects reflect many of the concerns of the Jakarta Mandate's five thematic issue areas. The Bank has also published, either alone or in collaboration with a range of partners, a series of analytical papers and research reports which relate to issues identified in the Mandate.

2. Some of the World Bank's main activities in each of the five thematic issue areas are as follows:

1. Integrated marine and coastal area management

3. Integrated coastal zone management (ICZM) has been recognized as the most appropriate tool for achieving many of the objectives of chapter 17 of Agenda 21. Its identification by the Jakarta Mandate has provided important further recognition of its significance in responding to the environmental problems of marine and coastal areas in a manner consistent with environmentally sustainable development. Since 1993, the Bank has been involved in promoting the establishment of integrated coastal zone planning and management in its borrowing countries through awareness creation and capacity-building, investment and partnerships with both Governments and new partners, including non-governmental organizations.

4. Analytical work in this field includes the dissemination of best practices through the recently published Guidelines for Integrated Coastal Zone Management (1996) and a regional report Africa: A Framework for Integrated Coastal Zone Management (1995), as well as a series of country studies resulting from workshops supported by the Bank and the Swedish International Development Cooperation Agency (SIDA) in Seychelles and the United Republic of Tanzania. Since 1994, the World Bank has helped train more than 300 professionals (within and outside the Bank) on principles of ICZM and the tools required for the implementation of programmes for the integrated management of coastal and marine resources, primarily in Africa (see workshop reports above).

5. These programmes provide support for capital investments in water

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5/ Original text appears as annex VII to document UNEP/CBD/JM/Expert/1/5.

supply and sanitation (such as the Lebanon Solid Waste and Environmental Management Project), and marine pollution abatement through projects addressing issues such as improved port reception facilities for ship-generated waste (in the wider Caribbean area) and the Seychelles Biodiversity Conservation and Marine Pollution Abatement Project.

## 2. Protected areas

6. In collaboration with the Great Barrier Reef Marine Park Authority and IUCN, and with the assistance of the IUCN Commission on National Parks and Protected Areas (CNPPA) and the World Conservation Monitoring Centre (WCMC), the World Bank sponsored and produced in 1995 a four-volume report on a global representative system of marine protected areas. The Report recommends priority areas and actions for the creation of a truly representative system and provides guidance to GEF, the World Bank and other funding bodies for investment in marine biodiversity conservation of the world's marine protected areas. Protected area identification and management are components of a number of existing and planned Bank-funded projects.

## 3. Sustainable use of marine and coastal living resources

7. Sustainable use is a component of many of the ICZM projects discussed above, as well as projects such as COREMAP in Indonesia. In 1995, the World Bank supported a workshop on sustainable financing mechanisms for coral reef conservation, the proceedings of which were published. The World Bank is also undertaking analytical work on the valuation of natural resources, including marine and coastal resources, such as coral reef ecosystems (see, for example, The Economic Value of Indonesian Coral Reefs, Cesar, 1996). While the World Bank is moving away from financing fisheries development towards an emphasis on fisheries management carried out through integrated projects, it is currently considering a proposal for a market transformation initiative in the marine area, possibly through the International Finance Corporation's small and medium enterprises GEF programme, to support its borrowing countries' participation in the Marine Stewardship Council Initiative. This initiative, launched in 1996 and formally established in 1997, aims to use market forces to support sustainable fishing by certifying fisheries which meet the principles and criteria for sustainable fishing which are currently being developed.

## 4. Mariculture

8. The Bank is involved in a number of mariculture projects, including the rehabilitation of disused ponds in an environmentally sustainable fashion (in the Thailand Coastal Resources Management Project), and is developing guidelines for the sustainability of mariculture, which include issues of pollution control as well as the escape into the wild of farmed specimens.

## 5. Alien species

9. In addition to the inclusion of guidelines on the escape of farmed specimens in its mariculture guidelines, the Bank has also started analytic work on control of GMOs, through its work on biosafety (see Doyle and Persley, Enabling the Safe Use of Biotechnology: Principles and Practice, 1996).

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B. United Nations Environment Programme

10. With regard to the secretariat's need to strengthen and develop special partnership arrangements with international organizations and institutions, including regional bodies with particular competence in specific areas of marine and coastal biodiversity, as urged by SBSTTA at its second meeting, the representative of UNEP informed the Meeting that the regional seas action plans, conventions and associated protocols provided in many instances more concrete and specific guidance for implementing the strong and broader obligations of the Convention at national level within the framework of regional cooperation.

11. In particular, the detailed obligations contained in the regional seas conventions, including the 1979 Convention on the Protection of the Mediterranean against Pollution (Barcelona Convention), the Cartagena Convention and the 1985 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East African Region (Nairobi Convention) and their protocols on specially protected areas and wildlife, provide - or have the potential to provide - concrete guidelines on these high priority issues of marine biodiversity for the implementation of the Convention at the regional level.

12. In the light of the above, UNEP recommended that programmatic linkages between the Convention and the UNEP regional seas programme should be fostered through the development of cooperative programmes which would specifically link the work programme of the Convention with relevant components of the various regional seas action plans and programmes and their associated conventions and protocols.

13. The cooperative programmes would provide the foundation to enable the two secretariats subsequently to develop further programmatic linkages to achieve cooperation between and harmonization of their programmes.

14. The cooperative programmes could include, inter alia:

(a) Elaboration of the role of regional convention secretariats in the implementation of the Jakarta Mandate for the conservation and sustainable use of marine and coastal biological diversity;

(b) Establishment or strengthening, as necessary, of a regional coordinating mechanism and procedures for the collection and dissemination of information that would optimize the use of limited financial and human resources. The availability of, accessibility to and appropriate use of information are particularly critical issues in the implementation of conventions;

(c) Development of coordinated and integrated information management systems and databases as the first phase of a broader effort at developing an integrated information system with other biodiversity-related conventions;

(d) Establishment of specialized networks of individuals and institutions, and the strengthening of linkages among them in support of more integrated policies and implementation measures at national levels;

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(e) Establishment of a regional coordination mechanism for undertaking assessment studies, other than national, concerning the state of both individual species and ecosystems; and

(f) Identification of priority sectors and activities pursuant to the Convention and the development, as necessary, or updating of environmentally sound technologies and environmentally sound management practices. These may serve as resources for national actions and lead to agreement on common measures at a regional level.

15. The meeting took note of the offer by UNEP and agreed to recommend that the secretariat, in addressing the provisions of SBSTTA recommendation II/10, should strengthen and develop special partnership arrangements with the UNEP secretariat for the regional seas programmes with the objective of establishing programmatic linkages between the Convention on Biological Diversity and the regional seas action plans and programmes, and the associated conventions and protocols.

C. United Nations Educational, Scientific and Cultural Organization

1. Intergovernmental Oceanographic Commission

16. The assistance that IOC could make available to activities within the framework of the Convention on Biological Diversity, specifically in the field of coastal and marine biodiversity, would initially concern the following areas:

(a) Integrated coastal area management (ICAM): Assistance in the development of guidelines for the operationalization of the ICAM concept for the implementation of the Jakarta Mandate. This would be done, inter alia, through the association of IOC with the studies in the ICAM field being carried out by the Centre for the Study of Marine Policy, in the United States of America;

(b) Scientific issues and uncertainties: Provision of the scientific and technical input that might be required, through the results of the activities carried out by relevant IOC groups of experts (for example, on marine pollution aspects), including on capacity-building issues;

(c) Indicators for assessment and monitoring: Assistance in the development of indicators for assessment and monitoring purposes. In relation to monitoring, the activities within the relevant modules of the Global Ocean Observing System (GOOS) might complement those under the Convention (for example, the activities within the GOOS Health of the Ocean module).

17. Rationale: IOC is an intergovernmental body dealing with international scientific cooperation in the field of oceanography. Its activities are grouped in programmes (science, services and training programmes), the design and implementation of which are guided by competent intergovernmental panels and group of experts. The products of the different activities range from atlases (for example, bathymetric charts) to technical manuals and guidelines on standardized research and monitoring methodologies (for example, for

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studies on specific contaminants), databases for information and training purposes (for example, reference marine and coastal checklists, and related bibliographies). Networking activities are also carried out, both in terms of human expertise and research institution resources (for example, the Regional Cooperation in scientific Information Exchange (RECOSCIX) network) and issue-oriented research and monitoring networks (for example, the Global Coral Reef Monitoring Network (GCRMN)). Regional marine science and technology networking exercises related to the management of oceanographic systems, focusing mainly on ICAM, capacity-building and risks issues, are also being implemented (for example, for Latin America and the wider Caribbean, through an agreement between IOC and the European Federation of Networks (FER), mainly financed by the European Union). Activities and programmes are based on regional needs and priorities identified by Member States through the IOC regional subsidiary bodies.

## 2. Coastal Regions and Small Islands Unit

18. Fully in line with the recommendations of the Convention, in 1996 UNESCO launched its Coastal Regions and Small Islands (CSI) initiative. This involves a joint effort of five long-running programmes in the environmental and social science sectors: the Man and Biosphere Programme (MAB), IOC, the Management of Social Transformation Programme (MOST), the International Hydrological Programme (IHP) and the International Geological Correlation Programme (IGCP), as well as relevant programmes in the fields of culture, communication and education.

19. CSI is a platform for cross-sectoral and cooperative action to assist Member States towards environmentally sound, socially balanced and culturally appropriate development in coastal regions and small islands. It supports, in particular, the importance and the necessity of a holistic approach to sustainable development and the protection of coastal areas, and to the involvement of local communities in the conservation and management of coastal resources.

20. Through a regional approach, the task of CSI is to assist UNESCO Member States towards integrated coastal zone planning and management. Field projects are being undertaken in different regions: Jakarta Bay (Indonesia), Ulugan Bay (Philippines), Dakar (Senegal), Gulf of Finland (Finland) and Rio de la Plata (Uruguay). Since the CSI initiative is part of the Organization's response to calls for cross sectoral, integrated approaches to environmental problems and to biological diversity conservation in coastal regions and small islands, it is possible to link UNESCO/CSI activities and expertise within the framework of the Convention on Biological Diversity. In the field of ICAM, CSI projects can be relevant tools for the evaluation of the lessons learned in ongoing cross-sectoral case studies.

## 3. Man and Biosphere

21. Consistent with the Convention approach, the MAB programme of UNESCO has been advocating an integrated approach to natural resources management and protection since the early 1960s. In this context, MAB has focused on identifying and addressing the specific issues for the conservation and sustainable use of living coastal and marine resources, emphasizing the application of the UNESCO biosphere reserve concept in coastal and marine

ecosystems and addressing related capacity-building needs. Over the past decade, experience has been accumulated in the management of coastal and marine protected areas and important innovations have been made in the management of biosphere reserves themselves.

22. In this respect, challenges such as the development of cluster and transboundary biosphere reserves are of great interest. The application of new communication technologies, such as MABnet, is greatly facilitating the implementation of MAB ideas. In respect of the Convention, it is also important to mention the regional networks of biosphere reserves that MAB is creating to facilitate the exchange of information and experience.

#### D. European Union

23. Under European Community Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, it is for the Member States to designate special conservation areas to provide a coherent European ecological network, called Natura 2000. The Directive applies automatically to marine habitats and marine species within territorial waters. Establishment of the Natura 2000 network in the European Community is not incompatible with the maintenance of sustainable fisheries or aquaculture in the designated areas. A detailed work programme and a precise timetable have been established to ensure the introduction of this network.

24. Besides marine protected areas, the European Union operates several closed areas or boxes as an additional tool in fisheries management. The restrictions on fishing in these areas differ according for the objectives for the closure. Traditionally, the areas are instituted mainly in order to give additional protection to juvenile fish and to spawning fish at, or close to, spawning grounds. Depending on the objectives, the restrictions define, first, the geographical area of the closure; second, the time period (namely all or part of the year); and, third, access by fishing vessels and fishing methods.

25. Although the purpose of a closure is the protection of targeted commercial species, the areas also provides protection to other marine resources. Closed areas can apply both in coastal areas and off-shore in the open sea.

26. Where integrated coastal management is concerned, the Commission has launched a programme designed to demonstrate the conditions needed for sustainable development to become a reality in all the diverse situations along Europe's coastline. The programme is controlled jointly by the departments of the Commission responsible for the environment, for regional policy and for fisheries. It thus represents an integrated approach in terms of responsibility and application. Its purpose is to learn from the practices of integrated management in areas where these practices are well developed, in order to achieve sustainable and responsible fisheries.

#### E. Food and Agriculture Organisation of the United Nations

27. Many of the objectives of the Convention on Biological Diversity are currently, and have been, central to the programme of the FAO Fisheries Department. For example, maximum and optimum sustainable yields of capture

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fisheries embody the sustainable use of aquatic biological diversity and have been guiding concepts in fisheries management for decades; in addition, integrated area management has been recognized as the best way to utilize sustainably aquatic habitats in the face of development and human population growth. FAO Fisheries long ago recognized, and has promoted awareness of the fact, that conservation and protection of aquatic habitats are vital to ensuring productive capture fisheries. In the face of over-capitalized industrialized fisheries and intensive aquaculture systems, often operated in developing countries by large international companies, FAO Fisheries is promoting awareness of the environmental and socio economic concerns resulting from unregulated development

28. In the sector on aquatic genetic resources, the Fisheries Department's activities started in earnest in 1992 with the convening of an expert consultation on the utilization and conservation of aquatic genetic resources. The consultation identified priorities and general principles for the sustainable use and conservation of genetic resources in both natural and farmed aquatic species. In close association with regional fisheries bodies and other international organizations, governmental and non-governmental organizations, plans of actions and guidelines on conservation of aquatic genetic resources were developed in 1995 through the FAO/Japanese International Conference on the Sustainable Contribution of Fisheries to Food Security and the FAO Code of Conduct for Responsible Fisheries. In 1995, FAO, with the Government of Sweden, elaborated guidelines for the application of the precautionary approach to fishing management and the use of introduced species.

29. Awareness of key issues and principles concerning aquatic conservation has been promoted through numerous publications, such as FAO Fisheries Technical Papers and FAO species catalogues, and through databases such as FAO FishStat PC, AquaStat PC and FishBase, the last of which is jointly produced with ICLARM. The Fisheries Department has formed a strong link with ICLARM in the area of genetic resources. Several workshops, international networks on genetic resources and publications have resulted. A major meeting on policy development for aquatic genetic resources is being planned for 1998.

30. The decisions of the Conference of the Parties, such as the Jakarta Mandate and decision III/11 on agrobiodiversity, are significant steps for the international community and their implementation will help ensure the sustainable use and conservation of many aquatic resources. The Fisheries Department's programme is fully in line with such decisions, as exemplified in the FAO Code of Conduct for Responsible Fisheries, the United Nations Convention on the Law of the Sea and the recently expanded Commission on Genetic Resources for Food and Agriculture. Although sustainable use is the key concept in the mandate of FAO, in the fisheries sector this is only possible through conservation and protection of the aquatic habitat and an appreciation of the interests of all stakeholders.

F. Coastal Management Centre - National Institute for Coastal and Marine Management (RIKZ) (Netherlands)

31. The mission of the Coastal Management Centre is to stimulate, organize, facilitate and combine bilateral efforts in the field of ICZM within

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multilateral international frameworks. The board of governors of the Coastal Management Centre, comprising representatives of six ministries that have responsibilities and expertise in ICZM, coordinates the programmes and activities on coastal management. The ministries involved are: the Ministry of Transport, Public Works and Water Management; the Ministry of Housing, Physical Planning and Environment; the Ministry of Agriculture, Nature Management and Fisheries; the Ministry of Education and Science; the Ministry of Economic Affairs; and the Ministry of Foreign Affairs, Directorate-General of International Cooperation.

32. The Coastal Management Centre is active in 16 regions and countries, including West and North Africa, Eastern Europe, South America, South Asia, South East Asia and the Black Sea countries. The Centre initiates and stimulates IMCAM projects by organizing the input of appropriate partners, facilitating finding funds and certifying the quality control of the projects. Training and the development of tools for IMCAM implementation are among the major activities of the Centre.

#### G. Baltic Sea region

33. The main relevant intergovernmental instrument in the Baltic region is the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention), 1974, revised in 1992. The new edition of the Helsinki Convention stresses, inter alia, the importance of the protection of biodiversity. The executive body of the Helsinki Convention is the Baltic Marine Environment Protection Commission (Helsinki Commission). A specific division covering all aspects of biodiversity has been established within the Helsinki Commission's Environmental Committee.

34. With regard to alien species, an assessment of the distribution of alien species is contained in the Third Periodic Assessment of the State of the Marine Environment of the Baltic Sea, 1989-1993, produced by the Helsinki Commission on the basis of the Baltic Monitoring Programme. Studies on the distribution, ecological physiology and effects on local communities are conducted at both national and international (European Community, Nordic Council) levels. A specific working group on alien species has been established by the organization Baltic Marine Biologists (BMB) - a scientific non-governmental organization working in the Baltic region.

35. With regard to marine and coastal protected areas, a system of such areas in the Baltic has been established by the Helsinki Commission. The selection of potential marine and coastal protected areas has been undertaken primarily by a joint BMB/WWF working group at the request of the Helsinki Commission. Few of the proposed areas, being relatively small, extend across national borders. Parties to the Helsinki Convention are now urged to set in place the legal and institutional basis for the establishment of the marine and coastal protected areas. The basic criterion in the selection of the marine and coastal protected areas was the protection value of the biodiversity (for example, whether these were sites of naturally high diversity, sites where seabirds moult and overwinter, or fish spawning sites).

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36. With regard to IMCAM, this approach forms part of the national environmental protection policy of Latvia. Several IMCAM projects are currently under elaboration. In view of the great importance of inland processes in this region, the IMCAM approach has been closely allied to integrated watershed management around the Baltic.

#### H. The North Sea region

37. The fourth International Conference on the Protection of the North Sea, held in Bergen, Norway, in March 1997 (involving both environment and fisheries ministers), constituted an excellent initiative, leading to the formulation of regional consensus and cooperative actions on the management of marine and coastal resources with a biodiversity perspective in one area.

38. The Wadden Sea area presents a good example of multilateral cooperation (between Denmark, Germany and the Netherlands) in marine and coastal area management. Cooperation is based upon the Joint Declaration on the Protection of the Wadden Sea (1982), which contains a statement of intent to coordinate national activities and measures resulting from international legal instruments aimed at nature protection, in particular the Ramsar Convention, CMS, the Convention on the Conservation of Wildlife and Natural Habitats in Europe (Bern Convention), European Community Council Directive 74/409/EEC on the conservation of wild birds and other relevant European Community directives. In 1991, at the fourth International Conference on the Protection of the North Sea, guiding principles for trilateral cooperation, common management principles and common objectives for human use were developed. At the seventh Wadden Sea Trilateral Conference in 1994, the first results of a trilateral management plan, including eco-targets, were discussed. Further progress will be examined at the eighth Wadden Sea Trilateral Conference in 1997.

Annex II

LIST OF COUNTRIES HAVING SUBMITTED NAMES TO THE ROSTER OF EXPERTS ON MARINE  
AND COASTAL BIOLOGICAL DIVERSITY  
(as at 1 May 1997)

- |     |                      |     |  |
|-----|----------------------|-----|--|
| 1.  | Antigua and Barbuda  | 39. | Kenya  |
| 2.  | Argentina            | 40. | Latvia   |
| 3.  | Australia            | 41. | Lithuania  |
| 4.  | Austria              | 42. | Madagascar   |
| 5.  | Bahamas              | 43. | Marshall Islands   |
| 6.  | Barbados             | 44. | Mexico   |
| 7.  | Belgium              | 45. | Morocco  |
| 8.  | Belize               | 46. | Netherlands  |
| 9.  | Benin                | 47. | New Zealand  |
| 10. | Brazil               | 48. | Nicaragua  |
| 11. | Brunei Darussalam    | 49. | Nigeria  |
| 12. | Cambodia             | 50. | Norway   |
| 13. | Chile                | 51. | Pakistan   |
| 14. | China                | 52. | Peru   |
| 15. | Colombia             | 53. | Philippines  |
| 16. | Cook Islands         | 54. | Republic of Korea  |
| 17. | Costa Rica           | 55. | Republic of Moldova  |
| 18. | Croatia              | 56. | Russian Federation   |
| 19. | Cuba                 | 57. | Saint Lucia  |
| 20. | Cyprus               | 58. | Senegal  |
| 21. | Denmark              | 59. | Singapore  |
| 22. | Dominica             | 60. | Slovakia   |
| 23. | Ecuador              | 61. | South Africa   |
| 24. | Egypt                | 62. | Sri Lanka  |
| 25. | European Commission* | 63. | Sweden   |
| 26. | Finland              | 64. | Switzerland  |
| 27. | France               | 65. | Syria  |
| 28. | Georgia              | 66. | Thailand   |
| 29. | Germany              | 67. | Tunisia  |
| 30. | Ghana                | 68. | Turkey   |
| 31. | Greece               | 69. | Ukraine  |
| 32. | Iceland              | 70. | United Kingdom of Great<br>Britain and Northern<br>Ireland |
| 33. | India                | 71. | United Republic of Tanzania                                |
| 34. | Indonesia            | 72. | Uruguay  |
| 35. | Ireland              | 73. | Vietnam  |
| 36. | Israel               | 74. | Zimbabwe   |
| 37. | Japan                |     |  |
| 38. | Jordan               |     |  |

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\* Regional economic integration organization.

Annex III

SUMMARY OF VIEWS AND PRIORITIES

This grid reflects the discussions of the meeting and was used as a working document to structure and assemble information (see paragraph 17 of the report UNEP/CBD/JM/Expert/1/5). It has been revised by the secretariat to incorporate further amendments agreed by the meeting (see paragraph 20 of UNEP/CBD/JM/Expert/1/5). The meeting recommended that the format of the grid could be used to incorporate further information as this becomes available.

Subject	Guiding principles/interpretations	General considerations	Gaps in knowledge/Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
Integrated marine and coastal area management (IMCAM)	<p>Natural/ecological boundaries should be adopted; in some other cases administrative boundaries might be sufficient</p> <p>Define "healthy ecosystem" and "harmful effects"</p>	<p>IMCAM as the overarching concept to address, inter alia, marine and coastal protected areas, sustainable use of marine and coastal living resources, mariculture and alien species; this has legal and institutional implications</p>		<p>Guidelines on integrated management by, inter alia, World Bank, OECD, IUCN, World Coast Conference; references to integrated management in, inter alia, Agenda 21, United Nations Framework Convention on Climate Change, Global Programme of Action, UNESCO Coastal and Small Island Initiative, ICRM, FAO Code of Conduct</p>	
Integrated marine and coastal area management (cont.)		<p>Transboundary issues for IMCAM implementation might require regional</p>		<p>Regional seas programmes</p>	<p>Need for Parties to coordinate national efforts</p>

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
		<p>cooperative actions</p> <p>Participation of the community in resource management and formulating defensible decision rules</p> <p>Training is an essential component for building IMCAM framework</p> <p>Best scientific knowledge to be considered for the formulation of IMCPM programmes</p>		<p>UNESCO/CSI</p> <p>IOC IMCAM training courses</p>	
Integrated marine and coastal area management (cont.)			<p>Information (including social and economic research) is needed on uses of the coastal and marine resources and on the available legal mechanisms having authority over those activities</p> <p>Need to identify and select proper indicators, including social indicators and other abiotic indicators in the context of</p>	<p>World Resources Institute-IUCN-UNEP biodiversity indicators report for policy-makers; work by the Joint Group of Experts on the Scientific</p>	

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
			ecosystem assessment	Aspects of Marine Pollution (GESAMP); outcome of workshop on biodiversity indicators (IUCN/BIONE7/others CSD, New York, April 1997)	
Marine and coastal protected areas		Need for early warning monitoring systems for environmental changes which might negatively affect biodiversity	Research on the effects of marine and coastal protected areas on population size and stock	IOC/Health of the Ocean Panel-GOOS	
Marine and coastal protected areas (cont.)		Develop self- funding mechanisms and involvement of and management by the private sector  Essential elements capacity-building, human resource training; education/ information; community involvement explaining the rationale of marine			IUCN-working group  MAB-Biosphere

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for: the Jakarta Mandate	Collaborative actions/ network (see also annex I)
		<p>and coastal protected areas; taxonomy</p> <p>Opportunities for marine and coastal protected areas in a cross-boundary setting</p> <p>Opportunities for marine and coastal protected areas in areas beyond national jurisdiction/high seas (possible use of the large marine ecosystem concept for such purpose)</p> <p>Development of ecological networks and corridors</p>		<p>Regional seas protocols</p>	
<p>Marine and coastal protected areas (cont.)</p>	<p>Combining conservation and sustainable use perspectives, including user rights</p>			<p>IUCN/categorization of marine and coastal protected areas</p>	<p>IUCN</p>
<p>Conservation and sustainable use of marine and coastal living resources</p>	<p>Precautionary approach should be employed as a management tool as well as a scientific device (having information gathering</p>			<p>Examples of practical application of the precautionary approach: Commission for the Conservation of Antarctic Marine</p>	<p>Regional fisheries organizations</p>

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
	capabilities/improving certainty)			Living Resources (CCAMLR)  To be implemented: FAO Code of Conduct on Responsible Fisheries; 1995 Agreement on Straddling and Highly Migratory Fish Stocks	
Conservation and sustainable use of marine and coastal living resources (cont.)		Analysis of collected data as a tool to determine sustainability	Limited knowledge base: reliable data (collection) ecosystem approaches ecosystem disturbances over-harvesting	Initiative within the private sector: Marine Stewardship Council	
Mariculture		Economic vulnerability should be an element of (environmental impact)			With regard to commercial fish species, explore the possibility of linkages with CITES

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
		<p>assessments, including coastal market assessments (i.e., longer-term economic effect of mariculture, temporal spread of the entire activity).</p> <p>Operationalize sustainable mariculture practices within the framework of IMCAM (inter alia, through capacity building/training courses/ community involvement)</p>			
Mariculture (cont.)		<p>Mariculture for economic benefits only and mariculture for ecological (biodiversity benefits - need impacts be addressed differently?)</p> <p>Addressing second-order effects in the context of food for mariculture</p>	<p>Identifying replacements of fish meal (farmer access to lower cost food)</p>	<p>World Bank is producing</p>	

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
Mariculture (cont.)			Development of sustainable techniques for mariculture	Guidelines for sustainable mariculture (including the issue of site selection)	
			Development of sustainable techniques for mariculture		
			Polyculture/integrated farming system for inland species as potential for marine aquaculture		
			Development of low impact emergency techniques (e.g. disease mitigation) which are sustainable		
			Identification of suitable species for mariculture which are in a lower trophic level		
			Continuing research on breeding technologies to enhance genetic aspects (capture and wild population)	ICLARM	
			Rehabilitation and		

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
Alien species		Systems under stress are more vulnerable to introductions	restoration of abandoned mariculture sites		
Alien species (cont.)		Primary focus on prevention of introduction of alien species; eradication almost impossible; mitigation of effects only in emergency/extreme cases			
	Article 8 (h) of CBD should be understood as including genetically differentiated populations and GMOs	Deploy resources to monitor impacts and research to address interactions between local and introduced populations and species	Assess the impacts of genetic mixing, specifically paying attention to sub-populations (and GMOs)		
		Legal instruments may have a stronger character	Research is needed on local species value/document local species and their culture performance		

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Subject	Guiding principles/ interpretations	General considerations	Gaps in knowledge/ Research priorities	Existing or planned non-CBD activities relevant for the Jakarta Mandate	Collaborative actions/ network (see also annex I)
Alien species (cont.)		<p>CBD should link existing databases through its clearing-house mechanism;</p> <p>Databases should also address the ecological effects and the socio-economic effects of introductions</p> <p>Need to harmonize and evaluate available data for the specific purpose of biodiversity</p>	<p>Quarantine conditions that may reduce invasive effects of alien species</p>	<p>FAO database; discussion list on E-mail; ICES-IMO Working Group on the Transfer of Marine Organisms; ICES-IOC-IMO Study Group on Ballast Waters and Sediments; ICLARM Fish Base</p>	<p>OSPAP (under development; inventory of unintentionally introduced species within the region and considering the possibility of setting up database)</p>
		<p>Develop process to deal with careless or deliberate introductions/especially transboundary effects</p> <p>General lack of capacity needs to be addressed through education and public awareness</p>		<p>Inter alia, environmental educational programme of UNESCO</p>	

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Annex IV

ELEMENTS OF A THREE-YEAR WORK PLAN TO ADDRESS THE FIVE THEMATIC  
ISSUE AREAS IDENTIFIED BY THE JAKARTA MANDATE  
PROPOSED BY THE FIRST MEETING OF EXPERTS

Evaluation of the precautionary approach as applied to the conservation and  
sustainable use of marine and coastal biological diversity

1. As a core task, a thorough evaluation of the precautionary approach as developed in the relevant literature, legal instruments and operational practices should be undertaken in relation to the five thematic issue areas of the Jakarta Mandate.

Time: over the three-year period

Ways and means: Conference of the Parties

A. Integrated marine and coastal area management

2. Review of the existing instruments relevant to IMCAM and their implication for the application of the Convention.

Time: medium/high priority

Ways and means: secretariat

3. Develop guidelines for ecosystem assessments, paying special attention to the need to identify and select indicators, including social and abiotic indicators, separating natural from human-induced effects.

Time: medium/high priority

Ways and means: linkages to other organizations and initiatives

B. Marine and coastal living resources

4. Address the need to develop ecosystem level 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:

(a) Biodiversity: Impacts on biodiversity;

(b) Sustainable exploitation:

(i) Over-capitalization;

(ii) Socio-economic needs;

(c) Ecosystem effects:

(i) Pollution, including remedial operations;

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- (ii) By-catch;
- (iii) Species balance;
- (iv) Introduction of alien species;
- (iv) Harmful fishing practices and techniques;
- (v) Taking of ornamental and aquarium fish and corals;
- (vi) Abiotic effects;
- (vii) Changes in environmental variables which induce structural changes at the community level.

Time: high priority

Ways and means: workshop and ongoing facilitation by the Convention process

#### C. Marine and coastal protected areas

5. The secretariat should work with relevant intergovernmental organizations and Parties on operational considerations of marine and coastal protected areas, keeping in mind the six categories of protected area as defined by the World Conservation Union (IUCN), and especially taking due consideration of:

- (a) Economic factors;
- (b) Capacity-building;
- (c) Legal and institutional issues;
- (d) Education and information;
- (e) Information exchange between sites, with the aim of networking marine and coastal protected areas;
- (f) Local and traditional use;
- (g) Linking of conservation and sustainable use, (for example, in the UNESCO Man and Biosphere Programme biosphere reserves).

Time: high priority

Ways and means: secretariat in collaboration with Parties and relevant intergovernmental organizations and non-governmental organizations, and regional and national training courses for capacity-building

6. Conduct research on the effects of marine and coastal protected areas on population size and dynamics, within the protected areas and in surrounding areas.

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Time: ongoing

Ways and means: national activity and specific research projects, including international coordination and activities; and desk study to gather and assimilate information

#### D. Mariculture

7. Convene a meeting of experts to evaluate the application to mariculture of precautionary approaches to fisheries.

Time: within two years

Ways and means: through partnership with technical expert groups, such as FAO, the International Council for the Exploration of the Sea (ICES) and the International Centre for Living Aquatic Resources Management (ICLARM)

8. Develop sustainable mariculture, with attention, inter alia, to:

- (a) Application of the precautionary approach;
- (b) Developing value criteria to separate mariculture for economic benefits only and mariculture for biodiversity (for example, species recovery) and formulating criteria to evaluate the effects of these respective forms of mariculture;
- (c) Development of sustainable mariculture practices, especially for shrimp culture;
- (d) Researching polyculture approaches in marine aquaculture;
- (e) Development of emergency techniques;
- (f) Identification of suitable species for mariculture which are in a lower trophic level;
- (g) Documenting local species and their culture performance (for the purpose of identifying local species as an alternative to alien introduction);
- (h) Assessment of the impacts of genetic mixing;
- (i) Assessment of the potential impacts of the release of genetically modified organisms (GMO) into the wild;
- (j) Identification of replacements for fish meal (farmer access to lower cost food);
- (k) Continuation of research on breeding technologies to enhance genetic aspects of biodiversity for captive and wild populations; and
- (l) Development of guidelines for the restoration and rehabilitation of mariculture sites.

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Time: high priority

Ways and means: Cross-sectoral efforts by Parties to the Convention; Establishing linkages (such as through the clearing-house mechanism and/or national Convention focal points) with the FAO regional information system.

9. Develop linkages with CITES on the application of CITES appendices to vulnerable and endangered commercial species.

Time: low priority

Ways and means: through the existing memorandum of cooperation with CITES

#### E. Alien species

10. Consider the effects of alien species introduction, specifically in the context of the characteristics of the species and the characteristics of the recipient ecosystems.

Time: planning in the first year - convene in the second year

Ways and means: workshop, with the participation of, and/or building upon, the experience and work of relevant organizations (such as ICES)

11. This activity has two components:

(a) Examine the need for additional effective legal instruments related to the introduction of alien species; in particular to provide input on biodiversity-related matters into the International Maritime Organization (IMO) discussion on its International Guidelines for Preventing the Introduction of Unwanted Aquatic Marine Organisms and Pathogens from Ship's Ballast Water and Sediment Discharges.

(b) Establish a process to deal with reckless or deliberate introductions (especially where transboundary effects have occurred).

Time: (a) immediate; (b) longer-term

Ways and means: (a) and (b) through the participation of the Executive Secretary in the IMO proceedings. In preparing for this participation, the Executive Secretary may, first, use the outcome of the workshop on alien species for input into the IMO discussions and, second, ask for or request input and views on biodiversity related matters from experts on the roster, including contributions on the issue referred to in component (b) above.

12. Establish an incident list on introductions through the national reporting process.

Time: to be considered by the fourth meeting of the Conference of the Parties

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Ways and means: secretariat to distil references to incidents from national reports

F. General elements

13. The secretariat should assemble a database of ongoing case studies together with potential cooperating bodies on marine and coastal biodiversity, specifically in relation to integrated marine and coastal area management.

Time: ongoing activity

Ways and means: initially, to formulate questionnaires and to request input, and deskstudy to gather and compile information and to review and analyse literature and reports.

14. Development of a database of experts, starting from the roster, to be available for the development and implementation of specific elements of national policies on marine and coastal biodiversity, giving full recognition to the importance of taxonomy and following closely the development of the Global Taxonomic Initiative. Special consideration shall be given to regional perspectives and the setting up of regional centres of taxonomic expertise, and the taxonomic efforts of other intergovernmental programmes, agencies and relevant institutions.

Time: ongoing

Ways and means: clearing-house mechanism.

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