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AD HOC TECHNICAL EXPERT GROUP ON
PROTECTED AREAS
First meeting
Tjärnö, Sweden, 10-14 June 2003

REPORT OF THE AD HOC TECHNICAL EXPERT GROUP ON PROTECTED AREAS

(Unedited version)

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INTRODUCTION

A. Background

1. At its fourth meeting, the Conference of the Parties (COP) selected protected areas as one of the three themes for in-depth consideration at its seventh meeting (decision IV/16, annex II). In order to facilitate the preparatory process for the seventh meeting of the Conference of the Parties, the Executive Secretary developed a proposal (UNEP/CBD/COP/6/2) outlining specific activities and means for undertaking the work, including the use of an ad hoc technical expert group to provide key input into the process. The proposal was welcomed by the Conference of the Parties at its sixth meeting (decision VI/30).

2. The terms of reference of the expert Group were approved in decision VI/30 as follows:

(a) Review methods and approaches for the planning and management of protected areas including options for appropriate policies, strategies, and practices consistent with the objectives of the Convention;

(b) Identify ecosystem and bioregional approaches to protected area management and sustainable use of biological diversity;

(c) Identify mechanisms to enhance stakeholder involvement;

(d) Propose methods for developing systems plans and integrating biological diversity considerations into sectoral strategies and plans;

(e) Identify options for management of transboundary protected areas; and

(f) Based on the consideration of the above, propose options and priority actions required for effective establishment and management of protected areas.

3. In addition, the Open-ended Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010, held from 17-20 March 2003 in Montreal requested, in paragraph 1 of its recommendation 1A, that the Ad Hoc Technical Expert Group on Protected Areas, the Subsidiary Body on Scientific, Technical and Technological Advice at its ninth meeting and the Conference of the Parties at it Seventh meeting consider the outcome of the World Summit on Sustainable Development relating to hotspots, ecological networks and corridors and other areas essential for biodiversity in the context of the work on protected areas, taking into account other relevant thematic programmes and cross-cutting issues, in the context of national strategies and action plans, and focusing on biodiversity loss.

4. The meeting of the technical expert group was held from 10 to14 June 2003 at the Tjärnö Marine Biological Laboratory in Tjärnö, Sweden, with financial support from the Government of Sweden. The venue was an appropriate field location for enhancing the technical and scientific nature of the meeting.

5. The members of the expert group were selected by the Executive Secretary in consultation with the Bureau of the Subsidiary Body on Scientific Technical and Technological Advice (SBSTTA) from nominations provided by national focal points of the Convention on Biological Diversity (CBD). The experts were selected based on their competence in the relevant field of expertise, with due regard to geographical representation and to the special conditions of the least developed countries and small island developing states. Representatives of local and indigenous communities as well as relevant international organizations were also invited.

B. Attendance

6. The meeting was attended by (i) Government-nominated experts from Canada, Chile, France, Egypt, India, Malaysia, Mozambique, Mexico, New Zealand, Netherlands, Palau, Russia, St Lucia, Senegal, Sweden, Tanzania, Ukraine, United Kingdom and (ii) observer experts from the World Conservation Monitoring Centre (UNEP-WCMC), the United Nations Educational, Scientific and

Cultural Organization's Man and the Biosphere (MAB) programme, the United Nations Development Programme, World Resources Institute (WRI),, BirdLife International, Conservation International, The Nature Conservancy, the World Heritage Convention, IUCN-the World Conservation Union, the World Wide Fund for Nature (WWF), Greenpeace International and the United Nations University. A list of participants is attached as Annex III.

ITEM 1 OPENING OF THE MEETING

7. The meeting was opened by Mr. Kalemani Jo Mulongoy, Principal Officer, Scientific, Technical and Technological Matters Division, on behalf of the Executive Secretary of the Convention on Biological Diversity at 10:30 a.m., on Tuesday 10 June 2003. In his statement, he welcomed the participants and mentioned the importance and timeliness of this ad hoc technical expert group meeting. He also highlighted the role of protected areas in achieving the objectives of the convention and elaborated the road map for protected areas within the Convention through the World Parks Congress, the ninth meeting of SBSTTA to the seventh meeting of the COP. He paid tribute to the Government of Sweden for generously sponsoring and hosting this meeting in a sylvan setting and for their excellent hospitality as well as all other Governments and organizations that supported participants.

8. Mr. Jan Terstad of the Swedish Ministry of Environment welcomed the participants on behalf of the Government of Sweden and made reference to the high level round table that had taken place the previous week in The Hague on the role of protected areas and ecological networks in biodiversity policies.

9. Mr. Per Wramner, Chairman of the Swedish Scientific Council on Biological Diversity welcomed the participants on behalf of the Swedish Scientific Council on Biological Diversity. He outlined the work of the Council and described the successful association between the Council and the Convention in organizing the technical meetings of marine coastal biological diversity (in 1995) and agriculture biological diversity (in 1996) in Sweden, and fresh water biological diversity (in 1997) in collaboration with Norway.

10. Ms. Kerstin Johannesson, Director of the Tjärnö Marine Biological Station also welcomed the participants and described the marine biological station and the Tjärnö nature reserve. She emphasized the important role of stakeholder participation in the planning and management of protected areas by describing recent experience in Tjärnö.

11. Participants introduced themselves and highlighted their fields of expertise and key areas of their work relevant to the theme of the meeting.

12. The representative of the Executive Secretary gave a brief presentation describing the mandate of the group, the expected output, the guidance from the CBD and COP decisions, the process towards COP 7 through the World Parks Congress, the ninth meeting of SBSTTA and the linkages with other ongoing processes.

13. Mr. Jacques Bakker, Deputy Director, Nature Management of the Government of the Netherlands presented the outcome of the High Level Round Table on the Role of Protected Areas and Ecological Networks in Biodiversity Policies held in The Hague on 5 and 6 June 2003. His presentation covered the outcome of the WSSD, the objective of the Round Table, concept of ecological network and future perspectives.

14. Ms. Sarah George presented the outcome of the Marine and Coastal Protected Areas AHTEG and its relevance to the work of the present AHTEG.

ITEM 2 ORGANIZATIONAL MATTERS

2.1. Election of officers

15. The participants elected Mr. Per Wramner from Sweden and Ms Sarah George from St Lucia, as co-chairs of the meeting.

2.2. Adoption of the agenda

16. The Group adopted the following agenda on the basis of the provisional agenda proposed in document UNEP/CBD/AHTEG-PA/1/1 and agreed that the agenda as well as the organization of work (item 2.3 below) should be kept flexible while addressing the full breadth of its mandate:

1. Opening of the meeting.
2. Organizational matters:
   - 2.1 Election of officers;
   - 2.2 Adoption of the agenda
   - 2.3 Organization of work.
3. Substantive issues:
   - 3.1 Status and trends of protected areas, including their role and value;
   - 3.2 Planning, establishing and managing protected areas and networks:
     - (a) Review of methods and approaches, appropriate policies and strategies for planning and establishment of protected areas;
     - (b) Methods for developing systems plans and integrating biodiversity into sectoral plans and strategies;
     - (c) Mechanisms for stakeholder involvement;
     - (d) Identification of ecosystem and bioregional approaches for protected-area management and sustainable use of biodiversity;
     - (e) Transboundary protected areas;
   - 3.3 Meeting the costs of protected areas;
   - 3.4 Measuring effectiveness of protected areas;
   - 3.5 Draft programme of work on protected areas under the Convention on Biological Diversity.
4. Preparation and adoption of the report:
   - 4.1 Determination of need for follow-up work;
   - 4.2 Preparation of report;
   - 4.3 Adoption of report.
5. Other matters.
6. Closure of the meeting.

2.3. Organization of work

17. The AHTEG agreed to consider all issues first in plenary and to establish working groups as needed to draft elements and recommendations on each point in the mandate. In the Plenary on Wednesday on 11 June, the participants agreed to establish five working groups (WG) to consider the following topics:

(a) Key protected areas concepts and their interrelationship (WG I chaired by Mr. Stuart Chape);

(b) Planning and selecting protected area systems and sites: reviewing methods and their scientific / ecological basis (WG II chaired by Mr. Luis Suarez);

(c) Managing protected areas, building capacity and evaluating effectiveness (WG III chaired by Mr. Kenton Miller);

(d) Mechanism for stakeholder involvement (WG IV chaired by Mr. Jan Terstad); and

(e) Transboundary protected areas (WG V chaired by Mr. Yaroslav Movchan)

18. The group met in plenary eight times and in working groups four times.

ITEM 3 SUBSTANTIVE ISSUES

19. Mr. Charles Barber introduced the background document UNEP/CBD/AHTEG-PA/1/2.

3.1 Status and trends of protected areas, including their role and value

20. Mr. Stuart Chape of UNEP-WCMC made a presentation on the status and trends and values of protected areas entitled "Protected Areas – Roles, Values and Trends". He highlighted a number of issues that the group discussed for possible consideration in the recommendations of the meeting and a possible draft programme of work.

3.2 Planning and establishing protected areas and networks

21. The following presentations were made under this agenda item:

(a) "Identification of Ecosystem and Bioregional approaches for Protected Area Management and Sustainable use of Biodiversity" by Ms. Sarah George;

(b) "CBD and Protected Areas" by Mr. Kenton Miller;

(c) "Integration of Protected Areas and Forest Management in Sweden- A Model for sustainable use of Forest Landscapes" by Mr. Borje Petterson;

(d) "Governance Models for Protected Areas and Mechanisms for Stakeholder involvement" by Ms. Grazia Borrini-Feyerabend;

(e) "Transboundary Protected Areas" by Mr. Japhet Ngubane.

22. These presentations highlighted a number of issues that the group discussed for possible consideration in the recommendations of the meeting and a possible draft programme of work.

3.3 Meeting the costs of protected areas

23. Mr. Sheldon Cohen of The Nature Conservancy made a presentation entitled "Meeting costs of protected areas". He highlighted a number of issues for possible consideration in the recommendations of the meeting.

3.4 Measuring effectiveness of protected areas

24. The group discussed a number of issues for possible consideration in the recommendations of the meeting and a possible draft programme of work.

3.5 Draft programme of work on protected areas under the Convention on Biological Diversity

25. The representative of the Executive Secretary gave a brief presentation describing possible structures of the programme of work and draft programme elements. The group developed elements for a draft programme on work on protected areas under the Convention on Biological Diversity (Annex II) as part of its tasks in the working groups.

ITEM 4 PREPARATION AND ADOPTION OF THE REPORT

26. At the plenary meeting, on 14 June 2003, the AHTEG agreed that the report submitted by one of the co-Chairs for adoption captured the content of the rich and wide ranging discussions of its mandate. The Group adopted its report with the understanding that further editing for structure, balance and presentation (but not content) was needed. The Group therefore

(i) Mandated the two co-Chairs to work with a small group of experts consisting of Ms. Tarita Holm (Palau), Mr. Stephen J. Woodley (Canada), Mr. John Holmes (United Kingdom) and Mr. Andrew Bignell (New Zealand), and the Secretariat to produce a final edited version by 20 July 2003;

(ii) Agreed that the edited version would represent the official record of the AHTEG meeting to be submitted to SBSTTA 9 and COP 7;

(iii) Urged the Executive Secretary to explore the possibility of organizing a follow-up meeting for Government-nominated experts to consider the recommendations of the AHTEG in light of the outcomes of the World Parks Congress (WPC); and/or to include AHTEG members in the Liaison Group that will meet at the WPC to assist him to prepare a document that will integrate the outputs of the WPC into the CBD process towards the consideration of protected areas at SBSTTA 9 and COP7.

ITEM 5 OTHER MATTERS

27. No other matters were discussed.

ITEM 6 CLOSURE OF THE MEETING

28. Following the customary exchange of courtesies, the AHTEG meeting was closed at 07:10 p.m on Saturday 14 June 2003 by Per Wramner, one of the co-Chairs.

***Annex*:**
REVIEW OF METHODS AND APPROACHES FOR THE PLANNING, ESTABLISHMENT AND MANAGEMENT OF PROTECTED AREA SITES AND SYSTEMS

I. THE CONVENTION ON BIOLOGICAL DIVERSITY AND PROTECTED AREAS

1.1 Introduction

1. The central role of protected areas in conservation and sustainable use of biological diversity has been repeatedly emphasized in decisions of the Conference of the Parties of the Convention on Biological Diversity (CBD). In addition, Parties themselves have consistently identified their efforts to develop and maintain their national protected area systems as a central element of their strategy to implement the Convention. Experience shows that a well-designed and managed system of protected areas can form the pinnacle of national efforts to protect and sustainably use biological diversity. Such a system complements other measures taken towards conservation and sustainable use of biological diversity outside protected areas.

2. The Convention on Biological Diversity works with many partner organizations, conventions and initiatives in facilitating conservation and sustainable use via protected areas. These include the UNESCO Man and the Biosphere Programme (MAB); the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage; the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention); the Convention on the Conservation of Migratory Species of Wild Animals and the associated agreements; the Global Environment Facility (GEF); the UNEP World Conservation Monitoring Centre (UNEP-WCMC); the International Maritime Organization (IMO), the IUCN World Commission on Protected Areas (WCPA); the World Resources Institute (WRI); The Nature Conservancy (TNC); the World Wide Fund For Nature (WWF) and various regional agreements and programmes. As an example of ongoing collaboration, input for this paper has been received from all of these organizations and other members of an informal liaison advisory group established by the Secretariat*.

1.2. Articles of the Convention concerning protected areas

3. The term "protected area" is defined in Article 2 of the Convention as "a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives". Paragraphs (a), (b), (c) and (e) of Article 8 contain specific references to protected areas and provide that Parties should:

(a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;

(b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;

(c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use; and

(d) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas.

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* Members of the liaison group established by the Secretariat to provide input for and review of the Secretariat's documents on protected areas for the 7th Conference of the Parties, 9th meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), and the Ad Hoc Technical Experts Group on Protected Areas (AHTEG) include: IUCN, WCPA, MAB, the Ramsar Convention Secretariat, the UNESCO World Heritage Convention Secretariat, BirdLife International, TNC, UNEP-WCMC, WRI, WWF International, Conservation International, the Convention on Migratory Species Secretariat, the Swedish Scientific Council on Biodiversity, the United Nations University Institute of Advanced Studies, and an indigenous representative.

4. In addition, Article 8(j) and many other articles of the Convention, such as, for example, Articles 6, 7, 10, 11, 12 and 13 are relevant to protected areas.

1.3 Decisions of the Conference of the Parties on protected areas

5. The Conference of the Parties specifically considered Article 8 at its second and third meetings, where it emphasized the importance of regional and international cooperation, stressed the importance of disseminating relevant experience and requested the Executive Secretary to provide suggestions on how the collection and sharing of relevant information and experience might be enhanced (decisions II/7 and III/9). The Conference of the Parties also instructed the financial mechanism to support Parties' efforts to implement Article 8 as a matter of urgency and priority (decisions I/4 and II/6).

6. Protected areas form a central element of the various thematic programmes work adopted at the fourth and subsequent meetings of the Conference of the Parties. Programme element 3 of the programme of work on marine and coastal biological diversity† is dedicated to marine and coastal protected areas. The two aims of this programme element are to facilitate research and monitoring activities related to the value and the effects of marine and coastal protected areas or similarly restricted management areas on sustainable use of marine and coastal living resources; and to develop criteria for the establishment of, and for management aspects of, marine and coastal protected areas.

7. The programme of work on the biological diversity of inland water ecosystems‡ recommends the sharing of information and experience relevant to conservation and sustainable use of such ecosystems, specifically referring to use of protected areas and their management strategies for conservation and sustainable use of inland water ecosystems. The Conference of the Parties also specifically encouraged the implementation of the joint work plan with the Convention on Wetlands§.

8. The use and establishment of additional protected areas is identified as one of the necessary target actions for the implementation of the work programme on dry and sub-humid lands**. In addition, the programme of work on Article 8(j) includes a component on protected areas††.

9. In addition, the expanded forest programme of work, which was adopted in decision VI/22, contains a number of activities related to protected areas. The programme of work also calls for a meeting on forest protected areas, to be held back-to-back with the ninth meeting of SBSTTA.

10. Goal 1.2 of the programme of work adopted by SBSTTA at its eighth meeting in its recommendation VIII/1A calls for the identification and protection of unique, fragile mountain ecosystems, biological diversity hotspots and their associated species, and narrowly-distributed endemic taxa, giving special consideration to measures aimed at strict protection whenever feasible. Under the same goal, the COP recommend the development of strategies for land use planning at the landscape level, taking into account elements of ecological connectivity, and the establishment of national and subregional networks of protected areas, while respecting the rights and full participation of indigenous and local communities. The COP will consider this SBSTTA recommendation at its seventh meeting.

11. The value of taxonomic data in assisting protected areas site selection is recognized in the programme of work for the Global Taxonomic Initiative contained in decision VI/8. Protected areas are also mentioned in connection with identification, monitoring, indicators and assessments (decision VI/7) and the Addis Ababa principles and guidelines for sustainable use of biodiversity‡‡.

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† CBD Decision IV/5, annex.

‡ CBD Decision IV/4, annex I; and in SBSTTA recommendation VIII/2, annex.

§ CBD Decision IV/4, paragraph 4.

** CBD Decision V/23, annex I, II, part B, activity 7(a).

†† CBD Decision V/16, annex, part II, task 2.

‡‡ The Addis Ababa principles and guidelines will be considered by SBSTTA at its ninth meeting and the COP at its seventh meeting.

12. In the Global Strategy for Plant Conservation (annex to decision VI/9), the COP adopted targets 4 and 5, which specify respectively that by 2010 (i) at least 10 per cent of each of the world's ecological regions should be effectively conserved, implying increasing the representation of different ecological regions in protected areas, and increasing the effectiveness of protected areas; and (ii) protection of 50 per cent of the most important areas for plant diversity should be assured through effective conservation measures, including protected areas.

1.4 Preparatory process on protected areas leading up to the seventh meeting of the Conference of the Parties

13. The priority themes at the seventh meeting of the Conference of the Parties are: mountain ecosystems; protected areas; transfer of technology and technological cooperation; and follow-up from the World Summit on Sustainable Development. The preparation process leading up to the seventh meeting of the Conference of the Parties with regard to protected areas consists of a number of steps, of which the Ad Hoc Technical Expert Group on Protected Areas is one. An additional important source of input will be the Fifth IUCN World Congress on Protected Areas (September 2003). Specifically, the following are the main steps in the preparatory process leading up to the seventh meeting of the Conference of the Parties:

- The Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas (MCPA AHTEG) mandated by decision IV/5 concluded its work in 2002. The results of this work were considered at the eighth meeting of SBSTTA, in March 2003 and served as the basis for recommendation VIII/3B on marine and coastal protected areas. These results provide an interesting and illustrative indication of what is feasible in the wider context of protected areas in general.

- Thematic national reports on protected areas were due by 31 May 2003. These thematic reports provide information about national-level protected areas in the context of the implementation of the Convention;

- A strategic roundtable on protected areas, ecological networks and corridors took place in the beginning of June. This meeting provided input to the AHTEG, and will also provide input to the ninth meeting of SBSTTA on the topic of ecological networks and corridors;

- The Ad Hoc Technical Expert Group on Protected Areas met from 10 to 14 June 2003 (see its mandate in paragraphs 2 and 3 of the factual report above). The report of the Group, including a draft programme of work on protected areas, will provide the major input on protected areas to the ninth meeting of SBSTTA;

- The Fifth IUCN World Congress on Protected Areas will take place in September 2003. A small "liaison group" will work throughout the Congress to incorporate the key Convention-relevant issues into a document for the ninth meeting of SBSTTA. The Congress organizers have actively worked with the Secretariat of the Convention to ensure that specific input will be provided to the Convention on all the key themes and issues addressed at the Congress;

- In its decision VI/22, the Conference of the Parties requested the Executive Secretary to prepare and hold, for three days just prior to the ninth meeting of SBSTTA, an international workshop on protected areas as a measure to conserve and sustainably use forest biological diversity, with a view to exchanging current knowledge and experience on opportunities and challenges to establishing and ensuring long-term sustainability of protected forest areas. The Executive Secretary was requested to collaborate with the United Nations Forum on Forests, IUCN and other relevant member of the Collaborative Partnership on Forests, and other relevant bodies, institutions and processes, non-governmental organizations, indigenous and local communities, and other relevant stakeholders, and take into account

- The ninth meeting of SBSTTA will take place from 10 to 14 November 2003. The report of the present AHTEG, as well as the draft programme of work, will be considered at this

meeting. The recommendations of SBSTTA will form the basis on which the Conference of the Parties will consider the issue at its seventh meeting;

- The final decision on protected areas, including the programme of work, will be taken at the seventh meeting of the Conference of the Parties, to be held in Kuala Lumpur in February 2004. The decision will be based mainly on the consideration by the Conference of the Parties of the recommendations of SBSTTA at its ninth meeting;

14. It is hoped that the end results of this process would include the following:

(a) Developing the scientific basis for international coordination by Parties of protected areas required in order to facilitate the conservation and sustainable use of biodiversity at the global, regional and national levels;

(b) Fostering the development and adoption of best management principles, tools and practices consistent with the objectives of the Convention;

(c) Identification of options and priority actions for the effective establishment and management of protected areas by Parties, including through ecological networks;

(d) Fostering improved sharing of information and experience;

(e) Promoting the coordination of the actions of international agreements and programmes that are concerned with protected areas;

(f) Providing a framework for the management of transboundary ecosystems consistent with the objectives of the Convention; and

(g) Contributing to the significant reduction of the rate of biodiversity loss by 2010.

15. All of the above results will be consolidated into a decision on protected areas, which will include goals, objectives, specific activities, actors and time-frames.

1.5 National reports as a source of information about protected areas

16. Policy guidance prepared within the context of the Convention on Biological Diversity is largely dependent on the information officially provided by Parties to the Convention. This information comes in the form of case studies submitted to the Secretariat and, more importantly, in national reports as required by Article 26 of the Convention.

17. The first national reports were due at the end of 1998. To date, 133 reports were submitted by Parties. The second national reports were due on 15 May 2003. As of 30 June 2003, the Secretariat had received 98 reports. Ninety of these reports had responded to the questions on Article 8. The overview of the analysis of the information regarding Article 8 is provided in Appendix I.

18. The national reports provide summaries of the status of biodiversity, threats to it, the legal and policy framework for action and the institutions responsible for action. The report contain detailed information on Parties efforts to implement Article 8, including information about the relative importance of the protected area system in a country, the amount of resources available for the system, the capacity building needs of the system, and nature of the plans and guidelines implemented. These reports are based on an extensive planning and assessment exercise, which has been supported by the financial mechanism. Collectively, the process of producing the reports, which has engendered the development of national biodiversity strategies and action plans (NBSAP) in almost every country in the world, represents the most extensive planning exercise addressing biodiversity to date.

19. From a preliminary assessment of these reports it is clear that for the majority of Parties their protected area network is central to their efforts to implement the CBD. For more than 70% of Parties, which submitted their second national reports, Article 8 was identified as a high priority. Over 80% of the reporting countries have developed a system of PAs and 65% have developed national guidelines for the selection, establishment and management of protected areas (Article 8b). However, only one out of five

Parties reported that sufficient resources are available to adequately manage and maintain the PA network.

20. The COP at its sixth meeting invited Parties to submit a thematic report on protected areas or areas where special measures need to be taken to conserve biological diversity in accordance with approved formats. These thematic reports contain information on the following topics: system of protected areas; regulatory framework; management approach; available resources; assessment; and regional and international cooperation.

21. The thematic reports were due by 31 May 2003. As of 30 June 2003 the Secretariat had received 34 thematic reports distributed amongst the UN Regions as follows: 4 from Africa, 7 from Asia, 5 from Central and Eastern Europe (CEE), 7 from the group of Latin American and the Caribbean countries (GRULAC) and 11 from the Western European and others group (WEOG)§§.

22. The thematic reports on protected areas generally complemented the results of the national reports, providing additional specific information. A full synthesis of information in thematic reports on protected areas has been made available as an information document for the ninth meeting of the SBSTTA.

23. Over 80% of respondents attached a high priority to the development and implementation of a national system of protected areas (compared to 70% responding positively to the same question in the national report). A little less than a half of the reporting countries indicated that they have put in place a systematic planning process for development and implementation of a national system of protected areas and have made an assessment of the extent to which the existing network of protected areas covers all the areas identified as being important for conservation of biodiversity.

24. Most reporting countries (82%) have developed or established a policy framework and/or enabling legislation for establishment and management of protected areas. Five countries are in advanced stages of developing such policies and/or legislation and only one country is in early stages of policy and/or legislative development in this regard. Almost 60% of respondents have adopted some guidelines, criteria and targets to support the selection, establishment and management of protected areas. Some Parties apply relevant guidelines developed by IUCN or under NATURA 2000.

25. More than three quarters of reporting countries have implemented some incentive measures for some protected areas but only one country has adopted incentive measures for all the protected areas under its jurisdiction. Ten reporting countries have undertaken an assessment of the value of the material and non-material benefits and services that protected areas provide while in another eight countries such an assessment is under way or planned.

26. Almost 60% of respondents have assessed the principal threats to protected areas and the biodiversity they contain, while in another 25% such assessments are under way or planned.

27. In more than three quarters of reporting countries some protected areas are managed in the context of the wider region in which they are located. Only four countries manage all protected areas in this way.

28. Almost 90% of reporting countries have involved relevant stakeholders in the establishment and management of at least some protected areas but only just over one third have always involved stakeholders and have formally recognized protected areas established and managed by NGOs, citizen groups, private sector and individuals.

29. The majority of reporting countries, including developed countries, found human, institutional and financial resources limiting (22) or very limiting (9) for the full implementation of the protected areas networks as well as the management of individual protected areas. Only two reporting countries find

§§ Albania, Algeria, Argentina, Armenia, Austria, Barbados, Canada, Colombia, Cuba, Eritrea, Finland, Germany, Guatemala, Honduras, Hungary, Ireland, Lebanon, Liberia, Mexico, Monaco, Morocco, the Netherlands, Norway, Oman, Palau, Poland, Spain, Sri Lanka, Switzerland, Tajikistan, Thailand, Tonga, United Kingdom, Uzbekistan.

resources adequate or good for the actions in this regard. Out of 22 countries eligible for funding by the Global Environment Facility, 15 countries have received some funds from GEF; 4 countries are requesting such funds and 3 countries have not received any funds from GEF for establishment and management of protected areas.

30. Almost one out of two reporting countries is currently developing a programme to assess on a regular basis the effectiveness of protected areas management while one out of four already has such a programme in place.

31. Over 70% of responding Parties report on collaboration with neighbouring countries in the establishment and/or management of transboundary protected areas.

32. Just over one third of responding Parties report that their key protected areas professionals are members of the IUCN World Commission on Protected Areas, while two-thirds have provided information on their protected areas to UNEP World Conservation Monitoring Centre for a scientific assessment of the status of the world's protected areas.

33. The majority of reporting countries (27) consider that their experience in protected areas is of direct value to other Contracting Parties. A considerable number of reporting countries have provided summaries of the reports on those protected areas or other sites in their countries that have been recognized or designated under an international or regional convention or programme, such as World Heritage sites and Ramsar sites.

34. While both national reports and thematic reports provide excellent information on activities by Parties they do not contain information on conservation outcomes.

35. The importance of international and regional initiatives was emphasized in many of the thematic and national report. The European initiatives were repeatedly cited as providing the basis for systematic and planning of PAs within that region. Global networks of protected areas, in particular Ramsar sites, MAB Biosphere Reserves and World Heritage sites were all mentioned as providing a basis for systematic management of PAs as well. They were identified as providing an important means of communicating with neighbouring PA managers. All the countries that provided thematic report had members in the IUCN WCPA. Many developing (and some developed) countries had not provided information to UNEP-WCMC.

II. STATUS, TRENDS, ROLES AND VALUES OF PROTECTED AREAS

A. Definition, extent and classification of protected areas

2.1 Definition and objectives of protected areas

36. The following definition of a protected area was developed at the Fourth World Parks Congress in 1992: "….an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means."

37. In the past, protected areas were often equated with "national parks" such as the archetypical Yellowstone National Park established in the United States of America in 1872. This site and many that followed were perceived and managed as "wilderness areas" where there was no significant human impact, and where the place of humans was restricted to visitors.

38. Understanding of protected areas has evolved into understanding protected areas in the context of protected area systems, which as viewed as a central tool to implementing the ecosystem approach. Protected area systems are defined as representing the full range of ecosystems and communities found in a given geographical unit and including the conservation of ecological relationships among protected areas and ecological connectivity (i.e. *ecological networks*).

39. Adoption of the ecosystem approach requires that protected areas planning be carried out at the level of the *ecoregion*, which is defined by the WWF Global 200 initiative as "a relatively large unit of

land or water containing a characteristic set of natural communities that share a large majority of their species, dynamics, and environmental conditions."

40. We recommend that the AHTEG adopt and utilize the term "ecoregion", and adopt the Global 200 definition of ecoregion noted above, while recognizing that the term is frequently used interchangeably with "bioregion".

41. Application of the ecosystem approach means that protected areas must be components of an ecological network. In a strategic Round Table on the Role of Protected Areas and Ecological Networks in Biodiversity Policies (The Hague 5 and 6 June 2003) a statement was made. From this statement the AHTEG drew the following definition:

> "A network comprising an ecologically representative and coherent mix of land and/or sea areas that may include protected areas, corridors and buffer zones, and is characterized by interconnectivity with the landscape and existing socio-economic structures and institutions. Areas within an ecological network may range from strictly protected "core" areas to areas where biological resources are sustainable utilized, and may include both formally designated protected areas as well as areas not formally designated as protected areas but managed at least in part for conservation objective."

42. Over time, understanding of the roles of protected areas has broadened considerably as it has become clear that there are many places where humans have a vital role in the landscape and are themselves part of ecosystem processes. Under thus broader view, it also became clear that the history of protected areas is far older than Yellowstone, extending back to include ancient sacred sites, royal hunting reserves and restricted fishing areas, which may go back centuries or millennia and were declared and managed by a wide variety of governing entities from kings to local communities.

43. The importance of national parks and equivalent reserves was internationally recognized by a 1959 United Nations resolution***, which pointed out their value for the inspiration, culture and welfare of mankind, as well as their ecological, economic and scientific values. This resolution also began the process of compiling a worldwide list of protected areas.

44. The reasons why protected areas may be established and managed vary considerably from place to place, but in general, the main purposes of protected areas are:

- Scientific research;
- Wilderness protection;
- Preservation of genetic, species, community and landscape diversity;
- Maintenance of ecosystem services;
- Protections of specific natural and cultural features;
- Tourism and recreation;
- Engines of local economic growth and social development;

*** Resolution No. 713 of the 27th Session of the United Nations Economic and Social Council:

> "*Noting* that…national parks and reserves…contribute to the inspiration, culture and welfare of mankind, *Believing* that these national parks are valuable for economic and scientific reasons and also as areas for the future preservation of fauna and flora and geologic structures in the their natural state, 1) *Requests* the Secretary-General to establish, in co-operation with UNESCO, FAO and other interested specialist agencies, a list of national parks and equivalent reserves, with a brief description of each… 2) *Invites* State Members…to transmit…a description… 3) *Furthermore invites* the International Union for Conservation of Nature and Natural Resources and other interested non-governmental organisations in consultative status to assist…in the preparation of the proposed list".

- Education;
- Sustainable use of resources from natural ecosystems;
- Maintenance of cultural and spiritual attributes†††;
- National security.

45. In some areas, these objectives may be achieved as a side-effect of some other activity or condition, although the site is not formally considered a "protected area". These *'de facto* protected areas" include places such as isolated wilderness areas (where protection is simply a product of remoteness), watershed protection, military reserves and security zones, fisheries control areas, and even, more controversially, areas protected by destructive human activities such as minefields or abandoned oil platforms and shipwrecks (providing protection from seabed trawling).

46. As a broader scope for protected areas has been accepted, conceptions about protected-area governance have also broadened. While sites legally designated and managed by national Governments still form the core of the world's protected areas system, there are many other models. In many countries, provincial/state and municipal governments also designate and manage protected areas. Other forms of protection include private reserves, voluntary protection schemes, and many traditional practices of indigenous and local communities, including the designation of sacred sites, taboo areas, and seasonal closures. Importantly, current accepted definitions of protected areas also encompass land- and seascapes in which conservation is pursued through sustainable use of natural resources such as timber, medicinal plants, wildlife, and fisheries.

2.2 Global protected areas coverage

47. The most comprehensive dataset on protected areas worldwide is managed by the UNEP World Conservation Monitoring Centre (UNEP-WCMC) on behalf of the International community and in partnership with the IUCN World Commission on Protected Areas (WCPA). This tool, the World Database on Protected Areas (WDPA), has recently become the focus of a collaborative development exercise between a consortium of non-governmental organizations (NGOs) and has greatly benefited from this pooling of data and knowledge. Although this is still work in progress, the WDPA currently holds some 100,000 records of protected areas. The WDPA will be launched into the public domain at the 5th IUCN World Congress on Protected Areas in September 2003.

48. Based on currently available data, protected areas are thought to encompass nearly 10 per cent of the Earth's surface, with 90 per cent of those areas being on land. Currently the majority of sites are legally-established areas, set aside either specifically for biodiversity conservation, or with biodiversity conservation as a factor in their establishment (alongside other roles such as watershed protection, fisheries management or historical/cultural protection). Such sites are typically designated under national or sub-national (state or provincial) legislation. Although many sites are set aside at finer jurisdictional levels (village, parish, community), it seems likely that some of these are not registered in international (or even national) inventories.

49. In addition to nationally designated sites, there are a large number of sites designated through international agreements, which are discussed below.

50. While a large number protected areas have been designated with biodiversity conservation in mind, many others were not established based on biodiversity objectives. The result is that many reserve systems are biased towards particular subsets of natural features, usually the economically less valuable and often species-poorer habitats, while leaving others inadequately protected‡‡‡. While it is likely that each individual reserve has significant biological value, currently existing reserve networks are often not the best approach for representing the biodiversity of particular regions, and over the last decade,

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††† IUCN 1994.

‡‡‡ Pressey 1994.

numerous analyses at the national and regional scales have revealed that the coverage of biodiversity in protected areas is woefully inadequate§§§.

2.3 IUCN categorization of protected areas by management objective

51. Individual protected areas serve a broad range of objectives. While it is rare for an individual site to be declared for only one objective, it equally unusual for a site to serve all the objectives described above. Depending on the particular role perceived for a site, and on the socio-political pressures, legal regime and cultural context of the country or region where it occurs, quite different legal and management regimes may be established to support its protection. Over time, a host of different names or titles have been developed, and there is rarely conformity between countries in the definitions associated with these names.

52. In the WDPA, at the present time there are over 800 terms used to describe national designations. Even this is an underestimate of the variety of management regimes and objectives in place in the sense that there is no equivalence in the legislation between countries. A "national park" in the United Kingdom is utterly different from a "national park" in Chile.

53. Given this diversity of protected-area objectives and management systems, the IUCN management categories serve a critical role in regional and global analyses. They provide a common language and enable the comparison and summary of management objectives for the world's protected areas. They further enable the interpretation of national protected areas definitions and introduce an element of compatibility.

54. Initial attempts to categorize protected areas included a division of protected areas into "national parks" and "equivalent reserves"****. In 1978 IUCN developed a more comprehensive system of categories for conservation management. This included a group considered of prime importance for nature conservation (categories I-V), a group of secondary importance for nature conservation (VI-VIII) and categories established under international designations (IX, X)††††

55. The IUCN classification scheme was revised in 1994‡‡‡‡. Among other changes, the revised system recognizes that UNESCO Man and Biosphere Reserves and World Heritage Sites (Categories XI and X under the 1978 IUCN scheme) – and other such internationally-designated sites – are, in almost all cases, covered under relevant national legislation and hence already classified under one or more other

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§§§ See for example: Castro Parga *et al.* 1996; Williams *et al*. 1996; Nantel *et al*. 1998; Scott *et al*. 2001.

**** IUCN (1971) United Nations List of National Parks and Equivalent Reserves. Hayez, Brussels:

> **National Park:** An area of part of the national territory which 1) the *central* governmental authority 2) has so ordered that the three basic conditions of our classification are fulfilled: a) status of general protection, b) size in excess of a certain minimum, c) protected status adequately maintained, and 3 in which that authority permits or actually organizes tourism.
>
> **Equivalent Reserve:** Other areas that the three basic conditions of the classification are also fulfilled and which may be either 1) Strict Natural Reserves, when tourism is not permitted, or 2) when their status is not derived from the central governmental authority, State Parks, Provincial, Cantonal or other Local Authority Reserves, or Private Reserves belonging to non-governmental associations.

†††† IUCN/CNPPA (1978) Categories, objectives and criteria for protected areas. IUCN, Switzerland:

Category I: Scientific Reserve/Strict Nature Reserve
Category II: National Park
Category III: Natural Monument/Natural Landmark
Category IV: Nature Conservation Reserve/Managed Nature Reserve/Wildlife Sanctuary
Category V: Protected Landscape or Seascape
Category VI: Resource Reserve
Category VII: Anthropological Reserve/ Natural Biotic Area
Category VIII: Multiple Use Management Area/Managed Resource Area
Category IX: Biosphere Reserve
Category X: World Heritage Site (natural)

‡‡‡‡ IUCN, 1994.

IUCN management categories. It is important to note that the current system is based on management objectives, not on relative importance of different areas. The current IUCN classification scheme is given in box 1.

Box 1
IUCN Protected Areas Management Categories (1994)

CATEGORY Ia – Strict Nature Reserve: Protected area managed mainly for science.

Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

CATEGORY Ib – Wilderness Area: Protected area managed mainly for wilderness protection.

Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

CATEGORY II – National Park: Protected area managed mainly for ecosystem protection and recreation.

Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

CATEGORY III – Natural Monument: Protected area managed mainly for conservation of specific natural features.

Area containing one or more specific natural or natural/cultural features which are of outstanding or unique value because of their inherent rarity, representative or aesthetic qualities or cultural significance.

CATEGORY IV – Habitat/Species Management Area: Protected area managed mainly for conservation through management intervention.

Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

CATEGORY V – Protected Landscape/Seascape: Protected area managed mainly for landscape/seascape conservation and recreation.

Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

CATEGORY VI – Managed Resource Protected Area: Protected area managed mainly for the sustainable use of natural ecosystems.

Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

Source: IUCN 1994.

56. Of the 100,000 protected areas held on the WDPA, nearly 70 percent have an assigned IUCN management category, and all categories appear to be relatively well represented (See table 1).

57. The IUCN categorization system is widely accepted, and has been very useful in both obtaining information in a more standardized manner and providing guidance to countries as they establish and expand their protected areas systems. The system nevertheless has a number of shortcomings relating to both its applicability on the ground, and its accuracy as it has been applied in various regional and international overviews. Some sites are very difficult to place in single categories, particularly where sites are internally zoned with particular zones fitting different categories. In other cases, the legislation or details appear to fall between two categories.

Table 1
Global Summary of Protected Areas by IUCN Management Category*

Categories	Ia	Ib	II	III	IV	V	VI	Total
No. of Protected Areas	5,020	863	3,684	16,127	29,308	10,499	3,039	68,540
Area (km^2)	1,037,718	920,739	4,123,763	245,951	3,104,831	1,132,036	4,219,472	14,784,510
% Global Land Surface Area	0.70	0.62	2.77	0.17	2.09	0.76	2.84	9.95

* The figures for percentage of global land surface area are approximate as marine areas are included in the protected areas statistics. In reality these are very small and it is estimated that the total figure remains at over 9 percent with these areas excluded.

Source: World Database of Protected Areas, UNEP-WCMC, March 2003

58. Another common problem comes where classification is undertaken by parties remote from the sites, especially where there is insufficient information to accurately determine the category. The reverse problem has also been observed where, either intentionally or accidentally, an authority may choose to categorize sites quite differently from the situation on the ground.

59. Finally, sites are often placed in management categories based on their hypothetical management status, often based on a site's formal legal designation rather than the actual situation of the site's resources and management regime on the ground. This problem has given rise to calls for addition of a complementary dimension of classification, based on management effectiveness.

60. A project, "Speaking a Common Language", is underway to examine these issues of protected area categorization, including Cardiff University (UK), IUCN, WCPA and UNEP-WCMC§§§§.

2.4 International protected areas designations

61. Paralleling the growth of protected areas at the national and local level has been the development of numerous international treaties, conventions and protocols exhorting the designation of protected areas. Some of these have established entirely new categories of protected areas and require signatories to designate sites for protection. Appendix II provides a summary of these agreements.

62. The legal strength of such international agreements varies, both in the technical form of the wording and in the degree of application. A number of these treaties speak of protected areas only in general terms and it would be difficult or impossible to charge a signatory for failing to establish or

§§§§ http://www.cf.ac.uk/cplan/sacl/

protect designated areas. A significant number, however, have influenced the designation of new protected areas, whilst others add layers of legal protection onto existing sites.

63. Where international designations are applied, in many cases there is also an element of prestige. This is clearly recognized in the World Heritage Convention sites, but is also the case with Ramsar sites and Biosphere Reserves, and in Europe with the Council of Europe Diploma Sites and the forthcoming Landscape Award of the Council of Europe. It is instructive to note that both the Council of Europe designations and Biosphere Reserves are established under non-treaty agreements, and are thus not binding under International Law. Much of their success, therefore, depends on the prestige associated with designation.

64. Enhanced prestige, however, needs to be used to leverage effective conservation. Experience at World Heritage sites indicates that the effective use of the prestige deriving from World Heritage status for conservation action depends on stakeholders – i.e. the State Party, conservation NGOs, protected areas management agencies, scientists and concerned citizens – proactively using that prestige to raise international, national and local awareness and mobilize human and financial resources for effective site management.

65. As noted above, the 1978 IUCN classification scheme placed Biosphere Reserves and World Heritage Sites in categories of their own. It has been recognized, however, that the great majority of internationally designated sites coincide with one or more existing national sites. The application of management categories to internationally designated sites is thus most appropriately done by looking at the individual sites and at the national regulations associated with them.

B. Values of protected areas

2.5 Difficulties in quantifying the values of protected areas

66. The statistics in the WDPA (table 1) suggest that over 9 per cent of the world's terrestrial surface falls within protected areas. Protected areas can thus be regarded as one of the most significant forms of land management and use, globally, at the start of the third millennium. Attempts to place a value on protected areas and the ecosystems they encompass therefore invariably expand to consider many of the activities associated with human existence.

67. Protected areas provide us with food, water and many other resources. They regulate our weather patterns. Genetic diversity provides us with medicines, and precious crop varieties. Solace and recreation within protected areas are among the mainstays of tourism, one of the world's largest industries. They generate income, foreign exchange earnings and employment*****. This holistic approach, looking at ecosystem "goods and services" has underpinned a number of recent reviews of ecosystems, including the recent World Resources 2000-2001 report and associated Pilot Analysis of Global Ecosystems (PAGE) reports†††††, and also forms the basis for the "Integrated Ecosystem Assessment" which underpins the Millennium Ecosystem Assessment‡‡‡‡‡.

68. Some efforts have been made to assess the total value of ecosystem goods and services to humanity. One 1997 study estimated the annual value of ecosystems services from the entire biosphere at $33 trillion, noting that most of this value is outside the market§§§§§, although this conclusion has been rather controversial******. Many of the same authors published another study in 2002 arguing that while this figure may be somewhat imprecise, extensive data supports the conclusion that the economic benefits

***** For analyses of the values of protected areas, see: Munasinghe and McNeely 1994; Dixon and Sherman 1990.

††††† UNDP, UNEP, World Bank and WRI, 2000. (2000). *World Resources 2000-2001: People and Ecosystems: The Fraying Web of Life.* World Resources Institute, Washington DC.

The *Pilot Analysis of Global Ecosystems* – a series of five technical reports covering *Agroecosystems*, *Coastal Ecosystems*, *Forest Ecosystems*, *Freshwater Ecosystems* and *Grassland Ecosystems*. Available on-line at www.wri.org/wr2000

‡‡‡‡‡ http://www.millenniumassessment.org/en/index.htm

§§§§§ Costanza 1997.

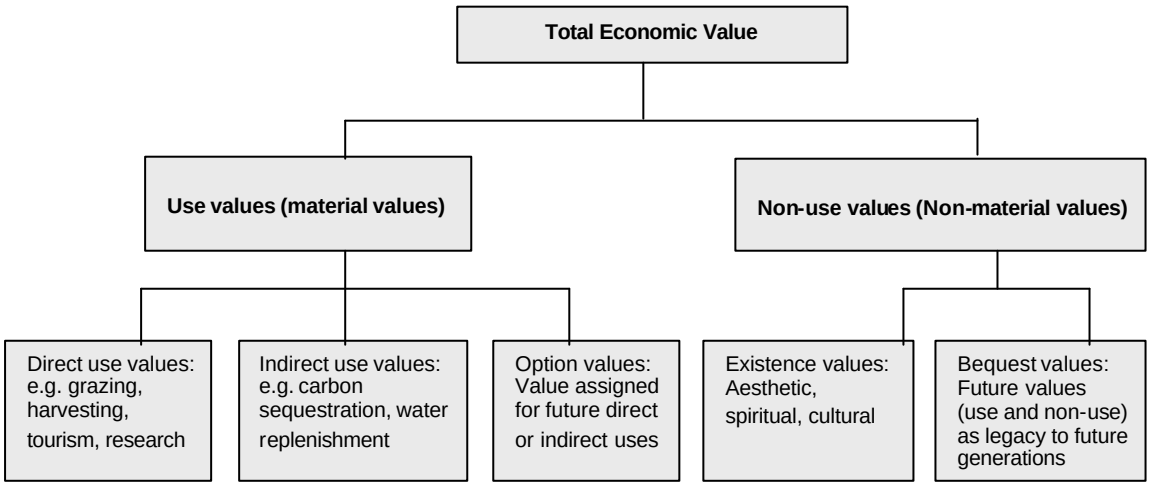
****** See, for example, Daily 2000.

of natural habitats greatly exceed the benefits of habitat conversion, and that "the overall benefit/cost ratio of an effective global program for the conservation of remaining wild nature is at least 100:1"††††††.

69. Quantitative analysis of the value of protected areas is increasingly employed to justify and support the development and strengthening of protected areas networks‡‡‡‡‡‡. Information on values to different user groups, and of the driving forces behind these values, is also important for enabling better management, ameliorating threats, and resolving conflicts. However, to date efforts to communicate these economic and other values to decision makers and others has been ad hoc and has relied on poorly tailored communication strategies and tools.

70. The most powerful arguments in many circles are economic arguments. However, it is quite widely accepted that, at present, "ecosystem services are not fully 'captured' in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, they are often given too little weight in policy decisions"§§§§§§. Efforts to initiate "natural resource accounting" – taking into account the use and depletion of natural resources in the calculation of national income accounts – have moved from the fringes towards the mainstream of economic theory*******. This is particularly the case following the growing acceptance of the need for "sustainable development," as elaborated by the 1992 UNCED conference, the 2002 Johannesburg summit, and environmental treaties such as the CBD. In practice, however, neither the values of ecosystems, nor the costs of their degradation, are systematically integrated into the economic calculations of governments or the private sector.

Figure 1
The Constituent Elements of Total Economic Value (TEV)



Source: Adapted from IUCN (1998)

71. Countering this movement to mainstream "ecological economics", there is also increasing concern that overly simplistic economic models may leave out critical elements, including some

†††††† Balmford *et al*. 2002.

‡‡‡‡‡‡ IUCN 1998.

§§§§§§ Costanza *et a*l. 1997.

******* See, for example: Daily 2002; Harris and Frazer 2002; Vincent 2000; Bartelmus 1999; Lutz 1993.

important societal values (employment, food provision, climatic stability) and non-material or spiritual benefits. The concept of Total Economic Value (TEV) has been widely used to attempt to convert all values and benefits into simple economic terms. Figure 1 shows the main categories of values and benefits which contribute to TEV. Many values are notoriously difficult to evaluate in economic terms, however, and results remain somewhat subjective.

72. Finally, the time frame in which protected area values are evaluated is important to consider, especially because protected areas will more likely "lose out" compared to other land use options if only short-term values are considered. However, as a range of values (both use and non-use) are considered over longer time frames, protected area values will tend to increase as compared to other possible land use options.

2.6 Protected areas and the Millennium Development Goals

73. In 2000, the world's leaders, meeting at the UN Millennium Summit, agreed on the Millennium Development Goals (MDGs), an ambitious program to substantially roll back poverty, hunger, disease, and other ills afflicting the world's poorest countries by 2015 (See box 2.).

74. Numerous studies and meetings have produced a wealth of analysis and case studies illustrating the linkages between conserving biodiversity and alleviating poverty, hunger and disease[†††††††]. In particular, the relevance of biodiversity to the MDGs was examined at a UN-sponsored meeting in London in early 2003 (see box 3).

2.6 Material values and benefits of protected areas

75. Although typically expressed in economic terms, it is important to consider other approaches to valuation. Differences in available wealth to particular communities, and differences in overall wealth between countries, mean that the use of simple "dollar values" can be extremely misleading. Protected areas may be the only source of employment in an area, or may provide a critical source of timber, or of animal protein in local diets. Converted to dollar values on open markets such measurements may appear trivial in economic terms, but their loss could be devastating to large numbers of people. Some examples of the material benefits of protected areas are given in box 4.

Direct use values and benefits

76. Recreation and tourism: Sometimes simply expressed as the receipts in terms of park fees, it is important to calculate the total input of tourists into regional economies, including travel and accommodation costs, and other expenditure. This can also be viewed in terms of employment of local populations. Such economic values are a critical element, but the attractions of protected areas for many visitors are often, in fact, their non-material values[‡‡‡‡‡‡‡].

77. Harvesting of renewable resources: Depending on the management objectives for a particular site, it is often entirely legitimate to allow certain levels of sustainable extraction of natural resources from protected areas. Activities may include: grazing of livestock, fishing, hunting, the use of non-timber forest products, agriculture, water extraction and even the extraction of genetic resources. These values are of particular importance for many local and indigenous communities, especially in developing countries.

78. Extraction of non-renewable resources: Certain extractive activities are non-sustainable, notably the extraction of petroleum products and minerals. In general this would appear to be contrary to the concept of "protection and maintenance" associated with the definition of protected areas. There may be cases, however, where the extraction process has limited impacts and the material being extracted may be non-essential to the objectives and functioning of the protected area. In such situations some argue that

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[†††††††] See, for example: Mainka and Tivedi 2002; The European Commission and IUCN 2001; Koziell 2001; and the presentations and papers from the meeting "Biodiversity After Johannesburg: The Critical Role of Biodiversity and Ecosystem Services in Achieving the Millennium Development Goals" at http://www.undp.org/equatorinitiative/secondary/biodiversity.htm.

[‡‡‡‡‡‡‡] On the tourism values of protected areas, see Eagles *et al*. 2002.

economic benefits (direct payments) for the extraction process may justify this activity. IUCN's view,

Box 2
The Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger
- Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day
- Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Goal 2: Achieve universal primary education
- Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Goal 3: Promote gender equality and empower women
- Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and to all levels of education no later than 2015

Goal 4: Reduce child mortality
- Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Gaol 5: Improve maternal health
- Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Goal 6: Combat HIV/AIDS, malaria and other diseases
- Target 7: Have halted by 2015, and begun to reverse, the spread of HIV/AIDS
- Target 8: Have halted by 2015, and begun to reverse, the incidence of malaria and other major diseases

Gaol 7: Ensure environmental sustainability
- Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
- Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water
- Target 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Goal 8: Develop a Global Partnership for Development
- Target 12: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (Includes a commitment to good governance, development, and poverty reduction – both nationally and internationally)
- Target 13: Address the Special Needs of the Least Developed Countries (Includes: tariff and quota free access for LDC exports; enhanced programme of debt relief for HIPC and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction)
- Target 14: Address the Special Needs of landlocked countries and small island developing states (through Barbados Programme and 22nd General Assembly provisions)
- Target 15: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
- Target 16: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth
- Target 17: In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries
- Target 18: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

Box 3
Key Conclusions of the meeting on "Biodiversity after Johannesburg: The Critical Role of Biodiversity & Ecosystem Services in Achieving the UN Millennium Development Goals"

In order to increase recognition of the importance of the conservation and sustainable use of biodiversity and ecosystem services in achieving the Millennium Development Goals, a meeting was convened in London 3-4 March by UNDP, working with the UNEP World Conservation Monitoring Centre, the Equator Initiative, the Royal Society for the Protection of Birds, and The Nature Conservancy. The meeting was attended by more that 100 people representing all levels of society and a wide range of countries. Participants included representatives of governments, intergovernmental agencies, international and national NGOs, aid agencies, conventions (including the CBD Secretariat and the SBSTTA Chair) and academics. Key conclusions of the meeting were as follows:

- A strong case can and should be made for the importance of biodiversity and ecosystem services in reaching many of the Millennium Development Goals, and not just the goal on environmental sustainability. The sustainable use of biodiversity, for example, is important for reducing poverty.
- There is concern that if focus on achieving some of the goals does not take account of biodiversity and ecosystem service issues, then there may be negative impacts on biodiversity and ecosystem services in the long term. Consideration needs to be given as to how to avoid these negative impacts, while still achieving the goals.
- These messages need to be far more effectively communicated so that those involved in development and development assistance at all levels are aware of the importance of biodiversity and ecosystem services.
- There are clear opportunities for the "biodiversity sector" to more effectively link conservation and sustainable use of biodiversity, and the equitable sharing of its benefits, to the development objectives set out in the Millennium Development Goals.
- There is a need for improved understanding and appreciation of the role of ecosystem services in a number of key areas including, for example, health and flood protection. There is also a linked need for an improved understanding of the economic and social value of such services, and the better communication of this information so that it was understood by those working in other sectors.
- Linked to this is the need to broaden accountability for the conservation and sustainable use of biodiversity and ecosystem services, mainstreaming this into other economic sectors.
- There may be a need for Contracting Parties to review their national strategies and action plans to consider the relations, both positive and negative between these strategies and national action to meeting the Millennium Development Goals at home and abroad.
- There were calls for a "Life Observation System" to parallel some of the other global observing networks, tracking status and trends in biodiversity, and providing input to a broad range of other programmes and activities including better communication of the status of biodiversity.
- There were also calls for improved tools to assist both national authorities and international organizations carry out their work more efficiently and effectively.
- Finally it is important to recognize and communicate the resources required for ensuring the conservation and sustainable use of biodiversity and ecosystem services, whether those resources are financial, human or material.

Box 4
Examples of Material Benefits from Protected Areas

1. Canada is expected to generate $C 6.5 billion dollars in annual gross domestic product from the expenditure of participants in wildlife-related activities; this sustains 159,000 jobs and creates $C2.5 billion in tax revenue each year.

2. Australia receives over $A2 billion in expenditure from eight national parks - at a direct cost to Governments of some $A60 million.

3. In Costa Rica, about $US12 million is spent annually to maintain the national parks but foreign exchange generated in 1991 was more than $US330 million with 500,000 overseas visitors (currently 1 million); park-generated tourism is the second largest industry in the country.

4. In Tanzania, poaching and uncontrolled hunting of elephants to the south-east of Tarangire National Park led to an increase in woody plants within the park, causing in turn an increase in tsetse flies and hence livestock losses; conservation of elephants would have enhanced the productivity of the livestock industry.

5. Zaire (now Democratic Republic of Congo) receives 75% of animal protein from wild sources; 40% of the diet in Botswana comes from animal protein produced by wild sources;

6. Firewood and dung provide 90% of the energy needs in Tanzania, Nepal and Malawi, and exceed 80% in other countries

7. In Italy, the Abruzzo National Park has been so popular that it has regenerated the economy of a poor area that previously suffered from severe depopulation.

Source: IUCN, 1998

however, is that extractive activities should not be permitted in areas classified as IUCN protected area categories I (strict nature reserves and wilderness areas) and II (national parks).

79. Education and research: Protected areas offer some of the best opportunities to understand and explain natural ecosystem processes. They also offer a natural baseline against which to measure environmental change.

Indirect use values and benefits

80. Protected areas are a fundamental part of the precautionary approach, acting as benchmarks and buffers to the impacts of the main stream of human use natural resources.

81. Climate influences: Protected areas play a critical role in mitigating the impacts of climate change, acting as carbon reservoirs or sinks. Many protected areas play a critical role in maintaining micro-climatic or climatic stability, including rainfall patterns.

82. Water services: In addition to climatic influences, protected areas are widely used as a form of watershed protection, guaranteeing the supply of water to adjacent populations. Many wetland areas and other natural ecosystems have been observed to play a role in water purification. The presence of natural vegetation, notably forests and wetlands also reduces extremes of water flow and hence plays a role in flood control.

83. Physical processes: Certain habitats such as saltmarshes, mangroves and coral reefs are widely cited for their role in coastal protection. In terrestrial areas the presence of protected areas, even relatively small areas along waterways or in strips along hillsides, has an important role in reducing soil erosion.

84. Wider ecological influences: Spillover of animals from protected areas into adjoining land and water can support adjacent extractive uses. This is particularly the case in marine environments, where

even relatively small marine protected areas have been shown to increase the abundance of fish and other marine life in adjacent fishing grounds§§§§§§§. Some protected areas also help sustain high levels of natural pollination, avoiding the costs associated with commercially provided pollination.

Option values

85. Future direct and indirect uses, including all of those listed above, are considered "option values". By maintaining protected areas and their ecological functions, we preserve the option of enjoying the benefits that they produce into the future.

86. Genetic resources: One of the most widely cited option values is the role of protected areas as *in situ* reservoirs of genetic material in the form of wild crop progenitors, raw material for development of new medicines, and the like. Although impossible to calculate, it is likely that such a role, when the global system protected areas is considered as a whole, could be critically important for the maintenance of future food resources or the development of future treatments for illness********.

87. Refugia and adaptation: With growing concerns about climate change – as well as the more immediate impacts of pollution spills and other environmental disasters – the potential importance of protected areas as refugia for future restoration and recovery of adjacent areas is being increasingly realized††††††††. In addition, well designed protected area systems (especially those that cover altitudinal and other ecological gradients) may allow certain species to persist by migrating to new areas as climate change occurs and they are forced to adapt.

2.7 Non-material values and benefits of protected areas‡‡‡‡‡‡‡‡

88. While, in some cases, economic figures have been derived for values such as beauty, cultural importance, or even spiritual roles, such values are crude proxies. Some would argue that that placing monetary value on some of these is inappropriate. Principal non-material values include:

(a) Aesthetic: Incorporating notions of beauty, inspiration, excitement and adventure.

(b) Spiritual/ritual: Perhaps the oldest protected areas of all are holy sites such as the sacred forests of India. In many indigenous cultures as well as in the holy scriptures of all the major world religions respect for nature is implicit or explicit and, as natural areas are diminished and species are driven towards extinction there is an increasing call from religious groups to protect nature.

(c) Cultural/heritage: Certain elements of the natural or semi-natural landscape are of considerable cultural value for historic or more recent reasons. Many indigenous peoples place special cultural significance on particular sites and species§§§§§§§§§.

(d) Intrinsic: It is argued by some that values may exist independent of human perceptions and unrelated to the human view. Such values are, but their nature, un-measurable.

(e) Intergenerational: One definition of sustainability is based on the idea of ensuring an equal or better quality of life for future generations. Protected areas will help ensure this quality of life.

89. In summary, the fact that protected areas have a variety of values is not often disputed. The problem is that these values are often not realizable in conventional economic terms, and are also often received by those who do not bear the current real costs, including opportunities foregone, because they are distant from the protected area in space (e.g. urban dwellers) or in time (e.g. future generations). Old growth forests, for example, help maintain climate regimes, provide clean water for downstream users,

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§§§§§§§ Gell and Roberts. 2002.

******** On the commercial value of wild genetic resources, see Laird and ten Kate 1999. Concerning "bioprospecting" in protected areas, see Laird and Lisinge 2002.

†††††††† Intergovernmental Panel on Climate Change 2002; Bennett 1999.

‡‡‡‡‡‡‡‡ For extensive discussion on non-material values of protected areas, see Putney 2000.

§§§§§§§§§ For an extensive review of the cultural and spiritual values of biodiversity, see Posey 1999.

and conserve biodiversity, but none of these values turn into cash for local people, while felling the forest may.

C. Threats to protected areas

90. While a significant portion of the earth's land area and some marine habitats are formally under some form of protection, the ecological viability of many protected areas is under threat, and some have already been significantly degraded. In many parts of the world, however, protected areas are so little studied or monitored that it is virtually impossible to get a detailed picture of the level and types of threat. A 1999 survey of threats to forest protected areas by IUCN concluded that "considerably less than 10 percent of protected areas has been subject to any kind of analysis of threat, and far less have been subject to detailed assessment"*********.

91. What information there is paints an ominous picture. The IUCN survey, conducted in 10 key forest countries†††††††††, found threat levels to be high, and identified two key issues:

(a) Management: Less than 25 percent of forest protected areas were considered to be well managed with a good infrastructure, and 17 to 69 percent of forest protected areas in these countries had no management at all.

(b) Security: Only 1 percent of forest protected areas were regarded as secure in the long term. A further 1 percent had been so badly degraded that they had lost the values for which protection was given. Some 22 percent were suffering various levels of degradation and 60 percent were currently safe but faced possible future threats.

92. Another review of threats to tropical rainforest protected areas concluded that in the tropical forest realm, "protected nature reserves are in a state of crisis. A number of tropical parks have already been degraded almost beyond redemption; others face severe threats of many kinds with little capacity to resist. The final bulwark erected to shield tropical nature from extinction is collapsing"‡‡‡‡‡‡‡‡‡.

93. Even less is known about the threats to marine protected areas. A recent survey of 342 MPAs in Southeast Asia (the centre of global marine biodiversity) concluded that only 14 percent were effectively managed. The same study also concluded that "human activities now threaten an estimated 88 percent of Southeast Asia's coral reefs….For 50 percent of these reefs, the level of threat is 'high' or 'very high'"§§§§§§§§§.

94. Threats to protected areas are of course not confined to developing countries or to the tropics. Loss of old-growth forest in Europe and North America, for example, has been nearly complete in most areas except the boreal north, and remaining forest fragments within protected areas are under threat from air pollution, acid rain, overuse of national parks, and other threats.

95. Threats to protected areas can be divided into direct threats which directly stress the biological components of the protected area, indirect threats which drive the direct threats, and underlying causes which comprise broad socio-economic forces often far from the site. Encroachment by small farmers, for example, may pose a direct threat to a protected area. This encroachment may be driven, however, by an indirect cause – the rapid privatization and concentration of agricultural land in adjacent areas. The underlying cause for this situation, in turn, may be subsidies or other changes in government policy aimed at boosting export agriculture to help pay off debts to international financial institutions. Another threat example is the large-scale declassifications of parts of or entire protected areas, legally agreed between national ministries and agro-industrial, timber, mining or oil and gas companies. These may be prompted

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********* IUCN, 1999.

††††††††† The IUCN survey covered Brazil, China, Gabon, Indonesia, Mexico, Papua New Guinea, Peru, Russia, Tanzania and Vietnam.

‡‡‡‡‡‡‡‡‡ Van Schaik *et a*l., 1997.

§§§§§§§§§ Burke *et a*l. 2002.

by the budgetary needs of the relevant countries, driven, in turn, by the underlying cause of structural adjustment policies and constraints.

96. The Nature Conservancy (TNC) analyzes threats to protected areas by differentiating between stresses and sources of stress at the site level. A stress is "the impairment or degradation of the size, condition and landscape context of a conservation target, and results in reduced viability of the target. A source of stress is an extraneous factor, either human (e.g. policies, land uses) or biological (e.g. non-native species), that infringes upon a conservation target in a way that results in stress"**********.

97. Other analyses urge a broader, even global view of underlying causes. A recent research initiative on "the root causes of biodiversity loss" stressed that "biodiversity loss will continue unabated until its indirect or root causes are understood and addressed.…" and urged a focus on "the basic conflict that exists between the promotion of growth and consumption on one side, and activities promoting sustainable development and conservation of biological diversity on the other"††††††††††. The WCPA report National System Planning for Protected Areas notes that "The major threats to conservation in most countries lie outside the protected area system. Unless the linkages between protected areas management and external factors are identified and addressed, fundamental conservation issues are difficult to resolve"‡‡‡‡‡‡‡‡‡‡.

98. Direct threats to protected areas can be classified into five main categories:

- Individual elements removed from the protected area without alteration to the overall structure (e.g. plant, animal or marine species);
- Overall impoverishment of the ecology of the protected area (e.g. through encroachment, grazing, air pollution damage, persistent poaching and illegal logging);
- Major conversion and degradation (e.g. through removal of vegetative cover, construction of roads and settlements, or mining); and
- Isolation (e.g. through major conversion of adjacent lands)§§§§§§§§§§.
- Invasive species.

99. Indirect threats to protected areas vary from place to place, but often include:

- Inappropriate land allocation and land use decisions;
- Unclear legal status of lands and waters and resulting conflicts;
- Weak and inconsistent enforcement of laws and regulations;
- Policies that capacity for natural resource-based industries in excess of sustainable supplies of raw material (such as timber);
- Rural poverty and landlessness; and
- Revenue needs of central or local governments.

100. The underlying causes of the threats to protected areas are difficult to separate from the underlying causes of biodiversity loss generally. These were defined by the 1992 Global Biodiversity Strategy as:

- The unsustainably high rate of human population growth and natural resource consumption;
- The steadily narrowing spectrum of traded products from agriculture, forestry and fisheries;

********** The Nature Conservancy. 2000.

†††††††††† Wood *et al*. 2000.

‡‡‡‡‡‡‡‡‡‡ Davey 1998.

§§§§§§§§§§ Carey *et al.* 2000.

- Economic systems and policies that fail to value the environment and its resources;
- Inequity in the ownership, management and flow of benefits from both the use and conservation of biological resources;
- Deficiencies in knowledge and its application; and
- Legal and institutional systems that promote unsustainable exploitation**********.

101. Other underlying causes of threats to protected areas include climate change and loss of cultural connections between people and the land;

102. Another recent study, based on extensive analysis of cases from around the world††††††††††, identified "three, broad interrelated reasons why the planet is continuing to lose natural ecosystems despite their overall benefits to society":

> "First, there are often failures of information. For many services, there is a lack of valuations of their provision by natural systems, and particularly of changes in this provision as human impacts increase….Second, these findings highlight the fundamental role of market failures in driving habitat loss. In most of the cases we studied, the major benefits associated with retaining systems more or less intact are nonmarketed externalities, accruing to society at local and global scales. Conversion generally makes narrow economic sense, because such external benefits [or related external costs….] have very little impact on those standing to gain immediate private benefits from land-use change….Third, the private benefits of conversion are often exaggerated by intervention failures [such as new private benefits arising from tax incentives and subsidies.]"

103. Threats to protected areas, at all these levels of scale and analysis, rarely come singly. Any given protected area that is under threat is likely to be facing a whole range of threats. The previously quoted study of rainforest protected areas found, for example, that most protected areas faced an average of at least three direct threats‡‡‡‡‡‡‡‡‡‡.

104. Beyond these external threats to biodiversity generally, protected areas are also specifically threatened by the lack of resources and capacity in the agencies responsible for their management. "Lack of capacity" encompasses a variety of problems, including:

- Lack of financial resources;
- Lack of staff and staff training;
- Inadequate institutional capacity and infrastructure;
- Lack of information about the biology of the area;
- Lack of political/legislative support and/or unclear or contradictory legislation;
- Lack of local community involvement and participation;
- Lack of coordination among management agencies;
- A poor legal framework and lack of adequate enforcement tools;
- Absence of comprehensive land-use plans or management plans;
- Poor definition of protected areas boundaries;
- Lack of agreements about resource use adjacent to or within protected areas; and

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********** WRI *et al.* 1992.

†††††††††† Balmford *et al.* 2002.

‡‡‡‡‡‡‡‡‡‡ Van Schaik *et al.*, 1997. The direct threats considered in this study included agricultural encroachment, hunting/fishing, logging/fuelwood collection, grazing of livestock, mining, fires, road-building and hydropower development.

- Rapid turnover of protected area staff§§§§§§§§§§.

105. The many threats to protected areas – and the severe degradation that some are undoubtedly experiencing – have led some to question whether protected areas are, indeed, an effective tool for biodiversity conservation. At least one recent study strongly disputes this view, concluding that "the majority of parks are successful at stopping land clearing and to a lesser degree effective at mitigating logging, hunting, fire, and grazing". The study assessed the impacts of these five anthropogenic threats on 93 protected areas in 22 tropical countries, comparing impacts inside the parks with those on a 10 km belt surrounding each park, and concluded that:

> "….the claim that the majority of parks in tropical countries are 'paper parks' – i.e. parks in name only – is not substantiated. Tropical parks have been surprisingly effective at protecting the ecosystems and species within their borders in the context of chronic under-funding and significant land-use pressure. They have been especially effective in preventing land clearing, arguably the most serious threat to biodiversity" **********.

III. PLANNING, ESTABLISHING AND MANAGING PROTECTED AREAS AND PROTECTED AREA NETWORKS

3.1 The evolution of biodiversity conservation targets and approaches

106. In modern times, protected areas have been established mainly on an ad hoc, basis, to conserve sites of particular scenic beauty, or to protect the habitats of high-profile species such as tigers, bison, and pandas. Over time, the targets of conservation activity have evolved, and notions of protected areas planning have changed accordingly.

107. Redford et al.†††††††††††† trace the history of conservation targets ("objects of conservation activity"), noting that conservation in the western world began with a focus on species, first to protect useful species from over-harvesting and later to conserve species as objects worth protecting for their own intrinsic value. Later, ecosystems (such as tropical rainforests and coral reefs) became a conservation target, based on recognition of both the importance of ecosystem conservation for protecting species and the value of "ecosystem services" such as water and soil stability. Over the past few decades, "biodiversity" has been identified and widely adopted as a conservation target, most prominently through the forum provided by the CBD. Many countries have developed comprehensive systems plans and there are many good examples of methods for systems planning as well as site selection. However, the combined collection of protected areas that currently exists is not sufficient to meet the role expected by the Convention, in particular the WSSD 2010 targets, in conserving biodiversity. There has not been sufficient analysis of historic systems of protected areas in light of new ecological understanding. Many of the planets ecoregions are either not represented or inadequately represented by protected areas. In addition many unique sites and biodiversity hotspots are also not protected or inadequately protected.

108. All ecological systems operate at a range of spatial scales. If protected areas are to be effective in conserving biodiversity, they must be planned and managed at a range of spatial scales. Thus concern for protected areas management has evolved into a consideration of protected areas as being part of broader landscapes and ecological regions.

109. A multi-scaled approach to conservation has been taken up and endorsed by the CBD as the "ecosystem approach." COP Decision V/6 defines the ecosystem approach as:

> "….a strategy for the integrated management of land, water and living resources that promoted conservation and sustainable use in an equitable way….An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes,

§§§§§§§§§§ Carey *et al.* 2000.

********** Bruner *et al*. 2001.

†††††††††††† Redford *et al.* 2003.

> functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems."

110. Decision V/6 makes it clear that the ecosystem approach does not displace other conservation approaches – such as protected areas. Indeed, protected areas are a central component of the ecosystem approach:

> "The ecosystem approach does not preclude other management and conservation approaches, such as biosphere reserves, protected areas, and single-species conservation programmes, as well as other approaches carried out under existing national policy and legislative frameworks, but could, rather, integrate all these approaches and other methodologies to deal with complex situations."

111. Protected areas are part of an ecosystem approach when they are planned and managed as part of a continuum with their surrounding, landscape, and even broader ecological region. Recent advances in ecological theory have deepened our understanding of the effectiveness of protected area design in the conservation of biological diversity. It is clear that protected area size and connectivity are critical factors in the ability of protected areas to conserve biological diversity.

112. The size and configuration of protected areas can be informed by conservation science. While there are no absolute quantitative rules, it is clear that reserves that are large, that have compatible adjacent land uses and that are functionally connected to other reserves will protect more biodiversity that small, isolated reserves (see box 5).

113. It is recognized it will often be impossible to develop very large connected protected areas due to land use history and competing issues. It is also recognized that island ecosystems will have a considerably smaller conservation area requirements.

114. Since 1992, the World Heritage Committee of UNESCO has taken a number of decisions, guided by the recommendations of its advisory body (IUCN), that have enabled the Convention's State Parties to implement actions to improve connectivity between individual protected areas as well as links between protected areas and surrounding landscapes. For example, the Southeast Atlantic Forest Reserve of Brazil comprising 25 protected areas was inscribed as a single World Heritage area. The Committee's recommendation concerning a subterranean river protected area in Palawan, Philippines to include habitats surrounding the river's source resulted in the Government of Philippines undertaking extensive consultations with local communities and expanding the existing 5,000 hectare protected area into the 22,000 hectare Puerto Princess Subterranean River National Park, a World Heritage site. Global expert groups that have met to identify potential World Heritage sites in tropical forests (1998) as well as in tropical coastal and marine ecosystems (2002) have recommended that State Parties to the World Heritage Convention propose in-country and transboundary clusters of protected areas as World Heritage, rather than isolated individual protected area units, for consideration by UNESCO's World Heritage Committee for designation as World Heritage.

115. As a result of the widespread adoption of the ecosystem approach – at least at the level of scientific and conservation policy debate – and the need to balance the CBD objectives of conservation, sustainable use, and equitable sharing of benefits, reconciling tensions between biodiversity conservation targets and the use of biodiversity's components has emerged as a key challenge for protected areas policy and practice.

Box 5
Size Considerations for Protected Areas Related to Conservation Objectives and IUCN Classes

Objective	IUCN Category	Scientific-based Size Considerations
Conservation of entire ecosystems that are unharvested and have ecological integrity.	Category I, II	For continental ecosystems, the best advice is that extremely large areas are required to conserve all species and processes. In the Amazon this area has been calculated at 1,000,000 ha, while for continental North America the estimate is 500,000 ha. These estimates follow the predictions of island biogeography theory. Note that areas are much smaller for island ecosystems. The general rule is that bigger areas will protect more biodiversity than smaller areas.
Conservation of entire ecosystems that have sustainable use but are also managed to conserve biodiversity	Category V, VI	In general, ecosystems with sustainable use should be larger than unexploited ecosystems to protect the same species.
Conservation of specific species or community	Category III, IV	There are many tools available to calculate the area required to protect viable populations and/or communities (see IUCN Captive Breeding Specialist Group VORTEX program for example). The size required to ensure long-term protection will vary widely. If the objective is to protect a particular plant species, this may be done in an area of a few hectares. If the goal is to protect a viable population of a large predator, the area may be as high as one million ha.
Ensure connectivity of individual protected areas	Consistent with the Biosphere Reserve and other programs	The probability of conserving biodiversity is higher if individual protected areas are functionally connected. This means that organisms can disperse between sites or make use of more than one site by travelling between them. Functional connectivity may be achieved through compatible land use adjacent to protected areas as well through the provision of corridors.

* This table is meant to be illustrative. It does not imply that all protected areas that are classed according to IUCN categories must meet these criteria.

116. IUCN Protected Areas Categories V and VI specifically provide for sustainable use of biological resources in protected areas‡‡‡‡‡‡‡‡‡‡‡, and the issue is ubiquitous in areas directly adjacent to all protected areas, where numerous "integrated conservation and development projects" have been implemented in many parts of the world§§§§§§§§§§§. It is important to clarify that sustainable use in category VI lands is defined in the context of the area being "a predominantly unmodified natural system, managed to ensure long-term protection of biological diversity…"

117. Within the CBD process, a series of regional Sustainable Use Expert Workshops were held between 2001 and 2003, to develop "practical principles and operational guidelines for the sustainable use of biological diversity"**********. These principles and guidelines will be considered by the ninth meeting of SBSTTA.

118. As perspectives about biodiversity conservation and protected areas have built on one another – and as international conservation organizations have grown in influence and technical sophistication – an increasingly complex variety of approaches have been put forward to setting protected areas priorities, developing protected areas systems, and planning and establishing particular protected area sites. The most exhaustively documented and published methods are generally those developed or championed by international conservation organizations and, in some cases, development aid donor organizations. For this reason, the review of methods and approaches presented below is biased towards analysis of the work of these organizations.

119. It is important to remember, however, that national and regional efforts to establish protected areas systems and sites predate the more visible approaches championed by the international conservation community. In Latin America, for example, the first national parks were established in Chile in 1926, in Argentina in 1934, and in Colombia in 1948. Nor is the idea of a biologically representative protected areas system a new import to Latin America. The 1970 Quito "Declaration of Principles on Policy for National Parks," developed under the auspices of the FAO Latin American Forestry Commission, states, for example, that:

> "Through a review of a nation's ecological systems….it is recommended that at least one sample of each ecosystem and outstanding area be set aside for management [as a protected area]….The system should embrace the diversity of natural features in the country….[the size of protected areas] must be sufficiently extensive to include complete natural ecological units….Park management planning requires that adequate consideration be given to the sociological, ecological and economic aspects of the area on a multi-disciplinary basis"††††††††††††.

120. It is thus important to recall, in reviewing the "new" international approaches discussed below, that the planning and management of protected areas systems and sites, based on scientific as well as economic considerations, has a long history in many parts of the world. Indeed, one of the tasks that the CBD process may with to take up is the better documentation of national approaches to protected areas system and site planning and management, including effective mechanisms for stakeholder involvement. Much more information on this topic should emerge from the National Reports on protected areas to the CBD (due 31 May 2003), and the proceedings at the 5th IUCN World Congress on Protected Areas (September 2003).

3.2 Approaches to setting biodiversity conservation priorities

121. Governments, donors, and conservation organizations recognize that opportunities for establishing and managing protected areas are limited, and priorities therefore need to be set in a

‡‡‡‡‡‡‡‡‡‡‡‡ Phillips 2002.

§§§§§§§§§§§ Concerning integrated conservation and development projects (ICDPs), see: Mogelgaard, 2003; Hughes and Flintan, 2001; Wells and Brandon, 1992; Brown and Wyckoff-Baird, 1992.

********** UNEP/CBD/WS-Sustainable Use/4/2

†††††††††††† Miller 1989.

systematic, scientifically valid and transparent manner. To that end, a number of priority-setting methods have been proposed and implemented over the past decade or more. The scope of these methods varies, from broad-brush global approaches to detailed national and even local approaches. Overall conservation objectives are described in terms such as ecological integrity, ecological health and system sustainability. Within these broader objectives are nested sets of more specific conservation targets and priorities.

122. Typically, conservation targets and priorities are expressed geographically. Geographic priorities vary considerably, however, depending on the criteria used in arriving at them. The most common biological criteria include richness (the number of species or ecosystems in a given area), rarity, degree of endemism, threat, distinctiveness (how much a species differs from its nearest relative), representativeness (how closely an area represents a defined ecosystem), intactness, and function (the degree to which a species or ecosystem affects the ability of other species or ecosystems to persist). Additional non-biological criteria include utility (biodiversity elements of known or potential use to humankind) and feasibility (political, economic, institutional or logistical factors that will influence conservation success)‡‡‡‡‡‡‡‡‡‡‡‡‡. Other factors frequently considered include priorities for: (i) addressing biodiversity threats (e.g., invasive alien species, climate change); (ii) intervention approaches (e.g., alternative livelihood programs); (iii) agreed targets (e.g., to significantly reduce biodiversity loss by 2010); and (iv) areas requiring international cooperation (e.g., monitoring methods, transboundary protected areas).

123. These criteria can be applied at global, regional or national levels, depending on the scope and objective of the institution applying them. International conservation organizations and donors have been most active at applying such priorities at the global level, but have also assisted countries in setting priorities at the national level. As one moves from the global to the national level, of course, the practicalities of competing demands on lands and financial resources become determinative factors. Scientific criteria and concerns may be a necessary starting point for setting protected areas priorities, but they are rarely the ending point on the ground, particularly in developing countries.

124. At the global level, the most well-known approach is the "hotspots", "megadiversity countries" and "major wilderness areas" framework developed by Conservation International (CI). CI argues that:

> "Because biodiversity is by no means evenly distributed, some areas are far richer than others in overall diversity and endemism. Furthermore, many of the richest areas also happen to be under the most severe threat. Over the next few decades, focusing conservation efforts on areas with the greatest concentrations of biodiversity and the highest likelihood of losing significant portions of that biodiversity will achieve maximum impact for conservation investment"§§§§§§§§§§§§§.

125. The "hotspot" approach utilizes two criteria, endemism and threat, prioritizing those areas where both endemism and threat levels are high – each hotspot has at least 1,500 endemic plant species and has lost at least 70% of its natural habitat. CI has identified 25 such hotspots which in combination hold the entire ranges of 44 percent of the world's plants and 35 percent of terrestrial vertebrates in just 1.4 percent of the planet's land area**********. CI has also applied a parallel approach to coral reefs, and concluded that the 10 richest centres of reef species endemism cover only 15.8 percent of the world's coral reefs, but include approximately half of restricted-range reef species††††††††††††††.

126. Like the hotspot approach, the "major wilderness area" approach prioritizes high-biodiversity tropical ecosystems, but focuses on those areas still harboring "pristine" wilderness, where more than 75 percent of original pristine vegetation remains and population densities are less than 5 per km^2. Twenty-four wilderness areas have been identified following these criteria.

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‡‡‡‡‡‡‡‡‡‡‡‡‡ Johnson 1995.

§§§§§§§§§§§§§ Mittermeier *et al.* 1998.

********** Brooks *et al.* 2002. See also Myers *et al.* 2000.

††††††††††††††† Roberts *et al.* 2002.

127. The "megadiversity country" approach is, in CI's words, "a country-based method intended mainly to better market biodiversity conservation in the world's top 17 countries for species diversity and endemism"‡‡‡‡‡‡‡‡‡‡‡‡‡.

128. Another global approach to setting conservation priorities, WWF's "Global 200", focuses more on representativeness than on absolute levels of species richness and diversity, and attempts to achieve representation of all major habitat types. WWF argues that:

> "Conservationists have justifiably focused on the preservation of moist tropical forests (rain forests) because they harbor an estimated 50 percent of species on Earth. However, a comprehensive strategy for conserving global biodiversity should strive to save the other 50 percent of the species and the distinctive ecosystems that support them. Tropical dry forests, tundra, temperate grasslands, lakes, polar seas, and mangroves all contain unique expressions of biodiversity….Some of these major habitat types….are on average more threatened than are tropical moist forests and require immediate conservation action"§§§§§§§§§§§§§§.

129. The Global 200 uses "ecoregions" as the unit of analysis, defined as "a relatively large unit of land or water containing a characteristic set of natural communities that share a large majority of their species, dynamics, and environmental conditions." These ecoregions are stratified by realm, major habitat type, and biogeographic realm. Criteria for selection of priority ecoregions include species richness, endemism, higher taxonomic uniqueness (e.g. unique genera or families, relict species of communities, primitive lineages), unusual ecological or evolutionary phenomena, and global rarity of the major habitat type. These are applied, however, within each major habitat type and across biogeographic realms, to ensure representativeness.

130. The "Frontier Forests" priority-setting system developed by the World Resources Institute (WRI) focuses on identifying and protecting the world's remaining large intact natural forest ecosystems. These forests are "relatively undisturbed and big enough to maintain all of their biodiversity, including viable populations of the wide-ranging species associated with each forest type." Using this set of criteria, WRI determined that almost 70 percent of the Earth's total frontier forest lies within three countries – Brazil, Canada and Russia**********.

131. The Important Bird Area (IBA) approach developed by BirdLife International utilizes a specific taxon – birds – to establish global conservation priorities. Initial criteria focus on identifying areas important for species of global conservation concern, assemblages of restricted-range species and biome-restricted species, and major congregation sites. Using this method, BirdLife has identified some 7000 IBA sites in 130 countries††††††††††††††. The IBA approach has also been used in at the national level, in the Philippines, for example, where an exhaustive study conducted by BirdLife International and the Haribon Foundation (a national conservation NGO) has identified that countries key conservation sites‡‡‡‡‡‡‡‡‡‡‡‡‡‡.

132. The Ramsar Convention on Wetlands has established criteria for identifying wetlands of international importance. Under this system, priority wetlands include those that are a "representative, rare or unique example of a natural or near-natural wetland type," or which have particular significance for the conservation of endangered species, threatened ecological communities, important populations of plants and animals, or protect species at critical stages in their life cycles. In addition, there are specific criteria based on wetlands' importance for waterbirds and fish. Currently, 1267 wetland sites in the

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‡‡‡‡‡‡‡‡‡‡‡‡‡ Mittermeier *et al.* 1998.

§§§§§§§§§§§§§§ Olson and Dinerstein 1998.

********** Bryant *et al*. 1997.

††††††††††††††† BirdLife International, 2002.

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Mallari *et al*. 2001.

Convention's 136 Contracting Parties, totalling 107.5 million hectares, have been designated for inclusion in the Ramsar List of Wetlands of International Importance§§§§§§§§§§§§§§§.

133. The Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention), adopted in 1972, aims to engage all nations in protecting those sites that are the most important examples of the world's natural and cultural diversity. State Parties to the Convention are required to identify and delineate areas of cultural and natural heritage within their territory. To this end, "natural heritage" is defined as:

- Natural features consisting of physical and biological formations….which are of outstanding universal value from the aesthetic or scientific point of view;
- Geological and physiographical formations….which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science, or conservation; and/or
- Natural sites or….or natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

134. Specific criteria are enumerated for inclusion of a site in the Convention's Natural World Heritage List, including such factors as significant natural habitats for in situ conservation of biological diversity, outstanding examples of significant ecological and biological processes, sufficient size, and sufficient integrity in terms of containing all or most of the key interrelated and interdependent elements in their natural relationships. To date 175 States have ratified the Convention, and its 167 natural and mixed (natural and cultural) sites – which include well over 200 protected areas – are distributed amongst 76 countries**********.

135. UNESCO's Man and the Biosphere Programme, established in 1970, has initiated a global network of protected areas known as "Biosphere Reserves". From the outset, the goal was to identify a global system of designated areas consisting of representative ecosystems providing the broadest possible biogeographical coverage, thereby ensuring more systematic conservation of biodiversity. They are also intended, however, to operate beyond the boundaries and objectives of strict protection, and to incorporate the participation and needs of local communities through sustainable use. Although biosphere reserves are not governed by an international convention, they must serve three mutually-reinforcing functions to be listed:

- A conservation function – to contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- A development function – to foster economic and human development which is socio-culturally and ecologically sustainable; and
- A logistic function – to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

136. Sites are nominated by national committees, and should normally: be representative of a major biogeographic region; contain landscapes, ecosystems, species or varieties that need to be conserved; provide opportunities to demonstrate approaches to sustainable development within the larger regions where they are located; be of an appropriate size to serve the three functions mentioned above; and have an appropriate zoning system, with a legally constitute core area (or areas) devoted to long-term protection, a clearly identified buffer zone (or zones), and an outer transition area. Currently there are more than 400 sites in the network, with approximately 20 sites added annually††††††††††††††††.

§§§§§§§§§§§§§§§ http://www.ramsar.org. Accessed April 18, 2003.

********** Spalding 2002.

†††††††††††††††† Bridgewater 2002.

137. How do these priority-setting schemes actually affect protected areas decisions on the ground? Ultimately, priorities for establishing and investing in protected areas are set at the national level by governments' conservation and environmental agencies, many of which have been doing so for many decades – although in reality, such agencies must often bow to the priorities of more influential government agencies and powerful business interests, and are also sometimes influenced by the energetic lobbying of international and national conservation organizations.

138. Global priority-setting systems, however, sometimes influence the allocation of financial resources for protected areas which countries, particularly developing countries, can gain access too. The ways that the various international conservation organizations and international agreements such as the Ramsar and World Heritage Conventions set their own priorities also determines where they work and invest their considerable technical and financial resources. In addition, the international conservation organizations are often influential advisors to the major multilateral, bilateral and private donors that support conservation efforts. Their conclusions on where conservation funding should flow can therefore have very real financial consequences.

139. Many countries appear to have limited opportunities to create large connected protected area networks. However, there are significant opportunities for conservation through the means of ecological restoration. For example, there are on-going large scale restoration programs in the Everglades and prairie ecosystems of the United States. In many countries there are opportunities to restore ecological communities and create new, expanded or better connected protected areas through ecological restoration.

3.3 Developing national protected area system plans

140. CBD Article 8(a) specifically obliges each Contracting Party to "establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity." As noted above, many countries have chosen and established their protected areas within the context of attempting to develop a representative system of protected areas for some time, and comprehensive technical guidance on how to do so, such as Miller (1980), has been available for several decades. But as the focus of conservation has shifted to situate species- and site-focused initiatives within landscape-scale, ecoregional and ecosystem approaches, even greater emphasis has been placed on development of national protected areas systems plans, and a number of increasingly sophisticated methodologies for doing so have been developed.

141. Justus and Sarkar (2002) give the following rationale for a more systematic approach that emphasizes complementarity of protected areas sites within a system:

> "Explicit, quantitative procedures for identifying biodiversity priority areas are replacing the often ad hoc procedures used in the past to design networks of reserves to conserve biodiversity. This change facilitates more informed choices by policymakers, and thereby makes possible greater satisfaction of conservation goals with increased efficiency. A key feature of these procedures is the use of the principle of complementarity, which ensures that areas chosen for inclusion in a reserve network complement those already selected."

142. Selection of protected areas can be guided by scientifically developed tools aiming for not only including a representative sample of communities and species, but also for evaluating a protected area network in terms of its potential to sustain viable populations of focal species. These methods include site-selection algorithms (see example in Pressey *et al.* 1996) that select the optimal set of sites given one or several sets of criteria (e.g. number of species, habitats/ecosystem types, minimized edge lengths etc.). Furthermore, new population modelling tools can estimate viability and long-term survival of species in a network of habitat patches. It should be noted that these methods can be applied not only at a planning stage for setting up a new protected area system, but also used to evaluate existing systems and thus giving guidance for strengthening them‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡. Such methodologies are increasingly being

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Margules and Pressey 2000.

applied to on-the-ground conservation planning in numerous countries including Australia §§§§§§§§§§§§§§§§ and South Africa**********.

143. A methodologically simpler set of generic protected area system planning guidelines has been developed by IUCN's World Commission on Protected Areas (WCPA). WCPA's best practice guidelines on National System Planning for Protected Areas, state that:

> "A system plan is the design of a total reserve system covering the full range of ecosystems and communities found in a particular country. The plan should identify the range of purposes of protected areas and help to balance different objectives… [and]….identify the relationships among the system components….It should help demonstrate important linkages with other aspects of economic development.… [and]….should be a means to establish the priorities for workable national system of protected areas"††††††††††††††††.

144. System planning is encouraged by WCPA and others because it (a) ensures representative coverage of a country's biodiversity; (b) provides opportunities to link protected areas planning to consideration of issues in the wider geographic, institutional an economic landscape; and (c) can serve as a tool for considering and setting priorities at the national level. The WCPA recommendations on essential elements for a national protected areas system plan are presented in box 6.

145. A technically detailed and field-tested methodology for national system planning is the Ecoregional Planning (ERP) methodology developed by The Nature Conservancy (TNC), and now being applied by a number of governments and NGOs. The ERP methodology, which requires a collaborative, multi-stakeholder process, goes beyond "coarse-scale" prioritization schemes, and provides "a practical yet science-based planning framework for identifying the priority conservation areas within ecoregions"‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡. In China, for example, the State Environmental Protection Agency, in collaboration with TNC and a range of government agencies, is initiating an ERP-based exercise that aims to develop a national system plan of priority protected areas. In addition, a large number of state and federal government agencies in the United States are applying this ERP methodology, and the Government of Chile is considering using it as well.

146. The ERP Methodology uses the ecoregion as the unit of analysis, which it defines as "large areas of the earth's surface that have similarities in faunal and floral composition due to large-scale, predictable patterns of solar radiation and moisture". Within each ecoregion, the methodology encompasses six general steps: (i) collection of information (and identification of information gaps); (ii) identification of conservation targets (e.g., coastal mangrove forests); (iii) establishment of conservation goals; (iv) assessment of existing conservation areas (and identification of gaps in coverage); (v) evaluation of the ability of conservation targets to persist over time (including assessment of critical threats); and (vi) assembly of a portfolio of conservation areas. The methodology is designed to "identify a set of conservation areas that best represents the native species and ecosystems of the region and the underlying ecological processes that sustain them". The primary output of the process is identification of a "portfolio" or network of lands and waters for conserving the elements of biodiversity within an ecoregion§§§§§§§§§§§§§§§§. Determining how to best design and manage those conservation areas (i.e. protected areas) requires more detailed site-planning at finer scales, discussed below.

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§§§§§§§§§§§§§§§§ Finkel 1998.

********** Cowling *et al.* 2003; Pressey *et al.* 2003.

†††††††††††††††† Davey 1998.

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Groves *et al*. 2002. See also Groves *et al.* 2000.

§§§§§§§§§§§§§§§§ Groves *et al*. 2002.

Box 6
WCPA Guidelines on Essential Elements of a National System Plan for Protected Areas

- Clear statement of objectives, rationale, categories, definitions, and future directions for protected areas in the country;
- Assessment of conservation status, condition and management viability of the various units;
- Review of how well the system samples the biodiversity and other natural and associated cultural heritage of the country;
- Procedures for selecting and designing additional protected areas so that the system as a whole has better characteristics;
- Identification of the ways in which activities undertaken at national, regional and local levels interact to fulfil national and regional objectives for a system of protected areas;
- A clear basis for integration and coordination of protected areas with other aspects of national planning (e.g. with national biodiversity strategies, but also with land use, economic and social planning.);
- Assessment of the existing institutional framework for protected areas (relationships, linkages and responsibilities) and identification of priorities for capacity building;
- Priorities for further evolution of the protected areas system;
- Procedures for deciding the management category most appropriate to each existing and proposed unit;
- Identification of investment needs and priorities;
- Identification of training and human resource development needs for protected areas management; and
- Guidelines for preparation and implementation of management policies and site-level management plans.

Source: Davey 1998.

147. TNC's regional planning framework has been utilized for the development of over 45 ecoregional and regional conservation plans in the United States, Latin America, the Caribbean, Micronesia, and China's Yunnan Province. To facilitate the process, TNC has prepared a detailed Practitioner's Handbook to Ecoregional Conservation Planning**********.

148. Both the WCPA and ERP frameworks for protected areas system planning point out that the process by which a plan is prepared is as important as the ultimate content of the plan. The WCPA guidelines stress that if a plan is to be effective, it must reflect "on-ground needs and priorities, and must be 'owned' by those who will have to implement it…" and notes that "it is desirable to include the participation of the local people who live in and around the parks (or have other traditional or economic links with them) in developing the plan."†††††††††††††††† The ERP framework also emphasizes the importance of broad stakeholder participation.

********** Groves *et al.* 2000.

†††††††††††††††† Davey 1998.

3.4 Protected area site planning and establishment

149. The planning and establishment of particular protected area sites requires a more finely-focused and detailed process of ecological and socio-economic assessment than does systems planning. In developing a systems plan, planners are merely identifying, across a country or ecoregion, the sites of highest conservation value. Once those areas are identified, plans must be developed for each of them and their legal status needs to be established or clarified. In many cases, key sites will already have been established as protected areas, and the task in such cases is to assess their current condition, boundaries and management status in order to determine whether changes are needed to better serve the objectives of the overall systems plan. Processes for stakeholder participation (discussed in detail below) become extremely important in this process, since the design and legal designation of a particular site can have significant impacts on local people's access to resources and livelihoods.

150. Most countries already have methodologies for protected area site planning written into relevant legislation and regulations. New site planning methodologies may have many logical advantages and may be built on a foundation of the latest conservation science, but they need to integrate – not supplant – existing ways of doing things, if their proponents are to gain the support of protected areas policymakers and planners.

151. TNC has developed a comprehensive framework and methodology for site conservation planning, called The Five-S Framework for Site Conservation‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡, which is now being applied in many countries in collaboration with government and non-governmental partners. Based on TNC's own site planning experience over decades as well as the work of many other organizations, the Framework has influenced the development of other organizations' site-planning methods, including Parks Canada and WWF. General steps in the method include identifying the key targets for conservation at a site, analyzing threats, evaluating capacity, devising management strategies, and establishing systems for monitoring the effectiveness of site management over time (see box 7.)

Box 7
The Five-S Framework for Site Conservation Planning

Step	Brief description
SYSTEMS	The first part of the systems step comprises an analysis of conservation priorities based on national, regional and local endemism and diversity. Other criteria could include, for example, critical ecosystem services to local populations. The next part is to identify conservation targets that are ecosystems, habitats, distinct ecological communities or species requiring management, as a consequence of their being identified as high conservation priorities and their current or potential threat status. Usually no more than eight targets are selected. Species targets can be integrated into a larger ecosystem/habitat target. For example, a wetlands habitat such as an estuary may be specifically managed for invertebrate or plant species that are locally endemic to them. The viability or ecological integrity of each target is analysed based on size, condition and landscape context criteria. The integrity assessment identifies important ecological factors that need to be managed in order to reduce critical stresses. The assessment also enables the definition of management goals expressed as monitoring benchmarks.
STRESSES (part of Threats)	Stresses are the negative impacts on conservation targets that result from undesirable or incompatible human activities. All stresses identified for each conservation target are identified and their importance ranked based on (i) severity, and (ii) geographical scope. Examples include habitat loss, pollution and introduction of invasive alien

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ The Nature Conservancy 2000.

	species.
SOURCES of stress (part of Threats)	Sources of stress are analysed for each stress category under each conservation target, and their importance is ranked based on (i) their contribution to stresses, and (ii) irreversibility (how difficult they are to reverse or halt.) Examples include destructive fishing practices, unsustainable commercial-scale logging, and fuelwood collection.
THREATS – (combines stresses and sources of stress)	Stresses and sources of stress are combined into a 'threat.' Threats can be defined as 'critical threats', which are active/anticipated sources of stress, or as 'persistent stresses' which are stubborn, negative impacts that are a result of discontinued human activities. The separation of threats into critical and persistent is of considerable interest. Critical or active threats are clearly the highest priority for management as they continue to cause harm to the site. However, persistent stresses may be prioritized under certain conditions: if major critical threats are eventually reduced to acceptable levels, protected area managers may wish to devote resources to restoration of degraded habitats or diminished populations. The two threat categories therefore clarify where management should focus: on the reduction of active threats or the restoration of the environment. The level of threat can be evaluated by conservation target or by site. Examples include habitat fragmentation from swidden agriculture, and marine ecosystem degradation from overfishing.
CAPACITY evaluation	Evaluate capacity of management teams using a range of capacity criteria: leadership and support, adaptive management/ planning experience, financial resource availability, effective partnerships, etc.
STRATEGIES	Strategies are developed based on the analyses outlined above. Strategies are developed to abate specific threats. Their benefits are evaluated in terms of threat reduction/restoration value derived from (i) the threats they are designed to reduce, (ii) feasibility, and (iii) costs. Examples include alternative livelihood programs to combat illegal forest clearing, and agricultural intensification programs to reduce deforestation rates.
Measures of SUCCESS (=Monitoring and Evaluation)	A monitoring system composed of "measures of success" (i.e., indicators) is developed to measure three factors: (i) biodiversity health; threat abatement; and (iii) capacity. Biodiversity monitoring may be directly linked to key concerns identified during target viability analysis or be more generalized to provide early warnings of new or as yet undetected threats. Benchmarks to evaluate management success are defined. Ongoing monitoring is tightly linked to clearly defined management goals.

Source: Nicoll 2002.

152. The Five-S Framework has been widely and effectively used in the United States. But it can be a complex process, requiring considerable technical and financial resources to carry out. Experiences from Madagascar on how it can be adapted for use in developing countries, which may not possess high levels of capacity, are instructive. In 2000, Madagascar's protected area service (Parcs Nationaux de Madagascar – PNM) carried out an assessment of its national protected area systems plan, using the WCPA system planning guidelines as a model. The national system, it was determined, conformed closely to the WCPA guidelines, and PNM then moved on to adopting a framework for site planning and management. After reviewing available frameworks, PNM decided to model its approach on the Five-S Framework, which it viewed as the most exhaustive, science-based, field-tested system available.

153. While the Framework was at first "highly complex and difficult to grasp" for many participants in the process, it was successfully adapted and used to develop management plans and monitoring systems for the country's protected areas. One key change was modification of the framework's terminology to conform to existing national terms, making the whole system easier to understand and apply. Another important change was the addition of a category for ecological functions (i.e. ecosystem services) as a

conservation target. Overall, the exercise not only developed site management plans, but assisted PNM in identifying capacity-building needs for implementing the plans §§§§§§§§§§§§§§§§§§.

154. Receptivity to the Five-S Framework has been more variable in Latin America. While it has been enthusiastically adopted in some countries, resistance to its adoption has arisen in others. The main reason for this resistance is the fact, noted above, that most countries in the region already have guidelines for the preparation of protected area management plans written into their legislation. It is thus natural that resistance would arise to the promotion of a "new" methodology that is seen as a competitor to established ways of doing things, even if the old methods may no longer be congruent with current conservation science and evolving national conservation goals **********. It is also important to remember that national governments – unlike conservation organizations – have to balance many competing priorities – such as poverty alleviation and the promotion of agriculture and industry – against conservation objectives.

155. Another framework for site planning has been developed by BirdLife International, and applied in a number of African countries in collaboration with the Global Environment Facility (GEF). Key elements of this framework include: establishing the time frame; determining the institutional focal point, its mandate and expertise; analyzing tenurial and legal status issues; analyzing key threats and developing responses; developing a monitoring system; promotion of the site plan; assessment of available data and data gaps concerning biological and socio-economic information; assessment of financial resources; and integration of the site into wider conservation networks and frameworks††††††††††††††††††. The BirdLife International framework also includes a useful set of lessons learned, which are equally applicable to all site planning exercises (see box 8).

3.5 Stakeholder participation processes

156. The establishment of protected areas affects the livelihoods and interests of many people, groups and institutions. Without local support, effective and sustainable management of a protected area becomes extremely difficult. Conversely, where local people support a protected area's establishment, effective management becomes infinitely easier. In many cases, local people have been the initial proponents of the establishment of protected areas based on the benefits that may be realized. It is thus widely recognized that local consultation and participation are key ingredients for success in protected area planning and design. The need for effective stakeholder participation arises, in fact, at the stage of protected area system planning, when potential protected areas are being identified. As noted above, this process must take socio-economic and local political factors – as well as biological criteria – into account, and this is done most accurately and effectively with the participation of key stakeholders.

157. Participation can happen in indirect or direct ways. As the specificity of decisions increases, so does the need for the direct participation of the most concerned stakeholders. As protected areas planning moves from the system to the site level, and the objective moves from merely identifying areas of importance to planning and designing particular protected area sites, decisions often have concrete impacts on people's lives and livelihoods. The planning, design and legal establishment of protected areas must therefore be carried through a process that allows the direct engagement of all interested parties, and meaningfully responds to their concerns. "Consulting" an interested party – but then going ahead to do what you were planning on doing anyway, regardless of opposition – is not an adequate strategy for resolving potential conflicts and eliciting the societal support that a successful protected area requires.

§§§§§§§§§§§§§§§§§§ Nicoll 2002.

********** The Nature Conservancy nd.

†††††††††††††††††† BirdLife International 2001.

Box 8
Lessons Learned in the Development of Important Bird Area Site Action Plans

- Adequate time: Sufficient time should be allocated to planning. This is important to ensure that the planning process is done fairly and adequately in order to address all pertinent issues.
- Stakeholder participation and mobilization is essential at all times. Involvement of stakeholders ensures that the process, plans developed and implementation are "owned" by the stakeholders. Undertaking stakeholder analysis is essential.
- Understanding the socio-economic context is essential in order to sufficiently integrate socio-economic concerns into the plans. Issues of livelihood are important and they must be integrated in the plan if they are to succeed.
- Baseline information and data (ecological, socio-economic, history, management regimes and practices, indigenous knowledge and traditional management systems, geo-physical, etc.) must be collected. Site plans must be based on good information.
- Resources (funds, logistics, and manpower) for undertaking site plans should be identified or earmarked prior to implementation. This helps avoid frustration that will arise if the plan is not implemented due lack of funds.
- Close linkages between site plans and wider conservation strategies are essential so as to keep the plan relevant to priority conservation needs and approaches. Failure to achieve this often leads to plans that are not supported or simply not popular.
- Use of local expertise is important for sustainability and relevance. Local expertise should include both indigenous and scientific experts.
- Land and natural resource tenure (ownership, access and control) are important when determining which conservation options to pursue.
- Awareness is an important tool for bringing stakeholders on board and broadening political support for conservation of the site.

Source: BirdLife International 2001.

158. This is particularly the case in today's world, where the varieties of protected areas governance and management extend beyond the model where a national government agency administers and manages an area of land or water owned and controlled by the national government. In short, planning and design of protected areas need to encompass not just what needs to be done where, but must also address who will have the authority and responsibility to do it, and who will be accountable to whom. To the extent that local or indigenous communities, local government agencies, or the private sector may in fact be the governing authority – or co-governing authorities under a "co-management" scheme – it is imperative that these stakeholders are involved in the initial planning and design of the protected area. The subsequent section reviews protected area governance and management issues, while this section discusses elements and principles for participatory processes in protected area site planning that are useful for all protected areas, no matter what their governance and management regime.

159. The first step in establishing a participatory process is determining who the relevant stakeholders‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ are. "Stakeholders" in protected areas decisions might include: local and indigenous communities; protected area management authorities; other government agencies with natural resource portfolios; local administrative authorities (e.g. district or municipal councils and governments); local businesses and industries (e.g. tourism, water users); scientific research institutions; and non-governmental organizations. Referring to all such interested parties as undifferentiated "stakeholders," however, implies that all of their concerns and claims may be of equal strength and legitimacy, when this is rarely the case.

160. Borrini-Feyerabend argues that "not all stakeholders are equally interested in conserving a resource nor are they equally entitled to have a role in resource management. For the sake of effectiveness and equity, it is necessary to distinguish among them on the basis of some agreed criteria. Social actors who score high on several accounts may be considered 'primary' stakeholders. 'Secondary' stakeholders may score high only on one or two"§§§§§§§§§§§§§§§§§§§§. Possible criteria for distinguishing among stakeholders are presented in box 9.

Box 9
Possible Criteria to Distinguish Among Protected Areas Stakeholders

- Existing rights to land or natural resources;
- Continuity of relationship (e.g., residents versus visitors and tourists);
- Direct dependency on the natural resources in question for subsistence and survival (e.g. for food, fuel, medicine, communication);
- Unique knowledge and skills for the management of the resources at stake;
- Losses and damage incurred in the management process;
- Historical and cultural relations with the resources at stake;
- Degree of economic and social reliance on such resources;
- Degree of effort and interest in management;
- Equity in the access to the resources and the distribution of benefits from their use;
- Compatibility of the interests and activities of the stakeholder with national conservation and development policies;
- Compatibility of rights and/or commitments according to international conventions and agreements.
- Present or potential impact of the activities of the stakeholder on the resource base.

Source: Borrini-Feyerabend 1996.

161. There is no one right way to facilitate effective stakeholder participation, since countries, cultures, and protected areas vary so greatly across the planet. There are, however, a number of general

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ This Review uses the term "stakeholder" as it is widely used in the CBD context, but notes that use of the term is disputed by some because it often imparts a false equivalency of interests and rights to different parties who may in fact be more or less legitimate holders of rights and interests over particular territories and natural resources.

§§§§§§§§§§§§§§§§§§§§ Borrini-Feyerabend 1995.

approaches and principles that protected areas planners may wish to take into account and are often used in combination. These include:

Information sharing

162. Participation needs to be informed, and this requires the provision of adequate information to stakeholders in advance of consulting with them. In doing so, planners need to remember that different stakeholders will have different levels of technical expertise and local knowledge. Biologists, for example, may know very little about the socio-economic situation in an area, while local and indigenous communities are likely to have little background in conservation science. Efforts in effective social communication can provide occasions for people not only to receive information but to share it, discuss it and make sense of it in a collective context. In many cases, language may be a barrier, and key materials will need to be presented in appropriate local languages.

Participatory assessment exercises

163. Provision of information through written materials and briefings may not be adequate to level the participatory playing field for some local and indigenous communities. An additional way to do so is through various forms of participatory assessment and "visioning" exercises. These methods, utilized in many countries and communities, involve a process by which local communities analyze their socio-ecological environment, its problems and opportunities, the desired future they envisage for themselves and the future generations, the strategies to reach that future and the options and threats along the way. In this context, experts with new information on biological and ecological trends and the possible threats to the local natural resource base are perceived as allies in a process and not as outsiders attempting to use "scare tactics" on local stakeholders. Ultimately, participatory processes such as these can form the basis for long-term alliances for sound natural resource management**********.

Benefit sharing

164. Protected areas generate both costs and benefits which should be shared in a sustainable manner. One way of engaging local stakeholders in conservation is share benefits such as gate fees, tourism-related revenues, jobs and access to natural resources on a preferential basis. Cultural and spiritual benefits and values are often significant for local stakeholders, in particular indigenous and local communities, as well as the contributions of protected areas to their livelihood security and the social recognition of their rights to the land and their access and use of resources. Ideally, benefit-sharing arrangements are established through a negotiated agreement among stakeholders and protected area authorities.

Building capacity for local stakeholder participation

165. It is not always the case that a particular stakeholder group is clear about its own interests and concerns regarding a particular situation or environmental option, including the establishment of a protected area. It is also not often the case that such stakeholders have figured out how best to represent themselves in discussions and negotiations with outsiders such as protected areas authorities. At times, NGOs claim to speak for local communities, indigenous leaders claim to speak for their peoples, or private sector industry association representatives claim to speak on behalf of their membership but the legitimacy of such claims is not always clear. This can cause problems, when, for example, protected areas authorities claim to have "consulted" with a local or indigenous community, but the community does not in fact feel that it was fairly represented in the planning process. The time and travel constraints of participation also need to be taken into account. Participation is expensive, particularly for local and indigenous communities. Taking time off from work for meetings is not an option for many rural people, unless the process is designed with their particular needs in mind, such as harvest or fishing times, key religious or cultural events, and the difficulty and expense of travelling, particularly in the remote rural

********** For an extensive library and links on participatory rural appraisal methods, see http://www.eldis.org/participation; for information on community mapping methods, see Poole 1995 and Momberg *et al.* 1996.

areas where many protected areas are located. Local officials of poorly funded protected area agencies and local government units may face similar problems.

Involvement in decision making

166. Stakeholders can be involved in decision making in various ways, from being part of a consultative body to being members of a protected area Management Board. Essential elements of an effective consultative process are existence of a multi-stakeholder forum for communication, ongoing dialogue, and a process of consensual decision-making. The persons or organizations convening and facilitating the consultative process must be skilled and perceived as non-biased, objective and fair. If the convener or facilitator is viewed as biased towards the interests of one or another group, the process may be dismissed by the stakeholders as "fixed" and illegitimate. Participatory decision-making can not be a one-off event, after which planners can tick off the "participation" box on their list and get back to work. Rather, it involves an ongoing process, in which protected area staff and stakeholders plan and implement activities together through a credible and sustained process.

Community-led conservation

167. The strongest form of stakeholder involvement in protected areas management views stakeholders can be found in situations where local communities actually develop and manage their own conservation areas rather than participating as stakeholders in processes initiated and controlled by protected areas management agencies and external experts. Such "community-conserved areas" are discussed further below.

3.6 Protected areas governance

168. Setting priorities and carrying out systematic planning are important steps in establishing effective protected areas networks, but ultimately, the effectiveness of protected areas comes down to questions of governance and management. Who has the authority over the area, who bears the responsibility, who is accountable to whom? As previously noted, the traditional model of a single national protected areas agency managing parks comprising lands or waters owned by the state – albeit still important – is not the only protected areas governance and management system that currently exists. At least six other variations exist (and often overlap) in one form or another around the world:

- Decentralized governance by provincial/state or local government units;
- Co-management arrangements between governments, local communities and other stakeholders;
- Indigenous territories managed for conservation purposes by indigenous communities with or without the support and concurrence of the government;
- Community-conserved areas voluntarily established by local and indigenous communities, whether legally recognized by governments or not;
- Protected areas governed by private sector entities (both non-profit and for-profit) under contract or outright private ownership; and
- Transboundary reserves jointly managed by two or more governments.

Decentralized government management

169. Many countries are undergoing a process of decentralizing authority and responsibility for the management of biodiversity and natural resources to sub-national levels of government such as states, provinces, districts and municipalities†††††††††††††††††††. Often this is part of a more general decentralization of governmental powers and responsibilities. Protected areas have long been established and managed to some extent at sub-national and local levels, but this trend is accelerating rapidly, placing new responsibilities on local government units that are sometimes not prepared to carry them out.

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††††††††††††††††††† Dupar and Badenoch 2002; Ribot 2002; Wycoff-Baird *et al*. 2000; Lutz and Caldecott 1997.

170. Decentralization of protected areas governance and management has considerable potential advantages. Local governments may be more sensitive to the local situation and the needs and interests of key stakeholders. Management and enforcement may be more effective when their locus is closer to the ground. Local government officials are likely to be more aware of the local benefits of ecosystem services – such as watershed and coastal protection and soil retention – than are bureaucrats in a distant capital. Boundaries are likely to be set in greater conformity to local resource use. And, where local governments receive the rights to collect protected areas revenues along with the responsibility to manage them, their incentives to support protected areas may increase. Decentralization can also improve the efficiency and effectiveness of protected areas governance and management, as some responsibility may be delegated to private entities, civil society organizations, or NGOs that have relevant capacity or expertise.

171. Decentralization can also, however, pose considerable threats to protected areas. National or global conservation values are likely to be much less important to local officials than short-term revenues that may be obtained from logging, fishing and other uses of protected area resources. Financial and human resources may be severely limited, particularly when a system is in transition from a formerly centralized, top-down model. Lack of coordination among provincial/state governments can result in habitat fragmentation if central governments do not provide a unifying hand. And local government agencies may be less able to resist pressures from both business interests and local communities trying to encroach into protected areas for commercial or subsistence activities.

172. National governments therefore generally need to retain a clear role in setting minimum management standards, ensuring that land allocation decisions are made in line with the ecological characteristics of the area, and providing a venue for appeals by disaffected stakeholders from local decisions and actions they perceive as inequitable or illegal. Thus, national governments must maintain a functional, institutional link between parties responsible for national level policies and those responsible for planning and implementation at the local level.

Collaborative management with local communities ("co-management")

173. Co-management can be generally defined as "a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources"‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡. With specific reference to protected areas, it generally refers to:

> "….a partnership by which various stakeholders agree on sharing among themselves the management functions, rights and responsibilities for a territory or set of resources under protected status. The stakeholders primarily include the agency in charge and various associations of local residents and resource users, but can also involve non-governmental organizations, local administrations, traditional authorities, research institutions, businesses, and others"§§§§§§§§§§§§§§§§§§§§.

174. There is tremendous variation in co-management arrangements, ranging from situations where local communities essentially govern and manage a protected area with government only providing technical advice and support, to situations where most protected area functions are carried out by government, and local communities sit on a management oversight board. There is an extensive literature of analysis and case studies on both terrestrial and marine protected areas co-management**********, including numerous testimonies to the efficacy of the approach.

175. At the same time, certain community-based approaches have also been criticized by some conservation professionals, and "to a certain extent, skepticism is justified as, in recent years, there

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‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Borrini-Feyerabend *et al.* 2000.

§§§§§§§§§§§§§§§§§§§§ Borrini-Feyerabend 1996.

********** See McNeeley 1995; Western and Wright 1994. For analysis of marine protected area co-management, see: Parks and Salafsky 2001; Pomeroy *et al.* 1998; White *et al.* 1994; and the links and resources available from the Locally Managed Marine Area Network at http://www.lmmanetwork.org.

appears to have been far more rhetoric and enthusiasm about community-based conservation than practical and credibly documented examples on the ground"††††††††††††††††††††. In particular, care should be taken not to confuse co-management approaches with "Integrated Conservation and Development Project" (ICDP) projects, which use economic incentives to generate local support for protected areas, and have been widely criticized. The ICDP approach is based on the hypothesis that increasing incomes of local people automatically leads to reduced impacts on protected areas, but "in fact, the underlying assumption of such initiatives – that most biodiversity loss is causes through local overuse of natural resources by local communities – is flawed". While local economic incentives, properly understood and designed, certainly have a role to play, "it is well documented that wherever community involvement in protected area management has worked well, it has been facilitated by enabling policy and legislation, usually at the national level." Worah, for instance, concludes that it is best to:

> "….focus on the basic principles of community-based conservation which are to decentralise resource management to the local level, to put the appropriate system of incentives and the policy environment in place to enable this and to build capacity for local stewardship of natural resources. This would imply that the focus of community-based conservation initiatives needs to be on facilitating equitable negotiations between interest groups based on incentives and disincentives, check and balances and a supportive policy environment"‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡.

176. A comprehensive study of ICDPs in Indonesia reached similar conclusions, arguing that "Most ICDPs are proceeding as if PAs are failing because of increasing pressure from local people alone. This study suggests that the problems in PAs run much deeper than this and will not be adequately addressed by community-level approaches that are not linked to broader reforms in PA management – if not natural resource management in general"§§§§§§§§§§§§§§§§§§§§.

177. Despite the problems identified with ICDP approaches, there are many other effective examples of co-managed protected areas from around the world, and it seems clear that cooperative arrangements between the state and local communities will only grow in importance as a strategy for protected areas governance.

Management by indigenous and local communities

178. CBD Article 8(j) specifically calls on Contracting Parties to "….respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity….." This provision is particularly relevant for protected areas since the subject of CBD Article 8 is *in situ* conservation, and millions of indigenous people live within protected area boundaries. One review concluded that 86 percent of protected areas in Latin America, 69 percent in India, and 70 percent worldwide are inhabited, and the great majority of these inhabitants are indigenous, with 80 percent of protected areas in South America – and 85 percent in Central America – having indigenous peoples living inside them**********. CBD Article 10(c) is also important in this regard, since it obliges Parties to "protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements".

179. In the past, however, indigenous peoples have often been seen as an impediment to conservation and expelled from their ancestral territories when they were brought under state control and designated as protected areas. This view is summed up in the words of Bernard Grzimek, who campaigned to conserve wildlife on the Serengeti plains by excluding the native Maasai herders, arguing that "a national park

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†††††††††††††††††††† Worah 2002.

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Worah 2002.

§§§§§§§§§§§§§§§§§§§§ Wells *et al*. 1999.

********** Colchester nd.

must remain a primordial wilderness to be effective. No men, not even native ones, should live inside its borders"††††††††††††††††††††††.

180. This perspective is in complete opposition to the perspectives of many indigenous peoples themselves, who view themselves, their cultures and ways of obtaining their livelihood as inextricably linked to what others may perceive as "wilderness"†††††††††††††††††††††. As conceptions of protected areas have broadened, and indigenous rights over lands, waters and natural resources have received more political recognition, the views of conservationists and government conservation agencies have begun to move closer to the indigenous view.

181. Specifically, what many indigenous and traditional peoples' organizations demand is that protected areas established on their domains:

- Effectively protect those domains, as well as the people and cultures they contain, from external threats, and in particular reinforce traditionally protected areas;
- Recognize their rights to their lands, territories, waters, coastal seas and other resources;
- Recognize their rights to control and co-manage these resources within protected areas and allow participation of traditional institutions in co-management arrangements;
- Recognize the rights of indigenous and other traditional peoples to determine their own development priorities, as long as they are compatible with protected areas objectives;
- Be declared only at their initiative, and/or with their free and prior informed consent; and
- Incorporate sustainable use of natural resources using methods that maintain the integrity of the ecosystem and that have been used traditionally by indigenous peoples§§§§§§§§§§§§§§§§§§§§§§.

182. A review of 11 cases where protected areas overlap with indigenous or traditional territories, undertaken by WCPA and WWF, reached the following general conclusions:

- Indigenous and other traditional peoples are indeed actively interacting with protected areas around the world;
- Most protected areas reviewed in the case studies were proclaimed without the expressed consent of the people who previously inhabited the region. As a result, protected areas authorities have been making decisions without the full involvement of the key stakeholders;
- The situation is beginning to change, as a result of the greater acceptance of indigenous peoples' rights and the growing recognition that involvement of indigenous peoples is essential to avoid conflicts and to ensure long-term sustainability of the protected areas in which they live or have an interest;
- In reality, however, the involvement of indigenous and traditional peoples in protected area planning and decision-making processes often falls short of the ideal. One promising way to develop more effective co-management of such areas may be through informal consultation and discussions between government agencies and indigenous peoples' communities, perhaps facilitated by international organizations **********.

183. In 1999, WWF and IUCN endorsed a set of principles and guidelines on indigenous and traditional peoples and protected areas (see box 10 which is a considerable advance on past practice, and provide an important resource for implementing CBD Article 8(j).

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†††††††††††††††††††††† Adams and McShane 1992.

††††††††††††††††††††††† For numerous examples of indigenous perspectives on nature and natural resources, see Kemf 1993.

§§§§§§§§§§§§§§§§§§§§§§ Beltran 2000.

********** Beltran 2000.

Box 10
IUCN/WWF Principles on Indigenous/Traditional Peoples and Protected Areas*

Principle 1

Indigenous and other traditional peoples have long associations with nature and a deep understanding of it. Often they have made significant contributions to the maintenance of many of the earth's most fragile ecosystems, through their traditional sustainable resources use practices and culture-based respect for nature. Therefore, there should be no inherent conflict between the objectives of protected areas and the existence, within and around their borders, of indigenous and other traditional peoples. Moreover, they should be recognised as rightful, equal partners in the development and implementation of conservation strategies that affect their lands, territories, waters, coastal seas, and other resources, and in particular in the establishment and management of protected areas.

Principle 2

Agreements drawn up between conservation institutions, including protected area management agencies, and indigenous and other traditional peoples for the establishment and management of protected areas affecting their lands, territories, waters, coastal seas and other resources should be based on full respect for the rights of indigenous and other traditional peoples to traditional, sustainable use of their lands, territories, waters, coastal seas and other resources. At the same time, such agreements should be based on the recognition by indigenous and other traditional peoples of their responsibility to conserve biodiversity, ecological integrity and natural resources harboured in those protected areas.

Principle 3

The principles of decentralization, participation, transparency and accountability should be taken into account in all matters pertaining to the mutual interests of protected areas and indigenous and other traditional peoples.

Principle 4

Indigenous and other traditional peoples should be able to share fully and equitably in the benefits associated with protected areas, with due recognition to the rights of other legitimate stakeholders.

Principle 5

The rights of indigenous and other traditional peoples in connection with protected areas are often an international responsibility, since many of the lands, territories, waters, coastal seas and other resources which they own or otherwise occupy or use cross national boundaries, as indeed do many of the ecosystems in need of protection.

* These principles are complemented with 22 more detailed guidelines.

Source: Beltran 2000.

184. A recent review of case studies in Africa, however, illustrates that practice on the ground is still far from implementing these principles. Part of an ongoing project of the World Rainforest Movement's Forest Peoples Project, the Africa study reported that:

> "A shocking conclusion of this project is that the WCPA/WWF/IUCN Principles and Guidelines on Protected Areas and Indigenous/Traditional Peoples are not being followed in any of the ten cases that were examined. Not only are the principles being ignored, but before this project, conservation project managers were largely unaware of the suggested guidelines for enabling the principles to be put into practice, and in most of the cases

indigenous peoples' rights to their lands continue to come under increasing pressure from conservation agencies in their areas"†††††††††††††††††††††††.

185. It appears, therefore, that while CBD Article 8(j), the IUCN/WWF guidelines, and some examples on the ground are creating opportunities for more productive and equitable relationship between protected areas and indigenous peoples, a great deal more needs to be done to put these ideals and principles into practice.

186. The CBD Secretariat is currently preparing a "Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity", under Terms of Reference provided by the CBD Ad hoc Open Ended Working Group on Article 8(j) at its second meeting. The draft report will be presented to the third meeting of the Working Group, and then to the seventh meeting of the COP. It is expected that this report will contain considerable information and guidance directly pertinent to the relationship of indigenous peoples and protected areas.

Community-conserved areas

187. While government declaration and management – or co-management – of protected areas has been the norm in most countries, there are also significant numbers of "Community-conserved areas" in many countries, where indigenous and local communities – not the state – have taken the initiative and declared what is, in effect, a protected area. Community-conserved areas (CCAs) can be defined as "natural and modified ecosystems including significant biodiversity, ecological services and cultural values voluntarily conserved by concerned indigenous and local communities through customary laws or other effective means"‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡.

188. Community-conserved areas have three essential characteristics. First, the relevant local or indigenous communities are concerned about conservation and sustainable use of the ecosystem or ecosystems in their area, usually because they have either cultural significance or importance for local livelihoods. Second, the decisions and actions of the community result in effective conservation, although protection status may have been established for a variety of objectives, possibly unrelated to conservation *per se*. Third, the indigenous and local communities hold the decisive power over decision making and implementation of decisions regarding the ecosystems at stake, implying that some form of community authority exists and is capable of enforcing regulations.

189. The distinctive element of CCAs is the fact that institutions of the community – not the state – hold legitimate authority, in the eyes of the community – over an area's conservation status and the actions taken to conserve it. In some countries – such as Australia and some countries in the Pacific and South America, the state has recognized CCAs and provided useful supporting measures, such as legislation prohibiting fishing in community-declared marine sanctuaries. In other cases, however, government "recognition" has meant the dilution of community authority or even supplanted CCAs with superimposed state forms of protected area status§§§§§§§§§§§§§§§§§§§§§§§§§.

Private management

190. In some parts of the world, large landholders allocate property for conservation purposes, sometimes incorporating tourism. In Natal Province in South Africa, for example, some 8 percent of the land is in publicly-managed protected areas, but an additional 14 percent is under conservation management by private landowners**********. Privately-owned or managed protected areas are generally established in areas where there are sufficient attractions (such as coral reefs or visible wildlife) to ensure that non-consumptive use of the area's resources is a commercially attractive land use.

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††††††††††††††††††††††† Forest Peoples Project 2003.

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Borrini-Feyerabend 2003.

§§§§§§§§§§§§§§§§§§§§§§§§§ Borrini-Feyerabend 2003.

********** McNeely 1999.

191. There has been considerable recent interest in the idea of private "conservation concessions" as a protected areas management strategy. In one formulation, "under a conservation concession agreement, national authorities or local resource users agree to protect natural ecosystems in exchange for a steady stream of structured compensation from conservationists or other investors"†††††††††††††††††††††††††. In its simplest form, therefore, a conservation concession is like a logging or fishing concession, except that the investor pays the government to manage the area for conservation purposes rather than resource extraction.

192. In other cases, a government may essentially lease an existing protected area to investors who agree to manage it for conservation and ecotourism purposes, sharing management and profits with the government. The Nature Conservancy, in a joint venture with an Indonesian tourism venture, is testing this model at Komodo National Park in Indonesia‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡.

Transboundary protected areas

193. National borders hamper the efficient conservation and management of natural areas crossing one or more borders, because ecosystems and species do not always conform to political boundaries. There are many longstanding instances worldwide of cooperation between two or more adjoining protected areas divided by international boundaries, such as the Waterton–Glacier International Peace Park, established in 1932 and straddling the US-Canada border, the La Amistad International Park (Costa Rica and Panama), the Lanjak-Entimau national park (Malaysia and Indonesia), the Great Limpopo Transfrontier Park (Mozambique, South Africa and Zimbabwe), and the Eastern Carpathian transboundary Biosphere Reserve (Poland, Slovakia and Ukraine). There are also examples of marine transboundary protected areas, such as the Ligurian Marine Mammal Sanctuary on the Mediterranean coast of France, Monaco and Italy. Such initiatives have significant value in promoting cooperation between nations as well as great practical benefits for management. As the focus of conservation has moved towards landscape-scale and ecosystem approaches, and recognition of the importance of ecological corridors and connectivity, interest in the practical conservation benefits of transboundary protected areas has increased§§§§§§§§§§§§§§§§§§§§§§§§. As of 2001, there were at least 169 complexes of two or more adjoining protected areas divided by international boundaries, involving a total of 667 protected areas representing 113 countries. Levels of formalization and cooperation vary, with some already formally established as transboundary protected areas (TBPAs), but all with potential to become formal TBPAs**********.

194. 173. IUCN defines a transboundary protected area as "An areas of land and/or sea tha t straddles one or more boundaries between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limits of national sovereignty or jurisdiction, whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed co-operatively through legal or other effective means†††††††††††††††††††††††††††." In addition, a network of coordinated national protected areas belonging to more than one country may be considered TBPAs, if these PAs share common objectives (e.g., conservation of habitats of a migratory species or conservation of ecological elements of representativeness value), and their management is harmonized.

195. 174. TBPAs may be established through high-level political initiatives of governments, local efforts on the ground (for example by protected area staff), or by intervention of third parties such as NGOs, UN and academic institutions, or international conventions. TBPAs may be formally connected through legislation, but may also be separate protected areas under cooperative management

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††††††††††††††††††††††††† Rice 2002.

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ For information on The Nature Conservancy's "conservation concession" initiative at Komodo National Park in Indonesia, see http://www.komodonationalpark.org.

§§§§§§§§§§§§§§§§§§§§§§§§ Sandwith *et al*. 2001.

********** Zbicz 2001

††††††††††††††††††††††††† Sandwith *et al.* 2001.

arrangements based on local agreements, without formal merging of the protected areas. In some cases, transboundary "peace parks" have been established as a strategy for reconciliation in areas of recent conflict or disaster.

196. 175. TBPAs are valuable in that they can combine and coordinate biodiversity conservation efforts and the conservation of ecological services at a scale that is larger than what can be accomplished by the constituent protected areas in isolation. Some important benefits of TBPAs are:

- Enhancing conservation of ecoregions, landscapes, ecosystems and species;
- Promoting a holistic approach with respect to zones and biomes;
- Facilitating the management of transboundary natural resources;
- Promoting international cooperation at different levels and in different fora;
- Attracting additional financing from international sources;
- Enhancing commitment from partners on regional and global scales;
- Facilitating more effective research;
- Bringing economic benefits to local and national economies; and
- Ensuring better cross-border control of problems such as fire, disease, biological invasion, poaching, marine pollution and smuggling.

197. While TBPA's can have many benefits, their establishment must overcome difficulties related to differences in legal systems, culture and capacity levels (see box 11).

Box 11

Constraints on Transboundary Protected Areas Cooperation

- Incompatible policies with regard to resource use versus resource protection;
- Imbalances in power between partners due to differential commitments of resources;
- Misunderstandings based on religious or cultural differences, or language barriers;
- Political tension or armed conflict;
- A lack of parity with regard to the ratification of international protocols or conventions;;
- Differences or conflicts in legal frameworks and provisions;
- \Impediments to rapid response to emergency situation where transnational consultation is required;
- Difficult terrain, inaccessibility, and lack of transboundary transportation links;
- Different levels of professional standards in protected areas agencies and variable levels of authority given to protected areas directors on each side of the border;
- Technical incompatibilities in communication, fire suppression equipment, GIS systems, etc.

Source: Hamilton *et al.* 1996

3.7 Managing protected areas: Key responsibilities and tasks

198. Whatever type of governance structure a protected area has, the core tasks of management remain roughly the same, although their relative importance and the methods for carrying them out will necessarily vary from place to place. Financial resources also greatly influence the thoroughness with which these various responsibilities can be implemented. In general, assuming a Protected Area

Management Plan has been prepared and approved, the key tasks which protected areas managers must carry out include:

Management plan implementation

199. A key task for managers is the implementation of the management plan for the protected area. Too often, management plans are prepared and then not followed by managers for a variety of reasons, with the result that the objectives of the protected area are not fully met. The specific content of the management plan or the general guidance offered by the management plan informs the manager as to how to go about the tasks outlined below. At a minimum, management must establish some sort of presence for the protected area in order to demonstrate that a specific decision has been made over the future management of the place. If funds or other constraints do not allow establishment of infrastructure and personnel, then at least signs need to be erected and information distributed informing of the presence of the protected area.

Delineation of protected area boundaries

200. Physical survey and marking of boundaries – and, in some cases, the boundaries of zones within a protected area – are important, but a protected area needs "living boundaries" that are understood, agreed and respected by local stakeholders. Thus, the process typically involves negotiation and consensus-building, not just surveying and installing boundary markers. Management must seek to ensure that all interested parties understand where the boundaries are so that appropriate management occurs within the protected area and that boundary incursions (with inappropriate activities) do not occur. Managers will be assisted in this task if the boundaries are easily followed on the ground.

Development and maintenance of infrastructure and equipment

201. Infrastructure needs will vary with the type of protected area, and may include office buildings, vehicles, research facilities and equipment, roads, water supply, communications equipment, firearms and amenities for visitors. Maintaining equipment and facilities over time is, of course, as important as initially installing or acquiring it.

Personnel, financial and administrative management

202. Like any organization, a protected area management entails a considerable amount of work in recruiting, managing and retaining qualified staff; managing and accounting for money; and other administrative tasks. Identifying and responding to capacity-building needs is an important element of this set of tasks.

203. It is noted that in some instances the managers may not have the internal capacity to undertake some of these functions and the work may be contracted out to an outside organization. Such an approach may not necessarily increase the skill level within the organization. The cost of recruitment and training are also noted as being a considerable draw on resources and a balance needs to be struck between spending money on these important tasks and spending money on field operations.

Monitoring, assessment and trend analysis

204. Protected area managers can only determine if their management regime is serving its conservation objectives through systematic monitoring and trend analysis, over time, of the key biological or other components that are the conservation targets (or which impinge on the conservation targets) of the protected area, such as key species, habitats and communities. This set of tasks can be facilitated through collaborative arrangements with universities, scientific institutions, and conservation organizations. In many places, the traditional knowledge of local and indigenous communities may also enhance monitoring efforts, if those communities have been brought into the management planning process through a good participatory process.

Practicing adaptive management

205. Over time, most protected areas managers find that they need to change one or another aspect of the management system they oversee. Methods to systematically assess management objectives and activities and adjust them in light of experience and changing circumstances have been developed and widely employed‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡, and managers need to adapt and employ these for their own particular situations.

Managing tourists, researchers and bioprospectors

206. Many protected areas receive very large numbers of tourists, as well as scientists and bioprospectors conducting research within the area. Managers therefore must think about conditions, permits and fees for entry, the provision of information through maps, briefings, and exhibits, monitoring visitors' actions to ensure they obey the rules, and attending to the medical needs of visitors who meet with accidents or fall ill. With respect to scientists and bioprospectors who wish to obtain access to genetic resources in protected areas, appropriate conditions should be respected, such as the prior informed consent of competent national authorities and agreement on the terms of access, including benefit sharing. These may vary depending on the intended use of the resources accessed, whether commercial or non-commercial (see box 12.)

Box 12
Access to genetic resources and benefit sharing in protected areas

The third objective of the CBD provides for the fair and equitable sharing of benefits arising out of the utilization of genetic resources. Article 15 addresses the terms and conditions for access to genetic resources and benefit-sharing. It recognizes the sovereignty of States over their natural resources and provides that access to these resources shall be subject to the prior informed consent of the Contracting Party providing such resources. It also provides that access shall be based on mutually agreed terms in order to ensure the sharing of benefits arising from the commercial or other utilization of these genetic resources with the Contracting Party providing such resources. In addition, under article 8, paragraph (j) of the Convention, Parties have undertaken to encourage the equitable sharing of benefits arising out of the utilization of knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.

At its sixth meeting, in 2002, the Conference of the Parties adopted the Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits Arising Out of their Utilization. The guidelines are to assist Parties, Governments and other stakeholders in developing an overall access and benefit-sharing strategy, and in identifying the steps involved in the process of obtaining access to genetic resources and benefit-sharing. More specifically the guidelines are to assist Parties, Governments and other stakeholders when establishing legislative, administrative or policy measures on access and benefit-sharing and/or when negotiating contractual arrangements for access and benefit-sharing.

Up until now, different approaches have been adopted to address access to genetic resources and benefit-sharing in protected areas. While certain countries, such as Costa Rica and the Philippines, have developed national legislation for access to genetic resources and benefit-sharing which provide that access to genetic resources in protected areas will be conditional to the prior informed consent of the competent authority in protected areas, a number of countries have no specific policies to address access to genetic resources and benefit-sharing in protected areas. Examples of access and benefit-sharing arrangements related to genetic resources from protected areas are included in Laird and Lisinge (2002).

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ See, for example Oglethorpe 2002 and Margoluis and Salafsky 1998.

207. There is a need to have formal relationships with users of protected areas, including researchers, so that there are clear limits on the activities they can undertake. In the case of people wishing to undertake an extractive use or develop infrastructure (or even undertake research) there is a need to have a formal contract document setting out the limits of the activity and the conditions under which it can occur. There is also a requirement on managers to monitor the adherence to the conditions of any contracts or agreements which are established.

Maintaining good relationships with local communities

208. Where people are living in or adjacent to protected areas, managers will need to devote considerable time and skill to ensuring that relationships with these communities are harmonious. In cases where an area is governed under a co-management regime, working with local communities may the most important and time-consuming of a manager's tasks.

Maintaining relationships with indigenous peoples

209. In many instances indigenous peoples may have a different relationship with the protected area and its values than local communities who may not be indigenous peoples. Park managers must be sensitive to this difference and respond to indigenous peoples and their needs in an appropriate manner.

Resolving conflicts and disputes

210. Disputes between protected areas authorities and other stakeholders – such as local communities, business interests, or even other government agencies – inevitably arise. Managers therefore need to establish processes for discussing and resolving such disputes and, if necessary, referring them to other authorities, including traditional authorities. If management plans have been carefully prepared through a consultative process and are clear in their content and direction the opportunity for conflict and dispute should be significantly reduced. This is one of the reasons why managers should ensure that implementing the management plan is one of their primary tasks.

Surveillance and law enforcement

211. The approach to surveillance and law enforcement is dependant on circumstances. Managers should seek to reduce the need for law enforcement through public information and education. In some protected there is no need for park managers to undertake significant law enforcement activity, this function being left to local police departments. Nevertheless, since many parks are under threat from various forms of human encroachment, much of which is illegal, patrol and enforcement are often key tasks for protected areas managers. To effectively carry out these tasks, personnel must have a good understanding of the law, sufficient training, in some cases, in the use of firearms, and a well-established relationship with law enforcement authorities. Strong links to law enforcement agencies are particularly important in situations where violators may be well-organized and well-armed, as is often the case with illegal fishing, logging, and wildlife poaching. Enforcement tasks become much easier when relationships with local communities and other stakeholders are friendly and based on agreed rules and principles. In the ideal situation, local communities themselves support conservation of the area and assist with surveillance.

Promotion

212. Protected area managers need to actively promote the values and successes of their protected area. This is simplified if managers monitor the results of their management, in order to show the world that their protected area is carrying out its mission effectively and efficiently. Some managers may find it advantageous to engage with the media, so that both successes can be brought to the attention of a wider audience.

213. In addition to the level of individual sites or clusters of sites, management requirements also occur at the level of national and regional (sub-national) protected areas systems. As protected areas are increasingly expected to contribute towards national development goals and generate social and economic

benefits to nearby people and communities, system managers' abilities to liaise and cooperate with their counterparts across development sectors become a necessary condition for effective management. System-level leadership, communications and negotiation skills are also critical for the design, development and operations of protected areas, protected area systems and/or ecological networks that harmonize conservation and development goals.

214. A more detailed analysis of the tasks required of protected areas managers and the skills needed to discharge them, based on extensive research and consultation in Southeast Asia has been carried out by the ASEAN Regional Centre for Biodiversity Conservation (ARCBC)§§§§§§§§§§§§§§§§§§§§§§§§§§§§. The report describes 24 key protected areas jobs, divided into 17 technical categories and five levels, and elaborates a total of 250 distinct skills needed for protected areas management and the performance standards needed to fulfil them. As such, it is an important effort to provide guidance and detail on what is meant by the often-used but rarely-defined term "capacity-building" with respect to protected areas management.

IV. FINANCING PROTECTED AREAS

4.1 The reasons that protected areas are under-financed

215. It is widely recognized that the financial resources available for biodiversity conservation in general and protected areas in particular are grossly inadequate, particularly in the developing countries. The systemic reasons why financial resources for conservation are inadequate is relatively straightforward: the value of Earth's "natural capital" is poorly understood and greatly under-valued. This is compounded, in particular in developing countries, by the limited financial resources available that could be devoted to conservation in the face of more immediate and pressing concerns such as alleviating poverty, promoting economic growth, and servicing international debt burdens.

216. Short-term political horizons encourage the exploitation of biological resources to meet short-term economic goals. However, liquidation of these natural assets often goes unaccounted in national and company balance sheets, thus artificially reducing costs and inflating profits. The considerable economic value of ecosystem services (previously discussed) do not register in conventional markets (value does not become price), and are therefore not considered being "real" economic assets by policymakers. At the same time, perverse incentives (e.g., ill-considered subsidies) further undermine the weight of biodiversity concerns in decision-making processes. One recent study concluded that globally, subsidies, which are both economically and ecologically perverse, totals between $950 billion and $1950 billion each year**********.

217. This systemic under-valuation of biodiversity results in a common view that establishment of protected areas incurs huge opportunity costs, particularly for developing countries. Thus, limiting the use of biological resources by putting them in a protected area:

> "….may be perceived by both land owners and the host country government as a foregone development opportunity, one of the few such opportunities available, and should be treated as such by its advocates and beneficiaries rather than as a global resource that the host country has an obligation to protect. To a tropical developing country facing limited options, a development opportunity may be as scarce and its loss as irreversible as endangered species and habitats are to the developed world. Once biodiversity conservation is viewed as a foregone development opportunity by both sides, the critical question is what would it take to compensate the host country for the lost opportunity"††††††††††††††††††††††††††.

§§§§§§§§§§§§§§§§§§§§§§§§§§§§ Appleton *et al.* 2003.

********** Balmford *et al*. 2002.

†††††††††††††††††††††††††† Panayotou and Glover 1995.

218. These opportunity costs are not as great as they are perceived to be by governments, of course, if they accept that biodiversity and the protected areas that conserve it have tangible economic value themselves. Some governments have come around to this perspective, particularly when they are confronted by the very tangible economic losses arising when ecosystem services such as hydrological function and soil retention fail, resulting in floods, droughts, and water shortages.

219. Local communities, however, often suffer direct economic losses when their access to biological resources (such as bush meat, timber, non-timber forest products and access to agricultural land) is cut off by establishment of a protected area. While the protected area may be producing considerable economic benefit for society at large in the form of ecosystem services or ecotourism revenues, the affected local people are in essence subsidizing those flows of values to the state and the wider society.

220. Thus, the question of "financing protected areas" cannot be viewed solely in terms of the costs of running a protected area management agency, demarcating boundaries, developing infrastructure, patrolling, research, monitoring, and the like. Ensuring that the burdens of protected area establishment are not disproportionately visited on local communities bears a tangible financial cost that must be factored into the equation. "Hence, conserving relatively intact habitats will often require compensatory mechanisms to mitigate the impact of private, local benefits foregone, especially in developing countries"[‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡]. This same principle applies, of course, to economic development and other activities pursued for public benefit which constrain private rights and activities.

4.2 Protected areas financing – the current situation

221. The gap between the costs of adequately financing protected areas and the current level of actual protected areas funding is very large. A 2002 study estimated the total annual cost of a global, representative system of protected areas at US $45 billion, including the establishment of new areas, recurrent management costs, and payments to meet private opportunity costs of existing and new areas. The authors noted that while this seems like an exorbitant sum, it represents less than 5 percent of existing agricultural and natural resource subsidies around the world, and equals only 0.2 percent of total global GDP[§§§

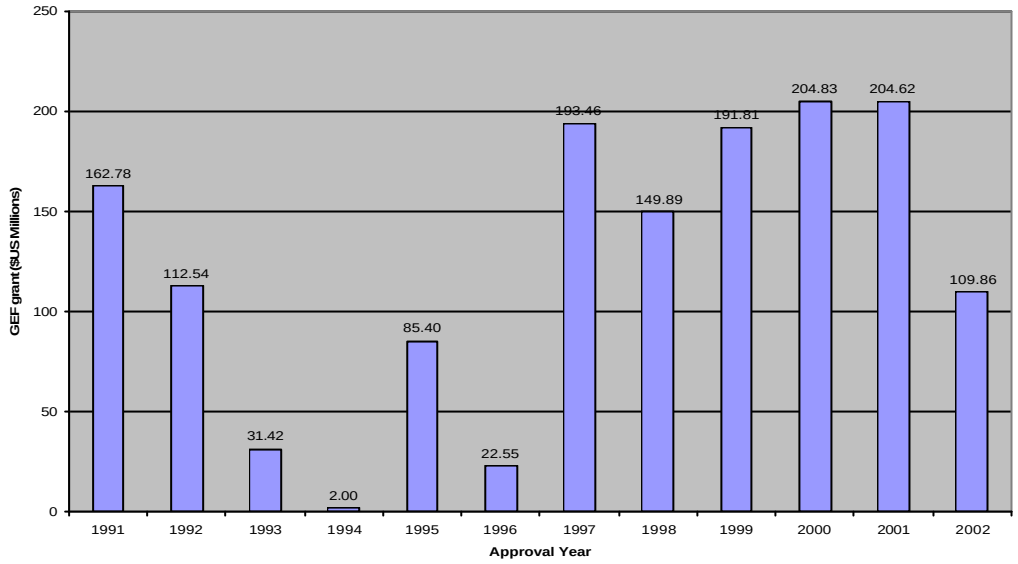
224. While protected area financing in the developed world is relatively substantial compared to that in the developing world, there is still a marked gap in the resources required. A preliminary study in the European Union (EU) estimates, conservatively, that between EURO 3.7 and 5.4 billion is required annually between now and 2013 to sustain the Nature 2000 protected areas network. This is many times the existing level of funding available. Options under examination include increasing funds under existing protected areas financing instruments, redirecting funds from agricultural support and regional development funds, and the creation of new financing instruments. While the amount of financing required is significant, it is modest compared to the Euro 75 billion financing available annually under the EU's agricultural and regional budgets.

225. Many developing countries depend on foreign assistance to help finance management of their protected areas. According to a 2001 study by the OECD Development Assistance Committee, 19 donor governments provided just under $3 billion in "biodiversity-related aid" during the three-year period 1998-2000 – less than 3 percent of their total overseas development assistance‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡. This figure, however, covers activities related to water supply, agriculture, forestry, fisheries, general environmental protection and rural development. Thus, it is likely that the total developed government financial support for the management of protected areas for biodiversity conservation objectives is much less than this.

226. Bilateral support to protected areas is a major source of financing, and frequently provides support for experimenting with integrated conservation and development programs. Examples are: DFID contributions to sustainable tourism development and poverty eradication in areas around Nepal's Sagarmatha National Park, GTZ support to a number of sites including Sabaga and Kahuzi Biega National Parks of the Democratic Republic of Congo, JICA support to develop an Environmental Management Plan for the Ha Long Bay World Heritage Area in Vietnam, and contributions as agreed in a Memorandum of Understanding between countries (e.g. between the Netherlands and Ukraine.

227. The Global Environmental Facility (GEF) operates the CBD's financial mechanism, and as such has provided significant funding to implement CBD objectives, including protected areas. The GEF reported to the Sixth COP on spending under its biodiversity portfolio for July 1999- June 2001. During that period, GEF allocated $434 million in grant financing out of total project costs of $1.666 billion. The non-GEF project cost total of $1.232 billion was leveraged in co-financing for project activities from bilateral and multilateral agencies, recipient countries and the private sector. The report also notes that since the establishment of the GEF as a pilot program in 1991 through June 2001, over $1.3 billion has been provided in grants from the GEF Trust Fund for biological diversity activities, complemented by $1.3 billion in co-financing, for a total of $2.6 billion§§§

Figure 2
GEF Financial Allocations to the Biodiversity Focal Area 1991-2002



Source: Data compiled from http://www.gefonline.org.

230. The GEF is, therefore, a significant source of international financing for protected areas, and it will continue to be so in the coming years. The 2002-2006 GEF replenishment, agreed in mid-2002, totals $2.92 billion, and over the next three years, roughly US $552 million of this will be programmed for biodiversity projects in developing countries and countries with economies in transition[†††††††††††††††††††††††††††]. A May 2003 GEF document states that "Protected areas (PAs) remain the critical foundation of biodiversity conservation worldwide, and as such, they will continue to be supported as a major thrust of GEF-3. This priority encompasses the achievement of ecological, institutional, social, political and financial sustainability in the context of national level PA systems"[†††††††††††††††††††††††††††]. Of the US $ 552 million programmed for the next three years, US $ 260 million will be allocated to catalysing the sustainability of protected area systems.

231. Continued support for protected areas from the GEF and other multilateral and bilateral donors is crucial for developing countries, since developing country governments allocate insufficient resources to protected areas themselves. This can become a vicious cycle that must be broken if protected areas in developing countries are to achieve financial sustainability. For this to happen, more attention needs to be paid to the modalities, levels and conditions of government funding provided as counterpart to donor assistance. Data on the levels of protected areas funding by developing country governments – apart from what they receive from donors – is very sketchy.

232. In addition to public funding, a rough estimate of the private annual grant-based funding worldwide for conservation (private foundations, corporations, and individuals) approaches US $1.2

[†††††††††††††††††††††††††††] Global Environment Facility 2003, C21.Inf11 Strategic Business Planning.
[†††††††††††††††††††††††††††] Global Environment Facility 2003.

billion, with about US $600 million from foundations§§§

might even be lower given the recent stock market declines), well below the endowment targets envisaged by the creators of these funds**********.

238. Only about 20 countries in the world are taking significant advantage of tourism-related user fees as a source of long-term, dedicated revenue for conservation. Most of these are industrialized countries. Due to the uncertain policy environment and the fact that many such markets are in the very early stages of development, only a handful of countries are utilizing other sustainable financing sources such as water fees, carbon sequestration fees, and other payments for environmental services. However, such payments have the potential to become significant sources of funding for protected areas in the future.

239. Barriers to expanding sustainable financing mechanisms for protected areas include:

- Insufficient contributions by external donors to endowments;
- Lack of political will of host-country governments to put sustainable finance mechanisms in place in the face of competing, short-term financial priorities;
- Lack of capacity (technical knowledge, institutional know-how and specialized tools) needed to assess and implement sustainable finance mechanisms;
- Lack of appropriate non-traditional partners;
- Inadequate policy and legal enabling environments;
- Insufficient diversification of the income/revenue resource base.

4.4 The need to invest in protected areas strategically

240. What funds there are to support protected areas are not being allocated very strategically, resulting in diffuse, unbalanced, un-prioritized and often ineffective interventions. Capacity for adequate and efficient financial management is weak. With limited financial resources, it is imperative that funds be allocated as strategically and efficiently as possible. There are several dimensions to this problem:

241. *Lack of focus and rigor in deciding where to invest.* The numerous systematic efforts to scientifically set geographic conservation priorities at both national and global levels were discussed above, and some funding institutions are utilizing these frameworks. In general though, at the global level and within countries, resources are not being allocated in accordance with these new science-based priority frameworks, and funds are thus not getting to many priority ecoregions. Even within priority ecoregions, resources are generally not being allocated effectively to priority sites. It is understandable that economic and political pressures and priorities will always influence such decisions, but where these pressures dominate decisions on protected areas investment rather than transparent methodologies based on science, it cannot be said that funds for protected areas are being efficiently invested for the purpose of conservation and sustainable use of biodiversity.

242. One recent study reported that conservation costs varied from as little as US$0.20 per hectare per year in parts of the Brazilian Amazon, up to more than US$1 million per hectare per year in some projects in Europe. The example may be extreme, but it illustrates the gross imbalance in funding available for conservation in rich and poor countries.

243. *Weaknesses in investment project design*. While some funders use a logical framework approach to designing projects, even this method generally lacks sufficient rigor in terms of identification of conservation targets, identification of threats to these targets, and design of a full range of effective threat mitigation strategies. This often leads to donor-funded projects that are not as well designed as they could be and often omit or gloss over key sustainability elements such as sustainable finance mechanisms, compatible enterprise strategies, media campaigns and public awareness activities, and policy and institutional reforms.

********** For comprehensive information on conservation trust funds, see Bayon *et al*. 1999 and Norris 2000.

244. *Inadequate efforts to measure effectiveness*. Not enough is being invested in systems for measuring success of conservation projects to determine what works. Monitoring, analyzing and reporting this information is an essential element for both improving management effectiveness and garnering political and financial support for increasing investment in protected areas.

4.5 Harnessing private financial flows

245. In the past decade, there has been a dramatic shift in public versus private financial flows. Private financial flows to developing countries now far outstrip public development aid. In the last ten years, foreign direct investment (FDI) in developing countries has quadrupled from approximately US$60 billion per year in the early 1990's to US$241 billion in 2000. Of the 19 percent of FDI flow to developing countries, 80 percent goes to 10 main recipients: China, Brazil, Mexico, Singapore, Thailand, Argentina, Indonesia, South Korea, Poland and Chile, while only 0.7 percent of the world's FDI reaches African countries†††††††††††††††††††††††††††††.

246. Unfortunately, FDI frequently has significant adverse impacts on biodiversity outside protected areas, through financing of unsustainable logging, agriculture, tourism development, petrochemical and mining operations, and other activities†††††††††††††††††††††††††††. (Similar comments, of course, apply to much government spending on major infrastructure and other programmes.)

247. In order to mitigate the often-substantial negative impacts of extractive industries (e.g. mining, oil and gas), the use of mitigation fees should be explored. Because of the enormous magnitude of revenues associated with resource extraction projects, this mechanism has particularly high potential to generate large scale funding for protected areas.

248. Conversely, there is considerable potential to harness these private financial flows to support conservation. Properly designed, new environmental business opportunities (e.g. ecotourism, organic agriculture, shade-grown coffee, certified forestry, etc.) can contribute significantly to biodiversity conservation by shifting local employment away from more destructive livelihood activities (e.g., blast fishing, large-scale commodity crop monoculture). Yet major barriers exist to scaling up such environmental businesses, including lack of technical business planning capacity, lack of investment capital, lack of a pipeline of viable enterprises for investment, and difficulties with engaging the financial services industry.

249. The lack of demand for environmentally-friendly goods and services remains the biggest impediment. Overcoming this challenge requires a serious marketing effort, or alternatively, clearly defined and agreed obligations (e.g. biodiversity conservation targets) and accompanying policy incentives.

250. It is worth noting the recent growth of carbon markets, but these initiatives are largely focused on energy conservation, with relatively little investment in forest-based carbon sequestration. Even where the latter has occurred, the benefits to biodiversity are hotly debated and unlikely to be replicated in the near future, due to the exclusion of "avoided deforestation" as an eligible activity in the tropics under the Kyoto Protocol, and the probable dominance of intensive, exotic species plantations in the emerging market for carbon sequestration services§§§§§§§§§§§§§§§§§§§§§§§§§§§§§§§§. Promoting carbon sequestration projects (through the UNFCCC and otherwise) that take into account biodiversity considerations will be critical to the success of many biodiversity conservation efforts, including those in and around protected areas.

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††††††††††††††††††††††††††††† IUCN and WBCSD 2002.

‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡‡ Wood *et al.* 2000.

§§§§§§§§§§§§§§§§§§§§§§§§§§§§§§§§ Concerning climate change-related carbon sequestration and its relationship to biodiversity conservation, see Smith and Scherr 2002, and Orlando *et al*. 2002.

4.6 Strategies for raising protected areas revenue

251. Increasing the level of protected areas financing will require resort to a much broader spectrum of financing instruments and mechanisms than the traditional sources of funding from national government budgets, aid agencies and multilateral financial institutions. Many innovative mechanisms exist and have been extensively documented and analyzed. The Conservation Finance Alliance – a consortium including numerous international conservation organizations, the Secretariat of the Ramsar Convention, UNDP, the World Bank, the GEF, GTZ and USAID – has produced a Training Guide for Conservation Finance Mechanisms* on CD-ROM, and numerous related publications have been produced by its members. The Guide contains comprehensive information and decision tools on a wide range of conventional and innovative finance mechanisms.

252. In brief, some of the more important innovative strategies and instruments for financing protected areas include the following†:

253. *Debt-for-Nature Swaps*. Initiated during the Latin American debt crisis of the 1980s, debt-for-nature swaps enable developing countries to reduce their foreign debt while generating additional revenues for conservation activities. Commercial debt-for-nature swaps are those in which (a) a bank or other commercial creditor agrees to sell debt owed to it by a developing country to third parties at a substantial discount from the debt's face value, because the creditor does not expect the debtor government to ever to fully repay its debts; (b) conservation organizations raise funds to buy the discounted debt from the creditor; and (c) the conservation organizations come to an agreement with the debtor government on the amount of local currency that the government will spend on new conservation activities in exchange for the conservation organizations' cancellation of the debt. The second form is a bilateral debt reduction program (e.g. the US Tropical Forest Conservation Act), involving the cancellation of "sovereign" debt owed by one government to another, in exchange for an agreed level of new and additional conservation expenditure by the debtor government in local currency.

254. *Conservation Trust Funds*. As previously noted, a number of countries have established conservation trusts funds of various kinds over the past decade or so. These may take the form of endowment funds (in which the capital is never spent), sinking funds (which spend not only their investment income but a portion of their capital each year), and revolving funds (which are continually replenished by income from dedicated fees or taxes). Endowment funds are the most common.

User fees, taxes and other charges that are earmarked for protected areas. These can be voluntary or mandatory and may include:

- fees for protected area entry, concessions (such as restaurants), and recreational activities such as diving;
- airport and cruise-ship passenger charges;
- hotel room surcharges;
- taxes on hunting, fishing and camping equipment;
- royalties for resource extraction (e.g. petroleum) and rights of way for infrastructure such as transmission lines and pipelines;
- payment for ecosystem services (such as watershed maintenance and carbon sequestration);
- hunting and fishing fees;
- fuel and property taxes;
- lottery revenues;
- bioprospecting fees; and
- fines for illegal logging, hunting, fishing, and pollution damage.

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* The full contents of the Conservation Finance Alliance's *Training Guide for Conservation Finance Mechanisms* can be downloaded from http://www.conservationfinance.org. The guide contains an extensive bibliography.

† Examples in the section are drawn from Spergel 2001.

255. Other mechanisms with potential include encouraging private sector firms to make philanthropic contributions to protected areas; encouraging local companies to make donations to particular projects as sponsors; the payment of a conservation compensation charge by developers who undertake a particular activity (e.g. assessing a conservation fee on mining activities within a country, to be spent on the country's protected areas system).

256. All of these innovative instruments and mechanisms have considerable potential for raising protected areas revenue, but they all share a common drawback: they are new, and frequently complex to implement – at least the first time – with significant administrative and other start-up costs. Investments in building capacity to implement innovative conservation finance initiatives should therefore be a high priority for donors, governments, international conservation organizations, and the Parties to the CBD. As noted above, the tools are largely in place, the challenge is to empower and mobilize protected areas managers and policymakers to use them, particularly in the developing countries.

257. As a final but important consideration it should be emphasized that a shift is needed in the focus from site-based financial sustainability to a more comprehensive national system-based approach. This should include principles of cross-subsidizing between protected areas, and should focus on the principle of a diversified income resource base, not relying overly on any given source of funding. Associated with the shift towards addressing financial sustainability at the protected area system level is an adequate focus on creating the necessary enabling policy, legal and fiscal environment. In addition, it should be recognized that it is in particular internally generated revenues that are currently missing as a substantial source of protected area financing, which continues to rely mainly on government and donor financing.

4.7 Mainstreaming protected areas into sustainable development financing

258. The key to achieving full mainstreaming of protected areas into sustainable development financing lies in showing and convincing governments to stop seeing protected areas as liabilities but rather as national economic assets. Once this is achieved, they will receive the same attention as other traditional economic sectors. However, despite the potential of the market-based mechanisms discussed above, the "business case" for protected areas – even using the new insights of "ecological economics" concerning the values of ecosystem services – will not generate funds for all protected areas. Some of them are too remote, and in others, the pressures for short-term exploitation of their resources are too strong. In any case, as previously discussed, humanity values protected areas for reasons other than purely economic ones. Hence the importance of shifting the focus from site-based financial sustainability to the level of the national system.

259. In the tropical developing countries – where biodiversity is richest and the threats to it are greatest – public development assistance provided by the developed countries through their bilateral agencies and the multilateral financial institutions will remain a cornerstone of protected areas financing for the foreseeable future, and must increase if protected areas in those countries are to survive. For this to happen, protected areas must come to be seen as an essential part of sustainable development.

260. As noted earlier, the UN Millennium Development Goals (MDGs) are now a key organizing principle for development assistance for the agencies of the UN system, the multilateral development banks, and many bilateral agencies, and the MDG goals and targets will likely drive the direction of most development aid for the coming decade.

261. Will this increase or decrease donor financial support for protected areas? One of the indicators for meeting MDG Goal 7 ("Ensure Environmental Sustainability") is indeed the "amount of land area protected to maintain biological diversity". But this will only be taken seriously to the extent that the case can be made to governments and donors that protected areas are, in fact, an essential element of efforts to eradicate poverty, hunger, disease, and environmental degradation. The specific case for financing protected areas as an integral part of projects to achieve the MDGs is still not well accepted by either donors or developing country governments.

262. In developed countries, there is also a need to improve the integration of financing for protected areas into general financing for sustainable development including within the key economic sectors of

agriculture, forestry and fisheries; this may entail the redirection of existing support funds to conservation objectives.

V. MEASURING THE EFECTIVENESS OF PROTECTED AREAS MANAGEMENT

5.1 Rationale for measuring management effectiveness

263. Today, almost a tenth of the world's land surface is in some form of protected areas, and there is an extensive and growing network of marine protected areas. Consequently, there has been considerable interest in monitoring and evaluating the effectiveness of protected areas in support of improved management and to enable protected areas to fulfil the aims for which they were established.

264. Reasons for monitoring, evaluating and reporting on protected area effectiveness include the following:

- A prime objective of evaluation is the development of an open, accountable and professional approach to management. Evaluation is thus an essential tool for ensuring both financial and managerial accountability and management effectiveness. Evaluation thereby helps governments and other funding bodies to assess whether results are being achieved commensurate with effort and resources expended, and in line with policy and management objectives‡.
- Evaluation is also used to influence policy to improve protected area systems and management arrangements, and may be used by managers to develop requests or proposals for additional resources. Such requests are more likely to be successful when they can be justified on the basis of evaluation results.
- Further, an assessment of management effectiveness is important in reviewing how well the interests of local communities and other stakeholders, including national and international stakeholders, are being taken into account within the context of protected area objectives and programmes.
- Evaluation supports adaptive management, a circular process that allows information concerning the past to feed into and improve management in future. Evaluation consists of reviewing the results of actions taken and assessing whether they have produced desired results. Evaluation focuses attention on management objectives, and supports a process of learning in improving management action§.
- Evaluation may also be used to support program and project planning either during initial design or in reviewing previous programmes in order to apply lessons learned. Programmatic reviews may also be used to assess whether particular programs should be continued or resources re-allocated to other operational areas**.
- Monitoring, evaluation and reporting are vitally important in enabling countries to meet obligations under international and regional conventions and programmes calling for the establishment of protected area systems and sites.

265. Obtaining greater understanding of the effectiveness of marine protected areas is currently of special concern for a number of reasons (see box 13).

266. Cifuentes *et al.* define effective protected area management as "the combination of actions that make it possible to satisfactorily fulfil the function for which the area was created, based on the area's particular traits, capacities and context"††. Measuring the effectiveness of protected areas encompasses

‡ Hockings *et al.* 2000.

§ Margoluis and Salafsky 1998; Hockings and Phillips, 1999; Hockings *et al*, 2000.

** Hockings *et al*. 2000.

†† Cifuentes *et al.* 2000.

many different aspects, ranging from design issues; achievement of stated objectives; the identification and reduction of threats; management capacity and effectiveness; and financial viability and sustainability of protected area systems and individual sites.

Box 13
Measuring the effectiveness of marine protected areas

Marine ecosystems are faced with a range of serious threats including pollution, overexploitation, conflicting uses of resources, damage and destruction of habitats, and other harmful consequences of human development. Yet Marine Protected Areas (MPAs) account for less than 1% of total area and there is very little information on whether even that miniscule portion of the planet's marine heritage is being effectively protected. A 1995 IUCN study on MPAs concluded that:

- Data on management effectiveness are sketchy, pointing to a general absence of evaluation of management effectiveness.
- Only 31 percent of those MPAs for which data were available (383 sites out of 1,306) were assessed as having a high management level and generally achieved their management objectives, while the majority ranked either "moderate" or "low".
- Reasons for MPAs failing to achieve their management objectives included: insufficient financial and technical resources to develop and implement management plans; lack of trained staff; lack of data on which to base management decisions; lack of public support; unsustainable use of resources within MPAs; impacts and threats from areas outside the boundaries of MPAs; and lack of clear organizational responsibilities for management, as well as absence of coordination between agencies with responsibilities relevant to MPAs‡‡.

The years since 1995 have seen the establishment of many new MPAs, an increased emphasis on management planning§§, and the development of assessment frameworks for the effective management of marine protected areas***. MPAs were also highlighted in the WSSD Johannesburg Plan of Implementation (Paragraph 31(c)), which calls for the "establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012". The issue of MPA effectiveness has been specifically taken up by the CBD ad hoc Technical Experts Group on MPAs, which met twice (in 2001 and 2002) and produced detailed recommendations on evaluating MPA effectiveness†††.

Nevertheless, a great deal remains unknown about which approaches to MPA design and management are most effective in conserving marine biodiversity. Expert views differ, for example, on the balance to be struck between "no-take" versus sustainable use MPA approaches‡‡‡.

267. Canadian National Parks have used the term "ecological integrity" as a formal management endpoint, and the concept is defined and formalized in legislation. For National Parks there is a legal requirement to monitor for, and report on, ecological integrity. A similar approach is used in the EU which uses the concept of "favourable conservation status".

‡‡ Kelleher *et al*. 1995.

§§ See for example, Salm and Clark 2000.

*** See, for example, Pomeroy *et al*. 2002; Jameson *et al*.2002.

††† Report *of the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas*. UNEP/CBD/SBSTTA/8/INF/7. 13 February 2003.

‡‡‡ Concerning the debate over "no-take" marine reserves, see Agardy *et al.* 2003.

268. Despite the acknowledged importance of effectiveness evaluation, comprehensive evaluations have been relatively rare. Some effectiveness assessments have been carried out, of course, but they have tended to focus on monitoring biological conditions§§§, assessing a limited set of management indicators. One-off evaluations of a management agency or one of its programs have been more common,**** and over the past few years, NGOs have become increasingly involved in undertaking assessments of protected areas effectiveness. At regional and global scales, publications such as the United Nations List of Protected Areas††††, Protecting Nature: Regional Reviews of Protected Areas‡‡‡‡, and regional overviews such as Protected Areas Systems Review of the Indo-Malayan Realm§§§§, have provided some information on management effectiveness. But these reviews were not intended to provide systematic evaluations of management effectiveness, and do not do so.

269. In the past few years, however, efforts to develop more robust and comprehensive approaches have proliferated. Most prominent among these is the IUCN Framework for Assessing Management Effectiveness, which provides an "umbrella" of guiding concepts under which a range of more specific methodologies have been developed.

5.2 The IUCN framework for evaluating management effectiveness

270. The IUCN framework was developed over a three-year period by the IUCN World Commission on Protected Areas (WCPA) Task Force on Management Effectiveness, in association with the IUCN/WWF Forest Innovations Project, WWF Netherlands, WWF Forests for Life Campaign, WWF/World Bank Alliance and the World Heritage Convention. The report *Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas***** sets out theoretical and methodological aspects, and also contains six case studies on the application of the framework in both developed and developing countries. A key aspect of this framework is that it may be used to build an evaluation methodology at the level of an individual protected area or for a system of related protected areas (see table 2 and Figure 3.)

271. Components of the IUCN framework include design of systems and individual protected areas (context and planning), appropriateness of management systems and processes (inputs and processes), and delivery of protected area objectives (outputs and outcomes). These components are divided into six elements, elaborated below, each comprising a number of evaluation indicators to assess management effectiveness.

Context:

272. Evaluation indicators are aimed at answering the question "where are we now?" This includes assessment of conservation and other protected area values (e.g. biological, cultural, and economic), as well as current status, threats and opportunities affecting protected areas, including the broad policy environment. The four main criteria where effectiveness is assessed are significance (e.g. an international site, hosts endemic threatened species, contains unique ecosystems), threats (e.g. internal, external, resource exports), vulnerability (extent to which a protected area can withstand the impact of identified threats) and national context (e.g. policy framework, ability and willingness to pay for protection). The focus of this evaluation is on status.

Planning:

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§§§ In the UK, the Countryside Council for Wales developed an approach for monitoring Sites of Special Scientific Interest (SSSIs), closely tied to planning and management systems (Alexander and Rowell 1999). In Australia, the Great Barrier Reef Marine Park Authority and the Australian Institute of Marine Science established a programme of long-term monitoring for the Great Barrier Reef (Sweatman 1997). Both of these approaches were restricted, however, to monitoring of biological indicators.

**** See, for example: Kothari *et al*. 1989; Edwards 1991; WWF and the Department of Environment and Conservation of Papua New Guinea 1992; Environment and Development Group, 1997.

†††† IUCN 1998a.

‡‡‡‡ McNeely *et al.* 1994.

§§§§ MacKinnon 1997.

***** Hockings *et al*. 2000.

273. Evaluation is aimed at answering the questions "where do we want to be and how are we going to get there?" Assessment considers the appropriateness of national protected area legislation and policies, plans for protected area systems, the design of individual protected areas and plans for their management. The selection of indicators depends on whether a whole system or an individual protected area is being considered. For example, issues of ecological representativeness and connectivity will be important at the systems level, while shape, size, location and detailed management objectives and plans will be the focus of assessment for individual protected areas. The focus of this evaluation is on appropriateness.

Inputs:

274. The key question here is "what do we need?" Assessment is aimed at determining the adequacy of resources in relation to the management objectives for a system or a site, based primarily on measure of staff, funds, equipment and facilities required at either agency or site level, along with consideration of the importance of partners. This question is directly related to considerations of financial viability and sustainability. The focus of this evaluation is on resources.

Process:

275. The question addressed here is "how do we go about it?" Assessment is aimed at reviewing the adequacy of management processes and systems in relation to the management objectives for a system or site. Indicators include aspects related to day-to-day maintenance, adequacy of approaches to local communities, and various types of natural and cultural resource management. The focus of this evaluation is on efficiency and appropriateness.

Outputs:

276. The key questions on this issue are "what did we do and what products or services were produced?" Output evaluation considers what has been done by management, examines the extent to which targets, work programmes or plans have been implemented, and assesses the delivery of products and services. The focus of this evaluation is on effectiveness.

Outcomes:

277. The true test of management effectiveness is "what did we achieve?" Evaluation is therefore aimed at assessing whether management has been successful with respect to the objectives in a site or system plan and ultimately, the aims of the IUCN category of the protected area. Approaches to outcome evaluation involve long-term monitoring of the condition of biological and cultural resources of the system/site (including progress with respect to threat reduction), socio-economic aspects of use, and the impacts of the management of the system/site on local communities. The choice of indicators to be monitored is critical and the focus of this evaluation is on effectiveness and appropriateness.

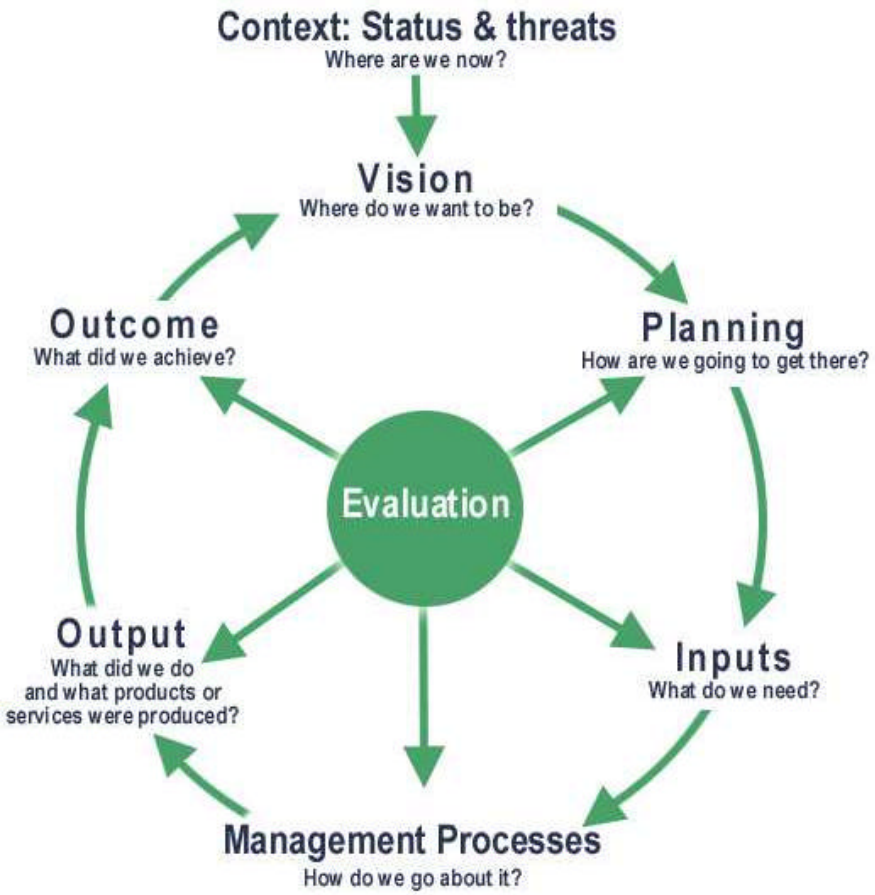
278. Guidelines on applying the IUCN Framework include a procedure for identifying the type of evaluation likely to be needed (e.g. toward the 'context' or 'outcome' end of the spectrum); presenting the assessment; selecting and prioritizing indicators; and developing an evaluation system. The framework also provides a list of potential indicators to be used within the evaluation framework.

279. For example, a grouping of indicators aimed at addressing context considerations includes "threats" such as (a) inappropriate general resource policy; (b) external threats (e.g. pollution); (c) internal impacts (e.g. agriculture, poaching); and (d) resource extraction (e.g. logging, mining).

280. In comparison, process indicators include aspects related to implementation of the management process such as planning, communication, training, research, reporting, visitor management, conflict management, and budget and financial control.

Figure 3

The Protected Area Management Cycle and Evaluation



Source: Hockings et al. 2000

Table 2
IUCN framework for assessing management effectiveness of protected areas and protected area systems

Elements of evaluation	Design issues		Appropriateness of management systems and processes		Delivery of protected area objectives	
	Context	Planning	Inputs	Processes	Outputs	Outcomes
Explanation	Where are we now? Assessment of importance, threats and policy environment	Where do we want to be? Assessment of PA design and planning	What do we need? Assessment of resources needed to carry out management	How do we go about it? Assessment of the way in which management is conducted	What were the results? Assessment of the implementation of management programs and actions; delivery of products and services	What did we achieve? Assessment of the outcomes and the extent to which they achieved objectives
Criteria that are assessed	Significance Threats Vulnerability National context	Protected area legislation and policy Protected area system design Reserve design Management planning	Resourcing of agency Resourcing of site Contributions from Partners	Suitability of management processes	Results of management actions Services and products	Impacts: effects of management in relation to objectives
Focus of evaluation	Status	Appropriateness	Economy	Efficiency Appropriateness	Effectiveness	Effectiveness Appropriateness

Source: Hockings *et al.* 2000

281. The IUCN Management Effectiveness Framework provides a set of guidelines and an approach for developing systems to assess management effectiveness. It does not, however, provide a detailed methodology for assessment, since the methodologies used in different contexts must be fitted to the purpose and context of a particular evaluation. The World Heritage Convention, for example, has collaborated with IUCN and other partners to adapt the IUCN Guidelines into a manual and workbook for evaluating management effectiveness at World Heritage sites, under the 4-year (2001-2004) "Enhancing Our Heritage" project funded by the United Nations Foundation††††.

282. The IUCN Framework therefore differs in kind from context-specific management effectiveness assessment methodologies such as the World Heritage effort. A number of other context-specific protected areas management effectiveness evaluation efforts, many developed using the IUCN Framework as a guide, are summarized in Appendix III.

VI. PROTECTED AREAS CAPACITY DEVELOPMENT

6.1 The Scope of Protected Areas Capacity Development‡‡‡‡

283. Effective management of protected areas requires that protected area managers and supporting institutions have sufficient knowledge, capabilities, and resources to plan, manage, monitor, and protect protected areas, and that an extensive community of stakeholders be involved in constructive ways that contribute to the maintenance of biodiversity and the sustainable flow of goods and services from protected areas. Managing protected areas adaptively to address weaknesses and threats and take advantage of strengths and opportunities is an enormous challenge. It will require many kinds of capacity, both internal and external to protected area management, including new methods for sharing lessons learned in diverse sites all over the world, and the capacity to adapt to many kinds of global change.

284. *Capacity* can be defined as the ability to perform functions, to solve problems, and to set and achieve objectives. Capacity to manage protected areas must be strengthened at three distinct levels – individual, community and institutional. This includes (1) enhancing knowledge, skills and competencies to identify and address threats and opportunities; (2) establishing and supporting institutions with adequate resources to implement management plans and strategies; and (3) developing the enabling environment through sound legal and policy frameworks and through societal recognition of the benefits of protected areas and the value of the services they provide.

285. These layers of capacity are interdependent, and overall capacity is a function of all of them together. One way to visualize this complex structure is to see key elements such as policies, legal and institutional frameworks, personnel and financial resources and systems for planning and management as "building blocks". The "mortar" of supportive institutional cultures in turn holds these together, along with effective stakeholder participation, favorable economic conditions, and many other factors. The key to developing capacity over the long term is to build the whole structure by achieving a critical mass of these contributing elements. Focusing on just a few might be compared to laying a few strong "bricks" in a wall destined to crumble.

286. *Capacity Development* is a process of change that involves transforming individuals, institutions, and society as a whole. It can be defined only in relation to a desired outcome – that is, capacity *for what*? Developing capacity to manage protected areas effectively involves establishing objectives, identifying bottlenecks or capacity limitations that constrain the achievement of those objectives, and bringing appropriate resources to bear to overcome those constraints. The needed resources may include, but are not limited to, knowledge and skills, human, technical, and financial resources, societal support, and appropriate legal, judicial, and institutional frameworks.

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†††† UNESCO/IUCN 2001.

‡‡‡‡ This section is adapted from Carabias 2003.

287. Over the past four decades, much has been learned about how to develop capacity. In general, we can say that it is more useful to design programs that help people acquire knowledge they perceive as needed, than to prescribe what they should know. We have learned that the circumstances of different countries are distinct, and the experience of one is seldom directly relevant to another. Thus, the process of capacity development involves continual adaptation and experimentation. Modern communications allow millions of individuals, organizations and even entire societies to share ideas, information and knowledge. The urgent question is how best to make information and knowledge available, how to help managers and stakeholders sort through the mass of current information to connect with ideas and experiences that will be useful to them, and how to encourage the development of needed support so that there is a environment that encourages innovation and adaptive management.

6.2 National Capacity Assessments

288. In order to put in place adaptive and demand-driven capacity building initiatives, Parties and supporting institutions may consider developing national capacity assessments; document existing knowledge and experiences including indigenous and traditional knowledge; identifying knowledge gaps; and put in place a capacity building program at the national level. The elements of a capacity assessment may include the following:

1) Institutional Strengthening
   a) Policies
      i) National Systems of Protected Areas (NSPA)
      ii) Strategic Alliances
      iii) Intersectoral integration
      iv) National development Plans or Programmes
   b) Legal Framework
      i) Constitution, Laws, Rules, Norms
      ii) Enforcement, Judicial Process
   c) Institutional Frameworks
      i) Governance Framework
      ii) Interinstitutional coordination
      iii) Descentralization
   d) Resources
      i) Human Resources
      ii) Financial Resources

2) Planning and Management of PAs
      i) Planning instruments
      ii) Resources management and protection
      iii) Outreach programs
      iv) Public use
      v) Research
      vi) Monitoring and evaluation

3) Public participation
      i) Mechanisms for meaningful participation of stakeholders
      ii) Rights and responsibilities for participation
      iii) Values and benefits

4) Public awareness and support
      i) Identification of key target audiences
      ii) Strategies and mechanisms to change attitudes
      iii) Themes

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6.3 Options for capacity development

289. According of the types of skills and positions needed, various options are available to develop human capacity. They can range from field training courses to university degree programs. In some cases short courses may be sufficient while in other options a number a years or a full degree program can provide the necessary base for preparing protected area personnel (see box 14).

Box 14
Options for Capacity Development

Capacity	Programme Options
Maintenance, construction	On-the-job training
Mid-level (ranger)	Short courses, field training
Management	1-2 year special course or university degree
Director level	Short courses
Education, public affairs	6 months of already holding university degree
Business manager	6 months if already accountant
Ministers of various portfolios	1 week orientation
Stakeholder involvement	Exchange programs with community leaders
Scientist	Connections with universities, educational leave

290. Other venues for capacity development include national, regional and global events such as conferences and congresses. Such events provide opportunities to gain information and knowledge from formal presentations, discussion groups on subjects of mutual interest and networking with peers. The IUCN 5th World Congress on Protected Areas (September 2003) is a good example of such an event, as it will focus on global change, governance, marine protected areas, and management effectiveness, and is being preceded by national and regional preparatory events around the world. There are many other examples of local and regional conferences and meetings, which can serve as important vehicles for capacity development.

6.4 Sharing Knowledge and Experience

291. Parties would benefit from establishing mechanisms to exchange information, lessons learnt and capacity building experiences among countries. Knowledge networking is a relatively new dimension of capacity development, the aim of which is to enable managers and interested stakeholders to share experience and promote adaptive management. Examples of ongoing knowledge networks include the FAO/UNEP Latin American Network on Wildlands and Wildlife Management, and UNEP Marine Network for the Caribbean Region. A main advantage of knowledge networks is the ability to reach a very wide target audience and foster the interaction amongst peers (see box 15).

292. An additional component of capacity development should be to improve the understanding of the socioeconomic and cultural dimensions of protected areas establishment and management, and promote a constructive dialog and knowledge exchange between protected areas managers and indigenous and local communities.

Box 15
The Protected Areas Learning Network

The Protected Areas Learning Network (PALNet) will be an interactive, web-based knowledge management facility for protected area managers and stakeholders. Its purpose is to enable those with authority and responsibility for protected areas policy, planning, management, implementation, and allied fields, to share knowledge and experience in dealing with the impacts and opportunities from the various types of global change. Climate change, sea level rise, fragmentation of habitats, introduction of invasive alien species, human population dynamics, and evolving approaches to governance are among the factors that will require adaptation of strategies, policies, and practices. Field learning sites around the world will network to provide a "bottom up" source of first-hand experience to complement scientific literature. IUCN's World Commission on Protected Areas and the World Resources Institute, supported by the Global Environment Facility and other partners, will develop and administer the network, with offices in Vietnam. PALNet will be officially launched at the 5th IUCN World Congress on Protected Areas (September 2003).

6.5 Institutional Strengthening

293. Since the effectiveness of protected areas management strongly relies on efficient institutions and enabling policies and legal frameworks, capacity building efforts may be oriented towards improving the capacity of national institutions as providers of leadership, skills and competencies in protected area management. A central purpose of institutional capacity building should be to enhance the capabilities of protected areas institutions to include biodiversity conservation and sustainable use as elements of development alternatives and cross-sectoral policies such as energy, transportation, economy and trade, water and agriculture, among others. Key to this is for protected areas managers to be able to work effectively with stakeholders, the business community and a range of government departments. Finally institutional capacity building should develop the skills of protected areas institutions to establish and sustain baseline funding and innovative fundraising options to ensure appropriate standards of protected area management.

6.6 Public Awareness and Education

294. Even while there has been a growing recognition of the value and importance of protected areas as providers of environmental services and places for *in situ* biodiversity conservation, protected areas have a unique opportunity to increase public awareness and support for broader conservation and sustainable use.

295. Parties may therefore wish to consider putting in place public awareness and education campaigns for the broader community, including senior public authorities, the private sector, development institutions, and the media, among others. It might be useful to coordinate these initiatives with the CBD Communication, Education and Public Awareness (CEPA) Programme of Work.

Appendix I
Results of national reports questionnaire related to protected areas issues in Article 8 on "in-situ conservation" of the convention on biological diversity

70. What is the relative priority afforded to implementation of this Article and the associated decisions by your country?	a) High	70.3
	b) Medium	16.3
	c) Low	1.3
71. To what extent are the resources available adequate for meeting the obligations and recommendations made?	a) Good	2
	b) Adequate	17.5
	c) Limiting	56
	d) Severely limiting	13.5
72. Has your country established a system of protected areas which aims to conserve biological diversity (8a)?	a) system under development	14.2
	b) national review of protected areas coverage available	14.5
	c) national protected area systems plan in place	22.3
	d) relatively complete system in place	37
73. Are there nationally adopted guidelines for the selection, establishment and management of protected areas (8b)?	a) no	6.5
	b) no, under development	18
	c) yes	38.5
	d) yes, undergoing review and extension	26
74. Does your country regulate or manage biological resources important for the conservation of biological diversity with a view to ensuring their conservation and sustainable use (8c)?	a) no	2
	b) early stages of development	17
	c) advanced stages of development	9
	d) programme or policy in place	48
	e) reports on implementation available	12
75. Has your country undertaken measures that promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings (8d)?	a) no measures	1
	b) some measures in place	50.8
	c) potential measures under review	5.3
	d) reasonably comprehensive measures in place	31.8
76. Has your country undertaken measures that promote environmentally sound and sustainable development in areas adjacent to protected areas (8e)?	a) no measures	3
	b) some measures in place	65.8
	c) potential measures under review	9.8
	d) reasonably comprehensive measures in place	10.3
77. Has your country undertaken measures to rehabilitate and restore degraded ecosystems (8f)?	a) no measures	4
	b) some measures in place	66.5
	c) potential measures under review	10.5
	d) comprehensive measures in place	8
78. Has your country undertaken measures to promote the recovery of	a) no measures	3
	b) some measures in place	68.5

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threatened species (8f)?	c) potential measures under review	6.5
	d) comprehensive measures in place	11
79. Has your country undertaken measures to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology (8g)?	a) no measures	18.5
	b) some measures in place	32.5
	c) potential measures under review	19.5
	d) comprehensive measures in place	18.5
80. Has your country made attempts to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components (8i)?	a) no	4
	b) early stages of development	39
	c) advanced stages of development	16.5
	d) programme or policy in place	27.5
	e) reports on implementation available	2
81. Has your country developed and maintained the necessary legislation and/or other regulatory provisions for the protection of threatened species and populations (8k)?	a) no	1
	b) early stages of development	13
	c) advanced stages of development	12
	d) legislation or other measures in place	63
82. Does your country regulate or manage processes and categories of activities identified under Article 7 as having significant adverse effects on biological diversity (8l)?	a) no	5.3
	b) under review	11.8
	c) yes, to a limited extent	37.5
	d) yes, to a significant extent	33.3
If a developed country Party -		
83. Does your country cooperate in providing financial and other support for in- situ conservation particularly to developing countries (8m)?	a) no	4
	b) yes (if so, please give details below)	14
If a developing country Party or Party with economy in transition -		
84. Does your country receive financial and other support for in situ conservation (8m)?	a) no	8
	b) yes (if so, please give details below)	55
Decision II/7 Consideration of Articles 6 and 8 of the Convention		
85. Is action being taken to share information and experience on implementation of this Article with other Contracting Parties?	a) little or no action	16
	b) sharing of written materials and/or case-studies	36
	c) regional meetings	37

Appendix II
Environmental Agreements Encouraging Protection of Land and Sea Areas for Nature Conservation*

* Does not include bilateral agreements, such as those concerning transboundary protected areas.

Notes: 1 – Text encourages states either directly or in equivalent language to establish protected areas; 2 – Text establishes a defined form of protected area (specific to that convention or agreement); 3 – Encourages protection of areas but such areas not in accordance with the IUCN protected areas categories; 4 – General text simply exhorts environmental protection, often linked to protocols or other measures which require designation of protected areas; 5 – Text specifies a list of sites

Short Title	Title	Place of Adoption	Adopted	Notes
London Convention	Convention relative to the Preservation of Fauna and Flora in their Natural State	London	1933	1
Western Hemisphere Convention	Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere	Washington	1940	1
	International Convention for the Regulation of Whaling	Washington	1946	3
	International Convention for the Protection of Birds	Paris	1950	1
	European Dipbma: Resolutions of the Committee of Ministers of the Council of Europe*		1965	2
African Convention	African Convention on the Conservation of Nature and Natural Resources	Algiers	1968	1
	Man and the Biosphere Programme*		1970	2
	Statutory Framework of the World Network of Biosphere Reserves	Seville	1995	2
Ramsar Convention	Convention on Wetlands of International Importance especially as Waterfowl Habitat	Ramsar	1971	2
World Heritage Convention	Convention concerning the Protection of the World Cultural and Natural Heritage	Paris	1972	2
Barcelona Convention	Convention for the Protection of the Mediterranean Sea against Pollution	Barcelona	1976	
SPA Protocol	Protocol concerning Mediterranean Specially Protected Areas	Geneva	1982	2
SPA and Biodiversity Protocol	Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean	Barcelona	1995	2
	Convention on Conservation of Nature in the South Pacific	Apia	1976	
	The European Network of Biogenetic Reserves: Resolutions of the Committee of Ministers Council of Europe*		1976	2
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto		1978	3
Kuwait Convention	Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution		1978	4
Bern Convention	Convention on the Conservation of European Wildlife and Natural Habitats	Bern	1979	1
Wild Birds Directive	Council Directive on the conservation of wild birds (EC)	Brussels?	1979	2

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Short Title	Title	Place of Adoption	Adopted	Notes
Bonn Convention	Convention on the Conservation of Migratory Species of Wild Animals	Bonn	1979	
	Agreement on the Conservation of African-Eurasian Migratory Waterbirds	The Hague	1995	1
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources	Canberra	1980	1
	European Outline Convention on Transfrontier Co-operation between Territorial Communities or Authorities	Madrid	1980	
Abidjan Convention	Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region		1981	4
Lima Convention	Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific		1981	4
	Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the South-East Pacific	Paipa (Colombia)	1989	2
	Benelux Convention on Nature Conservation and Landscape Protection	Bruxelles	1982	
UNCLOS	United Nations Convention on the Law of the Sea	Montego Bay	1982	1
Jeddah Convention	Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment		1982	4
Cartegena Convention	Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	Cartagena de Indias (Colombia)	1983	
SPAW Protocol	Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	Kingston	1990	2
	ASEAN Declaration on Heritage Parks and Reserves	Bangkok	1984	5
Nairobi Convention	Convention for the Protection , Management and Development of the Marine and Coastal Environment of the Eastern African Region	Nairobi	1985	
	Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region	Nairobi	1985	2
	ASEAN Agreement on the Conservation of Nature and Natural Resources	Kuala Lumpur	1985	1
Noumea Convention	Convention for the Protection of Natural Resources and Environment of the South Pacific Region		1986	4
The Antarctic Treaty	The Antarctic Treaty	Washington	1959	3
	Agreed Measures for the Conservation of Antarctic Fauna and Flora	Brussels	1964	3
	Protocol to the Antarctic Treaty on Environmental Protection	Madrid	1991	3
	Convention for the Conservation of the Biodiversity and the Protection of Wilderness Areas in Central America	Managua	1992	
Convention on Biological	Convention on Biological Diversity	Rio de Janeiro	1992	1

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Short Title	Title	Place of Adoption	Adopted	Notes
Diversity				
Habitats Directive	Council Directive on the conservation of natural habitats of wild fauna and flora (EC)	Brussels	1992	2
Bucharest Convention	Convention on the Protection of the Black Sea Against Pollution		1992	4
OSPAR Convention	The Convention for the Protection of the Marine Environment of the North-East Atlantic - Oslo and Paris conventions	Paris	1992	4
Helsinki Convention	Convention on the Protection of the Marine Environment of the Baltic Sea Area	Helsinki	1992	4
	Agreement on the Preparation of a Tripartite Environmental Management Programme for Lake Victoria	Dar-es-Salaam	1994	
European Landscape Convention	European Landscape Convention (Council of Europe)	Florence	2000	1

Appendix III
Protected Areas Management Effectiveness Evaluation Methodologies

The Nature Conservancy Parks in Peril Scorecard and "Measures of Success" methodology

In 1990, The Nature Conservancy launched its Parks in Peril program with the objective of establishing minimal critical management in sixty parks in eighteen countries in Latin America and the Caribbean§§§§§. The Parks in Peril Scorecard was developed to support and monitor progress in this program. In using this approach, management effectiveness is assessed by scoring management capacity against pre-defined benchmarks on 16 key indicators of protected area functionality. The components of functionality are grouped in four areas:

- Basic protection activities. The indicators in this area are: physical infrastructure, on-site personnel, training, land tenure issues, threats analysis, and official protected areas status.
- Long-term management. The indicators are: zoning and buffer zone management, site-based long-term management plan, conservation science needs assessment, and monitoring plan development and implementation.
- Long-term financing. The indicators in this area are: NGO self-sufficiency plan, and Parks in Peril Site long-term financial plan.
- Site constituency. The indicators are: broad-based management committee/technical advisory committee, community involvement in compatible resource use, development of policy agenda at national/regional/local levels, and environmental education programmes.

Each item is assessed on a five-point scale, where 5 = Excellent (proper management of the PA is ensured) and 1 = No work has begun (PA is completely non-functional). Using this methodology allows progress over time to be assessed. The approach focuses on the evaluation of management inputs and processes, rather than conservation outcomes or threat reduction******.

Building on the Parks in Peril program and its experience in the United States and Asia, TNC developed a systematic methodology for determining measures of conservation success, which it defines as "making substantial progress towards (1) the long-term abatement of critical threats and (2) the sustained maintenance or enhancement of conservation target viability at sites identified for Conservancy Action." TNC's framework assesses three general dimensions of success; biodiversity health, threat status and abatement, and conservation capacity, each of which is determined by a set of indicators and a ranking procedure. The framework is an integral part of TNC's site-planning methodology, and is discussed in detail in their practitioner's handbook for site conservation planning, discussed above††††††.

WWF/CATIE protected areas evaluation methodology for Latin America

WWF and the Tropical Agricultural Research and Higher Education Center (CATIE) have developed an approach for evaluating and improving the management of protected areas in Latin America. This methodology has been used over a range of protected area categories in countries such as Costa Rica, Ecuador, Guatemala and Brazil, and has been used to evaluate the management effectiveness of a subsystem of protected areas in the Osa Conservation Area of southern Costa Rica. Protected areas management effectiveness may therefore be measured at three levels using this approach: Individual protected areas, systems (or subsystems) of protected

§§§§§ For detailed discussion of the Parks in Peril program and its results, see Brandon *et al*. 1998.

****** Hockings 2000.

†††††† The Nature Conservancy 2000.

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areas, and the performance of the protected area administration within its zones of influence‡‡‡‡‡‡.

Management indicators are grouped into a number of management fields (*ambitos*): Administrative; political; legal; planning; knowledge; present use (legal and illegal); management programmes; biographical characteristics; and threats. Although the methodology does not specifically identify indicators that evaluate processes, products, or design aspects of protected areas, there are incorporated in all ten ambitos that affect protected area management.

Indicators are tested against conservation objectives for a protected area, and scored on a scale of '0' (unsatisfactory) to '4' (very satisfactory). These scores are then summed for all indicators in each ambito – the total score in each ambito is then compared to an optimal score, providing a basis for assessing management effectiveness. Overall, a protected area obtains a value for its management through the sum of all the values of all the ambitos, expressed as a percentage of the optimal total. In using this system, the effectiveness of various ambitos within a protected area may be assessed, and results may be compared to other protected areas§§§§§§.

WWF/IBAMA Brazil protected areas effectiveness evaluation

WWF and the Brazilian Environment Institute (IBAMA) set out in 1998 to evaluate 86 protected areas in the country, many of which lacked the financial and human resources needed for effective management. Eight key indicators were selected to measure the implementation of protected area aims. These included: tenure of the land; boundary demarcation; existence of a management plan; presence or absence of illegal activities within the protected area; budget received in relation to budget requested; staff numbers; adequacy of equipment; and adequacy of infrastructure. A further five indicators were selected to measure vulnerability: degree of fragmentation; percentage of degraded land within the protected area; illegal exploitation of resources within the protected area; use of land in the buffer zone; and presence of development projects within the buffer zone.

These indicators were assessed through a number of questions and quantitatively scored. Judgments about the degree of implementation of a protected area and its vulnerability were subsequently made on the basis of the average score obtained for relevant questions. Results of the study indicated that 47 of 86 areas were largely unimplemented, while 37 of 86 areas were felt to be vulnerable or highly vulnerable to human activity.

The last part of the analysis involved preparing a "risk matrix", whereby 23 percent of sites were determined to be at "extremely high risk" due to high vulnerability and low implementation scores. The indicators selected for this assessment address issues of "requirements" (inputs) and management processes, with some consideration given to threats (context) and outcomes. The results of the evaluation survey directly led to the passing of a government Bill on the establishment of a National System of Protected Areas*******.

WWF/World Bank forest alliance rapid assessment and prioritization methodology

Developed by WWF's Forest for Life Campaign and the WWF/World Bank Alliance, the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology is intended to provide policy makers with a broad tool for assessing and prioritizing forested protected area systems. It is thus intended to serve as an "early-warning" to potential problems and weaknesses in protected areas, and allows for comparisons between protected areas over a

‡‡‡‡‡‡ Cifuentes *et al.* 2000.

§§§§§§ For detailed analysis of the WWF/CATIE protected area effectiveness evaluation framework, see Carey *et al*. 2000, Cifuentes *et al.* 2000 and Hockings *et al.* (2000).

******* Carey *et al*. 2000 and Hockings *et al*. 2000.

range of indicators. It does not, however, attempt to provide for detailed assessments at the site level. The assessment framework contains the following elements:

Context	Planning	Inputs	Processes	Outputs	Outcomes
Biological importance Social importance Threats Vulnerability	Legal status Management planning PA site design PA system design Macro policy issues	Staff Equipment Transport Facilities Funding	Training Supervision Data management Research and monitoring	Education & outreach programmes Fulfilment of management plan Law enforcement	PA integrity Degree and extent of degradation Community benefits

The evaluation methodology includes a two-part questionnaire. The first part focuses on overall management effectiveness issues, and covers topics such as staffing, transportation and facilities, management planning, research and monitoring, biological importance, socio-economic importance, legal status and security, and the design of both protected area sites and systems. The second part of the questionnaire addresses threats and stresses. Threats are potential or impending stresses in which a detrimental impact has not yet occurred, while stresses are external forces or events that have a detrimental impact on the integrity of the protected area. Within this framework, stresses may include both legal and illegal activities and may result from direct and indirect forces.

Analysis of part one of the questionnaire allows administrators and policy makers to a) compare overall effectiveness of each protected area; b) identify broad areas of institutional strengths and weaknesses; and c) identify trends and patterns in protected area management. Analysis of part two of the questionnaire allows for a review of the following:

- Severity of existing degradation. A measure of extent (breadth and degree) and permanence of damage caused by each stress. Each stress may then be plotted to provide a visual presentation of the overall severity of existing degradation at each protected area.
- Severity of potential degradation. A measure of extent of damage, and the permanence of damage likely to be caused by each threat. Each potential stress may then be plotted to provide a visual display of the overall severity of potential degradation at each protected area.
- Comparing threats and stresses. To compare threats across multiple protected areas, the average extent of degradation for all threats, as well as the average degree of permanence for

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these threats is determined for each site and plotted on a matrix. This provides a visual summary of the severity of threats and stresses across all protected areas.

- Existing and potential loss. This is a combination of the severity of (a) existing degradation and (b) potential degradation for each threat and stress within a protected area. Graphically, the severity of each threat and stress for a protected area may be plotted and visually compared; by summing stresses and threats, the results of a number of protected areas may be plotted and reviewed on the same graph.
- Vulnerability. This measures overall susceptibility or exposure to threats and stresses by a protected area. Vulnerability is a combination of the severity of future degradation from all threats, with the likelihood of any one threat or stress occurring or increasing. These results may also be plotted on a graph.
- Biological and social urgency. This is a measure of how important protected area security and effectiveness is in relation to its biological importance. Conservation urgency may be determined and graphically presented by combining the vulnerability with the biological importance of a protected area.

Evaluating management effectiveness using this methodology allows a series of questions to be asked by policy-makers:

- Which protected areas should receive priority?
- Which protected areas are most at risk?
- Which protected areas have strong capacity, and which are weak?
- Which protected areas warrant more detailed, in-depth assessments?
- Which protected areas represent the most strategic conservation investments?
- What are the overall strengths and weaknesses of the protected area system?

The RAPPAM methodology has been applied in a number of countries, including Bhutan, China, Russia and South Africa[†††††††].

WWF and the World Bank have also developed a simple "tracking tool" for reporting progress at protected area sites, building on both the WCPA framework and the RAPPAM methodology[†††††††]. The Tracking Tool is designed to be:

- Capable of providing a harmonized reporting system for protected area assessment within both the World Bank and WWF;
- Suitable for replication;
- Able to supply consistent data to allow tracking of progress over time;
- Relatively quick and easy to complete by protected area staff, so as not to be reliant on high levels of funding or other resources;
- Capable of providing a "score" if required;
- Easily understood by non-specialists; and
- Nested within existing reporting systems to avoid duplication of effort

[†††††††] WWF 2002. See also the case studies in WWF 2002a, WWF 2002b, WWF 2002c and WWF 2002d.
[†††††††] WWF and The World Bank 2003.

International Marine Protected Area Management Effectiveness Initiative

While a number of guides to marine protected area (MPA) planning and management deal in part with evaluating management effectiveness§§§§§§§, the most comprehensive resource on this topic is a new guidebook developed by WCPA, WWF and the United States National Oceanic and Atmospheric Administration (NOAA)********. The purpose of the guidebook is to assist managers and other conservation practitioners to evaluate and adaptively improve the effectiveness of MPA implementation and management. Building on the IUCN Framework for Assessing Management Effectiveness discussed above, this framework sets out 44 indicators covering 11 biophysical, 17 socio-economic and 16 governance performance dimensions of MPA management (See Box 16). These indicators have benefited from pilot testing in a wide range of MPAs around the world.

Box 16
MPA management effectiveness indicators

Biophysical (11)	Socio-economic (17)	Governance (16)
1. Focal species abundance 2. Focal species viability 3. Community composition & structure 4. Community viability 5. Habitat complexity & integrity 6. Food web integrity 7. Water quality 8. Return on fishing effort 9. Area restored 10. Area under reduced human use/impact 11. Area free from extraction	1. Household perceptions of the availability of local seafood 2. Local fisher perceptions of catch 3. Material style of life of households 4. Community infrastructure 5. Household occupational structure 6. Number & nature of markets 7. Availability of health services 8/9. Perceptions of non-market & non-use values of MPA 10. % of particular group in leadership positions 11. Local use patterns 12. Local attitudes & beliefs regarding the resources 13. Changes in conditions of ancestral & historical sites/ features/monuments 14. Community knowledge of	1. Existence of management plan & adoption of plan 2. Understanding of MPA rules/ regulations by the community 3. Existence of decision-making & management body with relevant mandate to make decisions 4. Existence & compatibility of legislation with needs of the MPA management plan 5. Degree of stakeholder participation in management of MPA 6. Level of satisfaction of stakeholders with participation 7. The amount & quality of training provided to resource users to participate in MPA management 8. Amount & quality of training provided to community organizations to participate in MPA management 9. Community organization formed and active 10. Available human resources & equipment for surveillance & monitoring 11. Clearly defined enforcement

§§§§§§§ See, for example, Salm and Clark 2000, and Roberts and Hawkins 2000.

******** Pomeroy *et al*. 2003.

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	natural history 15. Level of understanding of human impacts (including population) on resource 16. Distribution of scientific knowledge to the community 17. Income distribution by source by household	procedures 12. Number of patrols per time period 13. Effective education programme on compliance for stakeholders 14. Regular meeting of MPA staff with stakeholders 15. Number of people trained in sustainable resource use 16. Number of stakeholders involved in surveillance, monitoring & enforcement

Source: Pomeroy et al. 2003.

The indicators support a series of goals and objectives that have been defined for each of the three categories. For example, one of the five goals of the biophysical category is "to protect biodiversity", while one of the objectives under this goal is "to minimize threats and damage due to human activities inside and/or outside the MPA". An indicator to assess progress against this objective would be Area under reduced human use/impact.

The methodology also provides a full set of questions to be asked for each indicator with regards to such aspects as objectives assessed, difficulty of measurement, resources required to measure the indicator, how data is collected and results shared, and outputs expected from the indicator assessment. Answering these questions allows many indicators to be "scored", thereby providing for quick analysis and the eventual establishment of trend data.

For example, in assessing habitat complexity (Biophysical Indicator 5), a score of 1 indicates that the complexity of habitats within the MPA are in notable decline (reductions > than or equal to 20% in area and/or degraded quality of habitat), while a score of 5 indicates that the complexity of habitats within the MPA are improving notably (increases greater than or equal to 20% in area and/or "ideal" quality of habitat).

The Guidebook recommends that the evaluation process proceed in four steps:

(a) *Step 1.* Select the appropriate set of indicators to measure. This is primarily based on priority goals and objectives for the site under consideration, subsequently cross-referenced with the goals, objectives and indicators listed for the three categories of indicator in the methodology.

(b) *Step 2.* Plan for how to evaluate the indicators selected. This step involves: (a) assessing necessary resources needed to carry out the evaluation; and (b) developing an evaluation work plan.

(c) *Step 3*. Implement the evaluation, and collect, manage and analyze data related to the selection of indicators. (Appendix III of the report provides detailed guidelines on collecting and analyzing data for each indicator.)

(d) *Step 4.* Share and adapt to the results generated. Considered the most important part of the assessment, the two fundamental aspects to this step are: (a) sharing results with identified target audiences in an appropriate manner; and (b) encouraging the adaptation of management practices necessary to improve MPA use.

ANNEX II:
PROPOSED ELEMENTS OF A PROGRAMME OF WORK ON PROTECTED AREAS

I. Introduction

1. *In-situ* conservation of biological diversity is dependent upon properly maintaining sufficient natural habitat. Protected areas are essential components in national and global biodiversity conservation strategies. They provide a range of goods and ecological services while preserving natural and cultural resources. They can contribute to poverty alleviation by providing gainful employment opportunities and livelihoods to people living in and around them. In addition, they also provide opportunities for research including for adaptive measures to cope with climate change, environmental education, recreation and tourism. As a result many countries have developed a system of protected areas. The protected area network now covers about 12 percent of earth's land surface. Less than 1% of the earth's marine area is covered. Their central role in implementing the objectives of the Convention has been repeatedly emphasized in decisions of the Conference of Parties (COP). Protected areas form a vital element of the various thematic programmes of work viz., marine and coastal biological diversity, inland water ecosystems biological diversity, dry and sub-humid lands biological diversity, forest biological diversity and mountain biological diversity.

2. Given their many benefits, protected areas are important instruments for meeting the Convention's targets of significantly reducing the rate of biodiversity loss by 2010. However, according to the best available data on the status and trends on protected areas (see document the UNEP/CBD/SBSTTA/9/5), the current global network of protected areas is not sufficiently large, sufficiently well-planned, nor sufficiently well-managed to optimize its contribution to preventing global biodiversity loss. Therefore, there is an urgent need to take action to improve the coverage, representativeness and management of protected areas nationally, regionally and globally.

3. The Convention on Biological Diversity works with many partner organizations, conventions and initiatives in facilitating conservation and sustainable use through protected areas. These include the IUCN World Commission on Protected Areas (WCPA); the UNEP World Conservation Monitoring Centre (UNEP-WCMC); the International Maritime Organization (IMO); the World Resources Institute (WRI); The Nature Conservancy (TNC); WWF; the UNESCO Man and Biosphere Programme (MAB); the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage; the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention); the Convention on the Conservation of Migratory Species of Wild Animals and the associated agreements; the Global Environment Facility (GEF); and various regional agreements and programmes.

4. The present programme of work on protected areas features goals and activities that are specific to protected areas. Some elements of existing programmes of work on forests, inland waters, dry and sub-humid land biological diversity, coastal and marine biological diversity also apply to protected areas. The goals and activities contained in these existing programmes of work should also be applied and implemented, whenever appropriate for their respective protected areas.

II. Overall purpose and scope of the programme of work

The overall purpose of the programme of work on protected areas is to significantly reduce biological diversity loss at the international, national and sub-national levels through the implementation of the three main objectives of the Convention on Biological Diversity, and to contribute to poverty alleviation and sustainable development, thereby supporting the objectives

of the Strategic Plan of the Convention, the World Summit on Sustainable Development Plan of Implementation and the Millennium Development Goals. The ultimate result of the implementation of the programme of work is the establishment and maintenance in perpetuity of an effectively managed, ecological representative global system of protected area networks, where human activities are managed to maintain the structure and functioning of the full range of ecosystems, in order to provide benefits to both present and future generations.

The programme of work consists of three interlinked elements intended to be mutually reinforcing. It was developed bearing in mind the need to avoid unnecessary duplication with existing thematic work programmes and other ongoing initiatives of the Convention on Biological Diversity, and to promote synergy and coordination with relevant programmes of various international organizations. Parties are encouraged to apply where appropriate the objectives and activities from these thematic work programmes and the work on cross-cutting issues.

The Convention's work on protected areas should be undertaken in the context of the ecosystem approach. The ecosystem approach is the primary framework for action under the Convention, and its application will help reach a balance between the three objectives of the Convention. Multiple use protected areas applied in an ecosystem approach context can, for example, help meet specific goals relating to both conservation and sustainable use. The ecosystem approach provides a framework within which the relationship of protected areas to the wider landscape and seascape can be understood, and the goods and services flowing from protected areas can be valued. In addition, the establishment and management of protected area systems in the context of the ecosystem approach should not simply be considered in national terms, but where the relevant ecosystem extends beyond national boundaries, in ecosystem or bioregional terms as well. This presents a strong argument for transboundary and high seas protected areas.

The programme of work is intended to assist Parties in establishing national programmes of work with targeted goals, actions, specific actors, time frame, inputs and expected measurable outputs. Parties may select from, adapt, and/or add to the goals and actions suggested in the current programme of work according to particular national and local conditions and their level of development. Implementation of this programme of work should take into account the ecosystem approach of the Convention on Biological Diversity. In determining national programmes of work, Parties are encouraged to pay due regard to the social, economic and environmental costs and benefits of various options. In addition, Parties are encouraged to consider the use of appropriate technologies, source of finance and technical cooperation, and to ensure, through appropriate actions, the means to meet the particular challenges and demands of their protected areas.

Bearing in mind the three objectives of the Convention and the need to approach work on protected areas in a balanced manner that pays due attention to conservation, sustainable use, and the equitable sharing of benefits arising from the utilization of genetic resources, the Parties may wish to establish the following programme of work on protected areas:

III. Programme elements, goals and actions

PROGRAMME ELEMENT 1: Direct Actions for Planning, Selecting, Establishing and Managing Protected Area Systems and Sites

Goal 1.1 – Contributing to globally agreed goals: To expand and strengthen the overall contribution of protected area systems to (i) the goal of the Strategic Plan of the Convention and the WSSD of achieving a significant reduction in the rate of biodiversity loss by 2010; and (ii) the Millennium Development Goals (MDGs) – particularly MDG #7 on Ensuring Environmental Sustainability.

Activities of the Parties

1.1.1. By 2006, conduct national-level rapid assessments of the contributions of protected areas to the country's economy and culture, and to the achievement of the Millennium Development Goals (MDGs) at the national level. These assessments should document and analyze empirical data and concrete case studies to the extent possible, drawing upon economic valuation, natural resource accounting and other methodologies.

1.1.2. Drawing upon the results of the above assessments, develop a range of tailored communications tools and outreach programs that articulate this information to policymakers, key stakeholder groups and the general public.

1.1.3. By 2006, conduct national-level analyses of options for setting time-bound, measurable protected area targets that contribute to the above globally agreed conservation goals. Suggested national-level measures of progress toward targets include: total hectares under protected status, percent of ecoregions and major habitat types under protected status, status assessment of ecological integrity of protected areas, and numerical targets for species-at-risk.

1.1.4. By 2006 establish suitable time-bound, measurable protected area targets and begin to measure progress toward such targets, based on a periodic monitoring program.

1.1.5. Report on progress toward targets in future CBD national reports.

Supporting activities of the Executive Secretary:

1.1.6 Prepare and disseminate to Parties a technical document providing a framework for national-level, time-bound, measurable protected areas targets as referenced above.

1.1.7 Identify options for quantitative and qualitative protected areas targets and indicators that might be used at the global level that could contribute to the 2010 goal and MDGs.

1.1.8 Invite relevant international and regional organizations to offer their assistance to the Parties in conducting national-level rapid assessments.

Main partners

Parties, UNEP-WCMC, UNESCO-MAB, UNESCO-World Heritage Centre, UNDP, Ramsar Convention, IUCN-WCPA.

Other collaborators

Relevant international, regional and national organizations such as TNC, WWF, WRI, IGOs

Goal 1.2 – Planning and establishment of national systems of protected areas: To support more systematic planning processes and to build, by 2010, comprehensive and representative national systems of protected areas, drawing on recent advances in ecological as well as social sciences and economics, building on the existing systems of protected areas, and including community conserved areas.

Activities of the Parties

1.2.1. Drawing upon existing site selection methodologies, develop by 2006 a framework for assessing protected area system gaps at the national and ecoregional levels. The framework should take into account CBD Annex I and other relevant international conventions, along with such criteria as irreplaceability of target biodiversity components, minimum size and viability requirements, connectivity (including corridors), intactness, ecological processes and ecosystem services.

1.2.2. Conduct national-level reviews of existing and potential forms of conservation including innovative models of governance for protected areas, such as protected areas run by government agencies at various levels, co-managed protected areas, private protected areas and community conserved areas.

1.2.3. Using the above framework, conduct gap assessments and develop, by 2006, national plans for filling identified system gaps (including site selection for establishment of new sites, expansion of existing sites, restoration and rehabilitation of degraded and semi-natural areas, and recovery of endangered species).

1.2.4. As a matter of urgency, by 2005, conduct a feasibility study to establish or expand protected areas in any remaining large, intact or relatively unfragmented natural areas.

1.2.5. Complete by 2010 the establishment of comprehensive and representative national systems of protected areas.

1.2.6. Complementing government-managed protected areas, recognize and promote the broader set of conservation areas (e.g., areas conserved by indigenous and local communities, private reserves) through legal, policy, financial, institutional and community mechanisms.

***Supporting activities of the Executive Secretary*:**

1.2.7. Compile and disseminate through the clearing-house mechanism current relevant approaches, frameworks and tools for system planning and promote and facilitate the exchange of experiences and lessons learned in applying and adapting them in different ecological and social settings.

Main partners

Parties, UNEP-WCMC, UNESCO-MAB, UNESCO-World Heritage Centre, UNDP, Ramsar Convention, IUCN-WCPA.

Other collaborators

Relevant international, regional and national organizations such as TNC, WWF, WRI, BirdLife International, Conservation International, IGOs

Goal 1.3 – Integrating protected areas into broader landscapes and sectors: To integrate sites and national systems of protected areas into relevant sectors and broader landscapes, taking into account the ecosystem approach and the concept of ecological networks.

***Activities of the Parties*:**

1.3.1. Evaluate by 2006 national and sub-national lessons learned on specific efforts to integrate protected areas and biodiversity into broader landscapes and sectoral plans, and identify and implement practical steps for improving such integration, including policy, legal, planning and other measures.

1.3.2. Use social and economic benefits generated by protected areas to alleviate poverty, consistent with protected area management objectives.

1.3.3. Engage relevant stakeholders in participatory planning and governance, recalling the principles of the ecosystem approach.

***Supporting activities of the Executive Secretary*:**

1.3.4. Organize an international workshop on integration of biodiversity and protected areas into relevant sectoral and spatial plans, and disseminate results to all Parties and relevant partners and collaborators.

1.3.5. Prepare an updated format for the second thematic reports on protected areas, covering, *inter alia*, integration of protected areas and national systems of protected areas into relevant sectors and spatial planning.

Main partners

Parties, UNESCO-MAB, IUCN-WCPA, Ramsar and other environmental conventions

Other collaborators

Relevant international, regional and national organizations and IGOs

Goal 1.4 – Transboundary Protected Areas (TBPAs): To strengthen existing and establish new TBPAs to enhance conservation of biological diversity, implement the ecosystem approach, and improve international cooperation.

Activities of the Parties

1.4.1 Enter into dialogue to establish, where appropriate, new TBPAs with adjacent Parties and countries, bearing in mind the ecosystem approach and the importance of ecological networks.

1.4.2 Collaborate with adjacent Parties and countries to strengthen effective collaborative management of existing TBPAs.

1.4.3 Harmonize relevant national legislation with a view to facilitating the establishment and management of TBPAs.

1.4.4 Develop mechanisms for equitable sharing of the costs and benefits arising from the establishment and management of TBPAs.

1.4.5 Within the context of TBPAs, provide appropriate mechanism to prevent the spread of invasive alien species.

Supporting activities of the Executive Secretary:

1.4.6 Organize a liaison group meeting, including *inter alia* the Ramsar Bureau, World Heritage Centre and UNESCO MAB, Ramsar and CMS Conventions, UNEP-WCMC, IUCN-WCPA, local and indigenous communities, NGOs, private sector companies and funding agencies for developing guidelines for establishing transboundary protected areas and collaborative management approaches for dissemination to Parties, taking into account the existing IUCN-WCPA Guidelines on TBPAs.

1.4.7 Prepare, for the 8th meeting of the Conference of the Parties, a comprehensive inventory of existing adjacent protected areas on either side of international borders, and other Transfrontier land areas suitable for the establishment of TBPAs, with particular attention to such areas lying within biodiversity hotspots.

Main partners

Parties, UNESCO-MAB, World Heritage Centre, IUCN-WCPA, Ramsar, CMS, CITES and other environmental conventions.

Other collaborators

Relevant international, regional and national organizations and IGOs.

Goal 1.5 – International Systems of Protected Areas: To strengthen international systems of protected areas in order to enhance conservation of biological diversity, implement the ecosystem approach, and improve international cooperation.

Activities of the Parties

1.5.1 Collaborate with other Parties and relevant partners to establish effective international systems of protected areas, particularly around shared ecological resources identified as conservation priorities (e.g. barrier coral reef systems, large-scale river basins, mountain systems), and establish multi-country coordination mechanisms as appropriate to support the establishment and effective long-term management of such systems.

1.5.2 Increase support for and participation in existing international systems of protected areas, including the Ramsar Convention on Wetlands, the World Heritage Convention and the UNESCO MAB Programme;

1.5.3 Incorporate reporting on national components of international protected area systems in national protected area reports to the CBD;

1.5.4 Explore establishment of a harmonized system for reporting on sites designated under the Convention on Wetlands, the World Heritage Convention and UNESCO MAB Programme, taking into account the reporting mechanism currently being developed by UNEP-WCMC;

Supporting Activities of the Executive Secretary

1.5.5 Compile and disseminate information on international systems of protected areas, including, as far as possible, their geographical distribution, their historical background, their role and the partners involved.

Main partners

Parties, UNESCO-MAB, World Heritage Centre, IUCN-WCPA, Ramsar, CMS, CITES and other environmental conventions.

Other collaborators

Relevant international, regional and national organizations and IGOs.

Goal 1.6 – Site-based protected area planning: To support systematic, highly participatory and science-based site planning processes that lead to clear biodiversity objectives, targets, management strategies and monitoring programs, drawing upon existing methodologies.

***Activities of the Parties*:**

1.6.1. Create a highly participatory process – involving all major relevant stakeholders – as part of site-based planning, and use relevant ecological and socioeconomic data required to develop effective planning processes.

1.6.2. Identify measurable conservation targets for sites, such as genomes, species, natural communities, ecosystems, and ecological processes, drawing on criteria laid out in CBD Annex I and other relevant criteria.

1.6.3. Identify and rank the relative importance of major threats to defined conservation targets (including both proximate stresses and underlying sources), and identify strategies to address critical threats.

1.6.4. Include in the site planning process an analysis of opportunities for the protected area to contribute to conservation and sustainable use of biodiversity at local and regional scales.

1.6.5. Develop or update strategic management plans for protected areas, built on the above process, to better achieve conservation objectives.

1.6.6. In developing site management plans, consider dynamic processes such as invasion by alien species, diseases, succession and climate change, and develop strategies that contribute to the resilience of sites to these processes.

1.6.7. Utilize as appropriate the full range of governance systems as well as traditional knowledge and practices of indigenous peoples and local communities.

1.6.8. Promote the fair and equitable sharing of benefits generated by the protected area to relevant stakeholders, consistent with site management objectives.

***Supporting activities of the Executive Secretary*:**

1.6.9. Compile and disseminate through the clearing house mechanism current relevant approaches, frameworks and tools for site planning and promote and facilitate the exchange of experiences and lessons learned in applying and adapting them in different ecological and social settings.

1.6.10. Assist Parties, multilateral agencies, NGOs and other relevant actors to utilize such tools in their relevant site-based work.

Main partners

Parties, IUCN-WCPA, UNEP-WCMC, UNESCO-MAB, UNESCO-World Heritage Centre, Ramsar and other international conventions.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, and other IGOs

Goal 1.7 – Prevent and mitigate the negative impacts of key threats: To prevent and mitigate the negative impacts of key threats to protected areas, in accordance with national legislation and, where appropriate, employ suitable and rigorous impact assessments.

Activities of the Parties

1.7.1. Apply environmental impact assessments to any project with the potential to have negative effects on protected areas, taking into account Decision VI/7 of the COP on Guidelines for Incorporating Biodiversity-Related Issues into Environmental Impact Assessment Legislation and/or Processes and in Strategic Environmental Assessments.

1.7.2. Undertake timely Strategic and Environmental Impact Assessments to ensure that the necessary data will be available to support decision-making processes in order to prevent negative impacts on protected areas and/or to develop, if appropriate, effective mitigation measures.

1.7.3. Develop liability regimes that incorporate the polluter pays principle or other appropriate mechanisms in relation to damages to protected areas, at national and international levels.

1.7.4. Prevent and mitigate the negative impacts of economic development and enhance positive impacts of such development on protected areas.

***Supporting activities of the Executive Secretary*:**

1.7.5. Address issues specific to protected areas, in the guidelines for incorporating biodiversity considerations in environmental impact assessment and strategic environmental assessment, procedures and regulations.

1.7.6. Disseminate the best practices and lessons learnt for efficient management of protected areas through clearing house mechanism.

1.7.7. Collaboration with the International Association for Impact Assessment and other relevant organizations on further development and refinement of the impact assessment guidelines particularly to incorporate all stages of environmental impact assessment processes in protected areas taking into account the ecosystem approach.

Main partners

Parties, UNESCO-MAB, World Heritage Centre, scientific bodies of UNFCC, CCD and Ramsar Conventions, IUCN-WCPA, the International Association for Impact Assessment.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, and other IGOs.

Goal 1.8 – Prevent the introduction of invasive alien species and mitigate their negative impacts: To prevent the introduction of invasive alien species that potentially threaten the biodiversity of protected areas, and to control and, where possible, eradicate established invasive species in protected areas.

Activities of the Parties

1.8.1. Provide the Executive Secretary, as appropriate, with examples of the impacts of invasive alien species and of programmes used to control their introduction and mitigate negative consequences on protected areas.

1.8.2. Raise awareness about the possible problems and cost associated with the deliberate or accidental introduction of alien species in protected areas.

1.8.3. Identify and develop strategies to prevent the introduction the introduction and/or mitigate the impacts of invasive alien species that may threaten biodiversity in protected areas, making use of the guidance available from the Global Invasive Species Programme (GISP).

1.8.4. In collaboration with GISP, promote implementation of projects assessing the impacts of invasive alien species in protected areas.

Supporting activities of the Executive Secretary:

1.8.5. Gather and disseminate, in collaboration with GISP, impacts of invasive alien species in protected areas.

1.8.6. Compile and disseminate through clearing house mechanism the case studies on best practices and lessons learnt in mitigating the adverse impacts of invasive alien species and facilitate the exchange of experiences.

Main partners

Parties, GISP, International Council of Scientific Union, Ramsar, CMS, and other environmental conventions.

Other collaborators

Relevant international, regional and national organizations, UNEP-WCMC, FAO, TRAFFIC, WWF, TNC, BirdLife International, and other IGOs

PROGRAMME ELEMENT 2: Enabling Activities

Goal 2.1 – Policy, Institutional and Socio-Economic Reforms: To identify and implement policy reforms, including use of social and economic valuation and incentives, to provide a

supportive enabling environment for more effective establishment and management of protected areas and protected areas systems.

Activities of the Parties

2.1.1. Integrate the use of economic valuation and natural resource accounting tools into national planning processes in order to identify the hidden and non-hidden economic benefits provided by protected areas and who appropriates these benefits.

2.1.2. Identify and remove perverse incentives and inconsistencies in sectoral policies that increase pressure on protected areas, or take action to mitigate their perverse effects.

2.1.3. Identify and establish positive incentives that support the integrity and maintenance of protected areas and the involvement of communities and other stakeholders in conservation.

2.1.4. Assess the economic and socio-cultural costs and impacts arising from the establishment and maintenance of protected areas, particularly for indigenous and local communities, and adjust policies to ensure that such costs and impacts – including the costs of livelihood opportunities foregone – are equitably compensated.

2.1.5. Establish policies and institutional mechanisms to facilitate the legal recognition and effective management of indigenous protected areas and community conserved areas in a manner consistent with the goals of conserving both biodiversity and the knowledge, innovations and practices of indigenous and local communities.

2.1.6. Develop national incentive mechanisms and institutions to support the establishment of biodiversity conservation areas on private lands, including private reserves and conservation easements, which achieve biodiversity conservation goals in the managed landscape surrounding formal protected areas.

2.1.7. Identify and foster economic opportunities and the creation of markets for goods and services produced by protected areas and/or reliant on the ecosystem services that protected areas provide, consistent with protected area objectives.

2.1.8. Establish adequate national policies to deal with access to genetic resources within protected areas and benefits arising from their utilization, drawing on the CBD Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization.

2.1.9. With respect to transboundary protected areas (TBPAs), identify the main legal and institutional constraints on establishment of TBPAs, take steps to overcome them, and establish strategies within existing TBPAs to strengthen enforcement through collaboration between relevant authorities.

Supporting activities of the Executive Secretary:

2.1.10. In collaboration with key partners such as OECD, IUCN, WWF and the secretariats of other conventions compile information on relevant guidance, resource kits and other information on incentive measures including those relating to the development of incentive options through tenure rights, markets, pricing policies, etc.

2.1.11. Compile and disseminate case studies on best practices on the use of incentive measures for the management of protected areas.

2.1.12. Identify ways and means to integrate the use of incentive measures into protected area management plans, programmes and policies including opportunities for the removal or mitigation of perverse incentives.

Main partners

Parties, IUCN-WCPA, UNESCO-MAB, World Heritage Centre, scientific bodies of CCD and Ramsar Conventions.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, World Bank and other IGOs.

Goal 2.2 – Capacity Building: To enhance and strengthen capacity to manage protected areas at local, national and international levels, ensuring that capacity-building initiatives are comprehensive, develop knowledge and skills, and raise professional standards at individual, community and institutional levels, with particular emphasis on social equity.

Activities of the Parties

2.2.1. Compile and/or develop by 2006 national protected area capacity assessments and incorporate the resulting information into National Reports to the CBD.

2.2.2. Establish effective mechanisms to document existing knowledge and experiences on protected area management, including indigenous/traditional knowledge and identify knowledge and skills gaps.

2.2.3. Establish and implement a capacity-building programme at the national level that is demand driven and adaptive to changes and innovation and report progress to the CBD.

2.2.4. Establish mechanisms to exchange lessons learnt, information and capacity-building experiences among countries, in collaboration with relevant organizations.

2.2.5. Review and assess the capacity of national institutions with respect to providing leadership, skills and competencies in protected area management.

2.2.6. Enhance the capacity of institutions, including those outside the conservation sector (e.g. sectoral agencies and local governments) to take biodiversity conservation and sustainable use into account in legislation and sectoral policies.

2.2.7. Create and/or strengthen the capacities of institutions to establish cross-sectoral collaboration for protected area management at the regional, national and local levels, and to establish harmonized and enabling policy and legal frameworks.

2.2.8. Create and/or strengthen the capacities of institutions to establish and sustain baseline funding at levels adequate to ensure appropriate standards of protected area management.

2.2.9. Create and/or develop the capacity of protected areas institutions for creative fundraising through fiscal incentives, environmental services, and other instruments.

2.2.10. Call on the GEF and other donor agencies to support developing countries and countries with economies in transition to put in place their capacity-building initiatives on protected area management

Supporting activities of the Executive Secretary:

2.2.11. Compile available information, including national reports, review past studies, and identify capacity needs.

2.2.12. Cooperate with and support the Protected Areas Learning Network (PALNet), an interactive website where protected area managers and associated people can exchange experience and explore lessons learned from those experiences, in collaboration with relevant organizations.

Main partners

Parties, IUCN-WCPA, UNESCO-MAB, World Heritage Centre, scientific bodies of CCD and Ramsar Conventions.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, World Bank and other IGOs.

Goal 2.3 – Financial sustainability: To ensure the financial sustainability of national and international systems of protected areas.

Activities of the Parties

2.3.1 Conduct a national-level study by 2005 of financial needs and options related to the national system of protected areas.

2.3.2. Based on the results of this study, establish country-level Sustainable Financing Plans (SFPs) that support national systems of protected areas, and begin to implement these by 2006, including necessary regulatory, legislative, institutional and other measures. To help develop SFPs, draw on the expertise and resources of UN agencies, multilateral and bilateral aid agencies and NGOs.

2.3.3. Collaborate with other countries to develop and implement sustainable financing programs for international systems of protected areas.

2.3.4. Provide information on national protected areas financing in future national reports to the CBD, and help to strengthen the role of the CBD Secretariat in collecting and sharing information about protected areas financing, in collaboration with other relevant mechanisms such as the World Database on Protected Areas.

Supporting activities of the Executive Secretary:

2.3.5. Seek information from parties about the financing of protected areas and requirements for implementation of the programme of work.

2.3.6. Convene a meeting of the donor agencies for facilitating funding to parties for implementation of the programme of work.

2.3.7. Compile and disseminate case studies and best practices concerning protected area financing through the clearing house mechanism.

Main partners

Parties, GEF, World Bank, Conservation Finance Alliance, and other donors.

Other collaborators

Relevant international, regional and national organizations, IUCN, WWF, TNC, BirdLife International, other IGOs.

Goal 2.4 – Education and Communication: To increase public awareness and understanding of the importance and benefits of protected areas, and support for their effective management.

***Activities of the Parties*:**

2.4.1. Establish or strengthen education and public awareness programs on the importance of protected areas in terms of their role in national conservation and socio-economic development, in close collaboration with the CBD Communication, Education and Public Awareness initiative (CEPA).

2.4.2. Identify core themes for education, awareness and communication programmes relevant to Protected Areas to achieve specific end results such as compliance by resource users and other stakeholders or an increased understanding of science-based knowledge by local and indigenous communities and policymakers.

2.4.3. Strengthen, and where necessary, establish information mechanisms directed at target groups such as the private sector, policymakers, development institutions, community-based organizations, the media, and the general public.

2.4.4. Develop mechanisms for constructive dialogue and knowledge exchange among protected area managers, and between protected area managers and indigenous and local communities and their organizations.

2.4.5. Incorporate Protected Areas as an integral component of the school curricula at both national and regional levels.

Supporting activities of the Executive Secretary

2.4.6. Develop copyright-free educational tools and materials for adaptation and use in the promotion of protected areas as an important means of achieving the conservation and sustainable use of biodiversity.

2.4.7. Develop guidelines for evaluating communication, education and public awareness practices as part of protected area establishment and management;

2.4.8. Generate an annotated bibliography and case studies to demonstrate the range of effective options available for designing and implementing awareness and communication programmes and activities for Protected Areas.

2.4.9. Establish, in collaboration with IUCN-WCPA and other relevant partners, an initiative to engage the global news and entertainment industry (television, film, popular music, internet, etc.) in a global campaign to raise awareness of the costs of biological diversity loss and the important role of protected areas in reversing that loss.

Main partners

IUCN-WCPA, UNESCO-MAB, World Heritage Centre, and Ramsar CIPA Working Group

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, multinational mass media corporations.

Goal 2.5 – Stakeholder Involvement: To enhance the fair and effective involvement of stakeholders in all phases and levels of work related to protected areas.

Activities of the Parties

2.5.1. Carry out national reviews of the status, needs and context-specific mechanisms for involving stakeholders in protected areas policy and management, at the level of national policy, protected area systems and individual sites.

2.5.2. 2.6.2 On the basis of the national reviews, develop specific plans and initiatives to involve stakeholders in all levels of protected areas establishment and management, including community conserved areas.

2.5.3. Support participatory assessment exercises among stakeholders to identify and harness the wealth of knowledge, skills, resources and institutions of importance for conservation that are available in society.

2.5.4. Establish and/or strengthen transparent and accountable mechanisms to ensure the fair and equitable sharing of both costs and benefits arising from the establishment and management of protected areas.

2.5.5. Promote and support stakeholder organizing and capacity building for the establishment and management of protected areas.

2.5.6. Ensure an enabling environment (legislation, policies, capacities, and resources) for the involvement of local and indigenous stakeholders in decision making, and the development of their capacities and opportunities to establish and manage community-conserved and private protected areas.

Supporting activities of the Executive Secretary:

2.5.7. In collaboration with the key partners and based upon the best practices develop and make available guidance for parties on how to promote and enhance stakeholder participation in all aspects of protected areas.

2.5.8. Make available to Parties case studies, advice on best practices and other sources of information on stakeholder participation in protected areas

2.5.9. Promote the international sharing of experience on effective mechanisms for stakeholder involvement in conservation in particular with regard to co-managed protected areas, community conserved areas and private protected areas.

Main partners

IUCN-WCPA, UNESCO-MAB, World Heritage Centre, Ramsar, CCD, and other environmental conventions, the World Bank, UNDP.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, other NGOs and interested parties.

PROGRAMME ELEMENT 3: Standards, assessment, monitoring and technology development

Goal 3.1 – Minimum Standards and Best Practices for Protected Areas: To develop and adopt voluntary minimum standards and best practices for planning, selecting, establishing, managing and governance of protected area sites and systems.

Activities of the Parties:

3.1.1. Institute, within the framework of the Convention, a process for the development of voluntary protected areas standards and best practices. In developing this framework, Parties may wish to recall the Guideline Series on Protected Area Management produced by the IUCN.

3.1.2. Develop an efficient, long-term monitoring system based on a set of indicators measuring: status of conservation targets, ecological integrity, threat abatement, and capacity for effective management.

3.1.3. Draw upon monitoring results to employ adaptive management according to the ecosystem approach.

Supporting Activities of the Executive Secretary:

3.1.4. In collaboration with the key partners and based upon the best practices develop and make available guidance for parties minimum standards for planning, selecting, establishing, managing and governance of protected area sites and systems.

3.1.5. Compile information on best practices and case studies on effective management of protected areas and disseminate it through clearing-house mechanism and facilitate exchange of information.

Main partners

IUCN-WCPA, UNEP-WCMC, UNESCO-MAB, World Heritage Centre, Ramsar and other environmental conventions.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, other NGOs and interested Parties.

Goal 3.2 – Evaluating Protected Areas Management Effectiveness: To adopt and implement a framework for monitoring, evaluating and reporting protected areas management effectiveness at sites, national system, and transboundary protected area levels.

***Activities of the Parties*:**

3.2.1. Develop standards and best practice guidelines for evaluating the effectiveness of protected area management and governance, and set up a related database, taking into account the IUCN-WCPA framework for evaluating management effectiveness, and other relevant methodologies.

3.2.2. Select by 2004 appropriate methods, criteria and indicators for evaluating protected areas management effectiveness.

3.2.3. Implement management effectiveness evaluations of at least 30 percent of each Party's protected areas by 2010.

3.2.4. Include information resulting from evaluation of protected areas management effectiveness in National Reports to the CBD.

3.2.5. Focus management effectiveness efforts on site and system planning, governance, participatory process, financing, access to genetic resources, and benefit sharing processes.

Supporting Activities of the Executive Secretary:

3.2.6. Compile and disseminate information on initiatives and develop a database of experts in evaluation of protected area management effectiveness.

3.2.7. Compile information on approaches to protected area design, establishment and management that have high probability of being the most effective in conserving biodiversity**.**

Main partners

IUCN-WCPA, UNEP-WCMC, UNESCO-MAB, World Heritage Centre, Ramsar and other environmental conventions.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC BirdLife International, other NGOs and interested parties.

Goal 3.3 – Assessing and Monitoring Protected Area Status and Trends: To undertake regular assessment of national PA statistics, which will enable monitoring of PA status and trends at national, regional and global scales, and assist in evaluating progress in meeting global biodiversity targets.

Activities of the Parties

3.3.1. Submit regular updates of national PA statistics for inclusion in the World Database on PAs maintained by UNEP-WCMC.

3.3.2. Participate in the periodic United Nations List of Protected Areas and the *State of the World's Protected Areas* assessment process.

3.3.3. Encourage establishment of GIS units as a tool for monitoring protected areas and supporting decision-making processes.

3.3.4. Invite multilateral, bilateral and private donor agencies and institutions to support the World Database on Protected Areas in its function as a key support mechanism in the assessment and monitoring of protected area status and trends, taking into account COP VI Decision 7 (C) 4.

Supporting Activities of the Executive Secretary:

3.3.5 Develop and strengthen working partnerships with appropriate organizations and institutions that have developed and maintained databases on protected areas, in particular with the UNEP-WCMC and the IUCN World Commission on Protected Areas.

Goal 3.4 – Biodiversity Status in Protected Areas: To develop an improved understanding of the biodiversity found in protected areas and the values, goods, and services they provide.

Activities of the Parties

3.4.1. Improve research, scientific and technical cooperation related to protected areas.

3.4.2. Promote interdisciplinary, applied research, bringing together ecological, social, and economic sciences.

3.4.3. Conduct collaborative research programs in transboundary protected areas to enhance effective management.

3.4.4. In line with the Global Taxonomy Initiative, encourage studies to improve the knowledge of the distribution, status and trends of biological diversity in protected areas.

Supporting activities of the Executive Secretary:

3.4.5. Develop and strengthen working partnerships with appropriate organizations and institutions which undertake research studies leading to an improved understanding of biodiversity in protected areas.

3.4.6. Further develop methods and techniques for evaluation of goods and services of biodiversity of protected areas.

Main partners

IUCN-WCPA, UNEP-WCMC, UNESCO-MAB, World Heritage Centre, WRI, Millennium Ecosystem Assessment.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, other NGOs, Global Biodiversity Information Facility, and interested parties.

Goal 3.5 – Development, Application and Transfer of Appropriate Technologies for Protected Areas: To improve the development, validation, and transfer of appropriate technology and innovative approaches for the effective management of protected areas, taking into account COP decisions on technology transfer and cooperation.

Activities of the Parties:

3.5.1. Carry out documentation of appropriate technologies for conservation and sustainable use of biological diversity of protected areas and management of protected areas.

3.5.2. Undertake an assessment of needs for relevant technologies for protected area management involving all stakeholders such as the local and indigenous communities, research institutions, non-governmental organizations and the private sector.

3.5.3. Make available to the Executive Secretary information concerning appropriate technologies and effective approaches for the management of protected areas.

3.5.4. Encourage development and use of appropriate technology for habitat restoration, resource mapping, biological inventory, and rapid assessment of biodiversity, monitoring, *in-situ* and *ex-situ* conservation, sustainable use etc.

3.5.5. Create enabling environment for transfer of technology through legal frameworks and strengthening law enforcement.

Supporting activities of the Executive Secretary:

3.5.6. Compile information provided by Parties and relevant international organizations on appropriate technologies and approaches for efficient management of protected areas and conservation and sustainable use of biological diversity of protected areas.

3.5.7. Disseminate this information through the clearing house mechanism and facilitate exchange of information.

Main partners

IUCN-WCPA, UNEP-WCMC, UNESCO-MAB, World Heritage Centre, WRI, Millennium Ecosystem Assessment.

Other collaborators

Relevant international, regional and national organizations, WWF, TNC, BirdLife International, other NGOs, Global Biodiversity Information Facility, and interested parties

RECOMMENDATIONS

The Ad Hoc Technical Expert Group on Protected Areas,

Having met in Tjarno Sweden from 10 to 14 June, 2003 and produced a report and elements for a Protected Areas Programme of Work, recommends that the Parties to the Convention on Biological Diversity take the following decisions in order to facilitate implementation of the Programme of Work:

1. *Establish*, within the framework and institutions of the Convention, mechanisms to assist in implementing the Protected Areas Programme of Work. To this end, the Parties may wish to convene a second meeting of the Ad Hoc Technical Expert Group (AHTEG) on Protected Areas, and/or establish an Open Ended Working Group on Protected Areas, to meet at least once before the eighth meeting of the Conference of the Parties in order to address outstanding issues, assess progress in implementing the programme of work, and report to the eighth meeting of the COP.

2. *Request* the Ad Hoc Technical Expert Group on Protected Areas and/or Working Group to *inter alia* develop the "voluntary protected areas standards and best practice guidelines" discussed above, drawing on the input of Parties and other governments, the work of relevant United Nations organizations and conventions, the work of the World Commission on Protected Areas, the outcomes and recommendations of the Fifth IUCN World Congress on Protected Areas, and the work of relevant non-governmental and indigenous organizations.

3. *Call* on Parties to take account of the results and recommendations of the 5th IUCN World Congress on Protected Areas (September 2003, Durban, South Africa) in their future actions on protected areas.

4. *Call* on Parties to take note of and make use of the IUCN Protected Area Categories policy and planning framework.

5. *Call* upon the Global Environment Facility (GEF) to undertake the following actions:

(a) Analyze the potential role of the GEF in supporting the 2010 Goal, particularly through protected area approaches;

(b) Assess the need for a new, dedicated funding window – focused at the protected areas *systems* level – to support a second phase of national biodiversity strategies and action plans (NBSAP) development, including support for the activities outlined in the Protected Areas Programme of Work.

(c) Analyze in-depth options for how GEF resources, for the current and future replenishment periods, could have greater conservation impact on protected areas, covering, for example, leveraging greater volumes of public and private resources, supporting community conserved areas and private reserves, catalyzing financial sustainability for protected area systems, experimenting with new public/private co-management partnerships for conservation on both public and private land, and encouraging relevant policy and institutional reforms.

6. Invite multilateral, bilateral and private donor agencies and institutions to establish a "2010 Target Funding Programme" to support achievement of the 2010 Target outlined above in developing countries and countries with economies in transition.

7. Invite relevant UN organizations, international financial institutions, governments, donor agencies and NGOs to recognize that strengthening and maintaining representative systems of protected areas and the ecosystem services they provide are essential strategy for achieving the Millennium Development Goals (MDGs).

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LIST OF ACRONYMS AND ABBREVIATIONS

AHTEG -	Ad Hoc Technical Expert Group
CATIE -	Tropical Agricultural Research and Higher Education Center (Centro Agronómico Tropical de Investigación y Enseñanza)
CBD -	Convention on Biological Diversity
CCAs -	Community-conserved areas
CI -	Conservation International
ERP -	Ecoregional Planning
GEF -	Global Environment Facility
GTZ -	German Corporation for International Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit)
IBA -	Important Bird Area
ICDP -	Integrated Conservation and Development Project
MAB -	UNESCO Man and the Biosphere Programme
MDGs -	Millennium Development Goals
MPA -	Marine Protected Area
PNM -	Parcs Nationaux de Madagascar
RAPPAM -	Rapid Assessment and Prioritization of Protected Area Management
SBSTTA -	Subsidiary Body on Scientific Technical and Technological Advice
TBPAs -	Transboundary Protected Areas
TNC -	The Nature Conservancy
UNEP –	United Nations Environment Programme
UNEP-WCMC -	World Conservation Monitoring Centre
UNF -	United Nations Foundation
WCPA -	World Commission on Protected Areas
WDPA -	World Database on Protected Areas
WEOG -	Western European and others group
WPC -	World Parks Congress
WRI -	World Resources Institute
WSSD -	World Summit on Sustainable Development
WWF -	World Wide Fund for Nature