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PROTECTED AREAS

Addendum

Review of methods and approaches for the planning, establishment and management of protected areas and protected-area networks

Note by the Executive Secretary

EXECUTIVE SUMMARY

Through its decision VI/30, the Conference of the Parties requested that preparation for the priority themes for the seventh meeting of the Conference of the Parties, including protected areas, should follow the proposal prepared by the Executive Secretary (UNEP/CBD/COP/6/2). In accordance with this proposal, an Ad Hoc Technical Expert Group was used to, *inter alia*, review methods and approaches of protected area planning and management.

Based on the work of the Expert Group, the Executive Secretary has prepared, for consideration by the ninth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), the present review document, which concludes that, *inter alia*:

(a) It is important to use the ecosystem and bioregional approaches in work on protected areas under the Convention;

(b) Strategies should start by identifying potential goals and objectives for areas to be protected. Opportunities for establishing and managing protected areas are limited. Priorities need to be set in a systematic, scientifically valid and transparent manner. Social and political dimensions often override scientific criteria, particularly in developing countries. Guidelines and methodologies for prioritizing sites have been published and are used in many countries. The process by which a plan is prepared is as important as the ultimate content of the plan itself;

* UNEP/CBD/SBSTTA/9/1.

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(c) Most countries already have methodologies for protected area site planning written into relevant legislation and regulations. New site-planning methodologies may have advantages but they need to integrate—not supplant—existing ones if they are to avoid conflict with established practice. Size and connectivity are critical factors in establishing a protected area. Site planning can also be influenced by the role that a given protected area will play;

(d) The IUCN categorization system for management approaches for protected areas serves a critical role in regional and global analyses and is widely accepted. The system nevertheless has a number of shortcomings relating to both its applicability on the ground, and its accuracy;

(e) Sites legally designated and managed by national Governments form the core of the world's protected-areas system. Other forms of protection include private reserves, voluntary protection schemes, and many traditional practices of indigenous and local communities;

(f) The key tasks to be carried out by managers, subsequent to the approval of a protected area plan, have been identified. Adaptive management is critical. Management should respond to experiences gained, which requires good monitoring and evaluation with feedback systems resulting in appropriate management adjustments;

(g) Transboundary protected areas have significant value in promoting cooperation between nations and by improving conservation directly. The focus of conservation, including the work of the Convention, is moving towards landscape-scale, watershed or ecosystem based approaches. This will inevitably lead to more interest in, and need for, transboundary protected area systems;

(h) Although useful evaluation methodologies exist, comprehensive studies of the effectiveness of protected areas are generally lacking or have a narrow focus. The Ad Hoc Technical Expert Group on Marine Protected Areas established by the Conference of the Parties has produced guidance on evaluating the effectiveness of marine protected areas;

(i) Stakeholder participation is essential for the establishment and effective management of protected areas. Undertaking stakeholder analysis during the planning stage is essential, as is maintaining the analysis as part of the adaptive management process. Examples of good practice are information sharing, participatory assessment, benefit sharing, building capacity for local stakeholder participation and active involvement in decision making. Community-led conservation initiatives are among the most effective approaches;

(j) Protected area managers and supporting institutions, including local communities, need sufficient knowledge, capabilities, and resources to plan, manage, monitor, and protect areas. Capacity in these areas requires strengthening. Managing protected areas adaptively is an enormous challenge;

(k) There is a large short-fall in funding for protected areas. Costs should be viewed relative to benefits, which can be considerable. Ensuring that the burdens of protected area establishment are not disproportionately borne by local communities, including any negative impacts upon local livelihoods, implies that compensatory mechanisms are often required. Continued support for protected areas from the Global Environment Facility and other multilateral and bilateral donors is crucial for developing countries since the governments themselves generally allocate insufficient financial resources. Issues of sustainability of the current financial system need to be addressed. A shift from the current project-based interventions to a more long-term programmatic approach should be encouraged.

SUGGESTED RECOMMENDATIONS

The suggested recommendations on this issue are contained in the main note on protected areas (UNEP/CBD/SBSTTA/9/6).

CONTENTS

I. INTRODUCTION

1. The present note summarizes the results of the review work carried out by the Ad Hoc Technical Expert Group on Protected Areas, with a specific focus on identifying/describing good management practices. Section II on framework for action identifies ecosystem and bioregional approaches to protected-areas management and sustainable use. Section III emphasizes the importance of using the ecosystem approach in the Convention work on protected areas. It also reviews methods and approaches for the planning, establishment and management of protected area sites and networks, first at the national and international levels with a specific reference to transboundary protected areas, and secondly at the site level. Section IV reviews some key cross-cutting issues relating to the planning, establishment and management of protected areas, including: (i) the importance of, and ways for, evaluating the effectiveness of protected areas; (ii) mechanisms for enhancing stakeholder participation; (iii) the importance of capacity building; (iv) the different types of governance depending on the purpose of protected areas and the role of their stakeholders; (v) financial considerations..

II. FRAMEWORK FOR ACTION

A. Ecosystem approach

2. The Conference of the Parties adopted the ecosystem approach as the primary framework for action under the Convention. The Convention's work on protected areas should be undertaken in the context of this approach. 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. Multiple-use protected areas within an ecosystem approach can 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 delivered by protected areas can be valued. In addition, where the relevant ecosystem extends beyond national boundaries, protected areas should be considered at the supranational level, in ecosystem or bioregional terms as well. This presents a strong argument for transboundary and high-seas protected areas.

B. Ecosystem approach and other approaches

3. Article 8 (a) of the Convention calls for the establishment of a system of protected areas or areas where special measures need to be taken to conserve biological diversity, as far as possible and as appropriate. The word "system" implies that the protected areas of a country or region may be organized into a network, whereby the various components together contribute to sustaining ecosystem function and its biodiversity. Experience shows that various approaches to management may be used in a protected area system. This can complement other measures taken to conserve biological diversity outside protected areas.

4. Decision V/6 of the Conference of the Parties, on the ecosystem approach, states that:

> "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."

5. In its recommendation VIII/3 B, SBSTTA emphasized the implementation of the ecosystem approach in relation to the programme of work on marine and coastal biological diversity on the ground that marine ecosystems include both benthic and pelagic elements and that most species have a mobile stage in their life cycle. Connectivity issues are therefore particularly significant in designing a marine biodiversity management framework, and a single protected area will not be able to protect all the biodiversity within the area. The development of a network of marine protected areas is therefore essential. Ecosystem considerations are also critical for the effective conservation of inland water biodiversity and especially so for rivers. Sustaining both lateral (between the river and its wetlands) and

longitudinal (upstream to downstream) connectivity is required in order to sustain natural river ecosystem function. Likewise, for both rivers and lakes, the catchment area should be managed as part of the aquatic ecosystem.

6. Protected-area systems represent 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. An ecological network can be described as:

> "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 sustainably 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." 1/

7. Application of the ecosystem approach requires that protected area planning and management 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". The term is frequently used interchangeably with "bioregion".

III. METHODS AND APPROACHES FROM THE PLANNING TO THE MANAGEMENT OF PROTECTED-AREA NETWORKS AND SITES

8. Before embarking on planning for protected areas, Governments or relevant organizations develop a strategy, which, in general, identifies potential goals and objectives for areas to be protected, possibly in the broad context of sustainable development. The strategy proposes recommendations, actions and investments needed to address each objective and assign a priority level to each action. These recommendations usually result in plans and programmes.

A. Approaches to setting protected-areas goals and priorities

9. 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 systematic, scientifically valid and transparent manner. In modern times, particularly in the western world, conservation strategies began with a focus on species, first to protect useful species from over-harvesting and later to conserve species as worth protecting for their own intrinsic value (Redford *et al.*, 2003). Later, specific biomes, habitats or 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. Land and natural-resource tenure (ownership, access and control) are important when determining which conservation options to pursue (BirdLife International, 2001).

10. In the context of the Convention, protected-areas planning is undertaken as part of the development of national biodiversity strategies and action plans. In this and other contexts, 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 objectives and priorities.

1/ This description was proposed by the Ad Hoc Technical Expert Group on Protected Areas drawing on a strategic Round Table on the Role of Protected Areas and Ecological Networks in Biodiversity Policies, held in The Hague in June 2003.

11. Typically, conservation targets and priorities are expressed geographically. Geographic priorities vary considerably depending on the criteria used in arriving at them. Annex I to the Convention on Biological Diversity provides an indicative list of categories of biodiversity important for its conservation at the genetic, species/community and ecosystem/habitat levels. 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) (Johnson, 1995). 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).

12. 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 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.

13. The following are the best-known approaches:

(a) The *"hotspot" approach* utilizes two criteria, endemism and threat, prioritizing those areas where both endemism and threat levels are high. Characterizing hotspots as areas having at least 1,500 endemic plant species and a loss of at least 70 per cent of its natural habitat;

(b) The *"major wilderness area" approach* prioritizes high-biodiversity tropical ecosystems, but focuses on those areas still harbouring "pristine" wilderness, where more than 75 per cent of original pristine vegetation remains and human population densities are less than five people per square kilometre. Twenty-four wilderness areas have been identified following these criteria;

(c) The *"megadiversity country" approach* is, as described by Conservation International, "a country-based method intended to draw attention to biodiversity conservation in the world's top 17 countries for species diversity and endemism" (Mittermeier *et al.* 1998);

(d) *WWF's "Global 200"* attempts to achieve representation of all major habitat types and uses "ecoregions" as the unit of analysis. 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;

(e) 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 forests, which 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." (Bryant *et al.* 1997);

(f) 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 (BirdLife International, 2002). The IBA approach has also been used at the national level;

(g) The Ramsar Convention on Wetlands has established criteria for identifying *wetlands of international importance*. 2/ 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. As of 6 April 2003, 1,308 wetland sites in the Convention's 138 Contracting Parties totalling 110.1 million hectares have been designated for inclusion in the Ramsar List of Wetlands of International Importance. 3/. Criteria for designating wetlands of international importance are also used at the national level;

(h) The Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention) commits its Parties to protecting outstanding 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 date 175 States have ratified the Convention, and the Convention counts 172 natural and mixed (i.e. having natural and cultural values) sites; 4/

(i) The Man and the Biosphere programme, established in 1970 under the United Nations Educational, Scientific and Cultural Organization (UNESCO), has initiated a global network of terrestrial and coastal and marine protected areas known as "Biosphere Reserves" established to promote a balanced relationship between people and nature. 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 systematic conservation of biodiversity. 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 constituted 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.

14. Close linkages between site plans and wider conservation strategies are essential so as to keep the plan relevant to priority conservation needs and approaches, often described in national strategies and action plans. Failure to achieve this often leads to plans that are not supported or simply not popular (BirdLife International 2001).

B. Protected-area site and system planning and establishment

1. Developing national protected-area system plans

15. Article 8(a) of the Convention calls each Contracting Party to establish a system of protected areas. Protected-areas systems should be planned to maximize complementarity and connectedness of the individual sites. Ideally, protected area systems are developed at the subregional level and will often expand beyond national boundaries. Selection of protected areas can be guided by scientific tools aiming for evaluating a protected-areas network in terms of its potential to sustain viable populations of focal species. These methods include site-selection algorithms 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. These methods can be applied both at the planning stage for setting up a new protected area system and to evaluate existing systems (Margules and Pressey, 2000).

16. Guidelines and methodologies have been published and are used in many countries, including for example:

2/ See the "Strategic framework and guidelines for the future development of the List of Wetlands of International Importance" adopted by Ramsar resolution VII.11 at http://www.ramsar.org/key_guide_list_e.htm

3/ http://ramsar.org/sitelist.pdf, accessed on 10 August 2003.

4/ http://whc.unesco.org/heritage.htm, accessed on 10 August 2003.

(a) The best practice guidelines on national system planning for protected areas developed by the IUCN's World Commission on Protected Areas (WCPA), in which 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." Essential elements for a national protected-areas system plan can be found in Davey (1998);

(b) The ecoregional planning (ERP) methodology developed by The Nature Conservancy (TNC), a technically detailed and field-tested methodology being applied by a number of Governments and non-governmental organisations. 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" (Groves *et al.* 2002).

17. 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 should reflect "on-ground needs and priorities, and must be 'owned' by those who will have to implement it…" and, like the ERP, it 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" (Davey, 1998).

18. Annex IV to recommendation VIII/3 B adopted by SBSTTA at its eighth meeting provides guidelines for the development of national systems of marine and coastal protected areas.

2. Planning and establishment of protected-area sites

19. The planning and establishment of particular protected area sites require a more 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 should 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. Stakeholder participation becomes 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.

20. Most countries already have methodologies for protected area site planning written into relevant legislation and regulations. For this reason, they may be reluctant to adopt new methodologies, even if the old methods may no longer be congruent with current conservation science and evolving national conservation goals. In addition, national Governments, unlike conservation organizations, have to balance conservation objectives with other, sometimes competing, priorities, such as poverty alleviation and the promotion of agriculture and industry.

21. 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 ones, if their proponents are to gain the support of protected-areas policymakers and planners. Examples of new methods include *inter alia*:

(a) The Five-S Framework for Site Conservation developed by The Nature Conservancy (2000), which provides an approach to identify the key targets for conservation at a site, analysing threats, evaluating capacity, devising management strategies, and establishing systems for monitoring the effectiveness of site management over time. The Five-S Framework can be a complex process, requiring considerable technical and financial resources. However there exist experiences from developing countries on how the framework can be adapted to situations lacking high levels of capacity (Nicoll, 2002);

(b) The framework applied by BirdLife International in a number of African countries in collaboration with the Global Environment Facility. Key elements include: establishing the time frame; determining the institutional focal point, its mandate and expertise; analysing tenurial and legal status issues; analysing 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 applicable to all site planning exercises (BirdLife International, 2001).

22. Size and connectivity are critical factors in establishing protected area and ensuring their ability to conserve biological diversity. 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 and have compatible adjacent land uses and that are functionally connected to other reserves will protect more biodiversity than small, isolated reserves. However, it will often be impossible to develop very large connected protected areas due to land use history and competing issues. Small island ecosystems have considerably smaller conservation area requirements.

23. Site planning can also be influenced by the role that a given protected are will play. The main purposes of protected areas include scientific research; wilderness protection; preservation of genetic, species, community and landscape diversity; maintenance of ecosystem services; protection of specific natural and cultural features, and maintenance of spiritual attributes; engines of local economic growth and social development, including through tourism and recreation; education; sustainable use of resources from natural ecosystems; maintenance of cultural and spiritual attributes; and national security (IUCN, 1994).

24. 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).

C. Protected-area management

1. Protected-area management categories

25. Protected areas can be established for many different purposes. While it is rare to establish a protected site for only one objective, it is equally unusual for a site to serve all the objectives listed above. Depending on the particular role perceived for a site, and on the socio-political pressures, legal system and cultural context, quite different legal and management regimes may be established to support its protection. Over time, a host of different names or titles for protected areas have been developed. At the present time, there are over 800 terms used to describe national designations and their management regimes.

26. Given this diversity of objectives and management systems, the IUCN protected-areas management categories (IUCN, 1994) 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 by enabling the interpretation of national protected area definitions.

27. 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:

(a) Some sites are difficult to place in a single category, particularly when they are internally zoned with particular zones fitting different categories. In other cases, the legislation or characteristics appear to fall between categories;

(b) There may be insufficient information to accurately determine the category of a protected area, especially where parties remote from the site undertake the classification. Also, intentionally or otherwise, an authority may categorize sites quite differently from the situation on the ground;

(c) 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.

28. A project, "Speaking a Common Language", is under way to examine these issues of protected area categorization, including Cardiff University, IUCN, WCPA and UNEP-WCMC. 5/ The World Database of Protected Areas holds data of for over 100,000 protected areas. Of these, nearly 70 percent have an assigned IUCN management category, and all categories appear to be relatively well represented (see UNEP/CBD/SBSTTA/9/5).

2. Key responsibilities and tasks in managing protected areas

29. Sites legally designated and managed by national Governments form the core of the world's protected-areas system. 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.

30. Whatever type of governance structure a protected area has, the core tasks of management remain roughly the same, although their relative importance and methods out of implementation may 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 to be carried out by protected-areas managers usually include: 6/

(a) *Management plan implementation.* At a minimum, management should establish some form of presence to demonstrate the specific status of the site. 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;

(b) *Delineation of protected area boundaries.* 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;

(c) *Development and maintenance of infrastructure and equipment* (such as office buildings, vehicles, research facilities and equipment, roads, water supply, communications equipment, firearms and amenities for visitors);

(d) *Personnel, financial and administrative management*, including activities such as staff recruitment and daily management; financial accountability; capacity development and other administrative tasks;

(e) *Monitoring, assessment and trend analysis* of the key biological or other components that are the conservation targets or which impinge on the conservation targets of the protected area;

5/ http://www.cf.ac.uk/cplan/sacl/.

6/ Detailed analysis of the tasks required of protected areas managers and the skills needed to discharge them are provided e.g. by the ASEAN Regional Centre for Biodiversity Conservation (ARCBC) based on extensive research and consultation in Southeast Asia. See Appleton *et al*. 2003.

(f) *Practising adaptive management.* Methods to systematically assess management objectives and activities and to adjust them in light of experience and changing circumstances have been developed and widely employed (e.g., Margoluis and Salafsky, 1998; Oglethorpe, 2002);

(g) *Managing tourists, researchers and bioprospectors*, including, *inter alia*, determining conditions for 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 staff and visitors;

(h) *Maintaining good relationships with local and indigenous communities* living in protected areas or adjacent areas;

(i) *Resolving conflicts and disputes* between protected-areas authorities and other stakeholders – such as local communities, business interests, or government agencies;

(j) *Surveillance and law enforcement,* as appropriate;

(k) *Promotion of the values and successes of protected area.* 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 necessity for effective management.

3. Specific considerations of transboundary protected-areas management

31. IUCN defines transboundary protected areas as "areas of land and/or sea that straddle 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" (Sandwith *et al.*, 2001) In addition, a network of coordinated national protected areas belonging to more than one country may be considered transboundary protected areas, if these protected areas 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.

32. Transboundary protected area may be established through high-level political initiatives of governments, local efforts on the ground or by intervention of third parties such as non-governmental organizations, United Nations and academic institutions, or international conventions. Transboundary protected area may be formally connected through legislation, but can also be separate protected areas under cooperative management arrangements based on local agreements without formal merging. In some cases, transboundary "peace parks" have been established as a strategy for reconciliation in areas of recent conflict or disaster.

33. 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 the ecosystem approaches, which recognize the importance of ecological corridors and connectivity, interest in the practical conservation benefits of transboundary protected areas has increased. However, their establishment has to overcome difficulties mainly related to differences in legal and political systems, culture and capacity levels (Hamilton *et al.*, 1996). Development of mechanisms for coordinating and integrating management between countries will be vital and should be guided by the ecosystem approach principles.

IV. CROSS-CUTTING ISSUES RELATING TO PLANNING, ESTABLISHMENT AND MANAGEMENT OF PROTECTED AREAS

A. Effectiveness of protected-areas management

34. Management of protected-areas focus on ensuring that they and their networks are fulfilling the identified goals and objectives. This will require evaluation of effectiveness and application of adaptive

management over time. Key factors for achieving effective management of protected areas include strategic planning, implementation of the management plan, good governance, stakeholder participation, clear legal or customary frameworks to prevent damaging activities, effective compliance and enforcement, ability to control external activities that affect the protected area, availability of the required human and institutional capacity and sustainable financing.

35. Today, almost a tenth of the world's land surface is within some form of protected area, and there is an extensive and growing network of marine protected areas, although the area designated for inland waters protection may be lagging. 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. In particular, obtaining greater understanding of the effectiveness of marine protected areas is currently of special concern for a number of reasons, including in particular that marine protected areas account for less than 1 per cent of total area and there is little information on how effective this protection is for marine biodiversity. The issue of effectiveness of marine protected areas has been taken up by the Ad Hoc Technical Expert Group on Marine Protected Areas established by the Conference of the Parties, which produced guidance on evaluating marine protected-areas effectiveness 7/

36. Evaluation consists of reviewing the results of actions taken and assessing whether they have produced desired results. It is an essential tool for ensuring both financial and managerial accountability and management effectiveness, including how well the interests of local communities and other stakeholders are being taken into account. 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. Monitoring, evaluation and reporting are vitally important in enabling countries to analyse whether targets set in national biodiversity plans as well as obligations under international and regional conventions and programmes are being met.

37. Evaluation is part of adaptive management, a circular process that allows information concerning the past to feed into and improve management in future. Adaptive management is an essential tool of the ecosystem approach (see decision V/8 of the Conference of the Parties).

38. Despite their acknowledged importance, comprehensive evaluations of the effectiveness of protected areas have been relatively rare, or have tended to focus on monitoring biological conditions, 8/ assessing only a limited set of management indicators. One-off evaluations of a management agency or one of its programmes have been more common, 9/ and over the past few years, non-governmental organizations have become increasingly involved in undertaking assessments of protected area effectiveness.

39. In the past few years, efforts to develop robust and comprehensive approaches for evaluating effectiveness of individual or systems of protected areas have proliferated. Most prominent among these is the IUCN "framework for assessing management effectiveness", 10/ developed in collaboration with WWF, the World Bank and the World Heritage Convention. It provides an "umbrella" of guiding concepts under which a range of more specific methodologies has been developed.

7/ Report of the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas (UNEP/CBD/SBSTTA/8/INF/7 and UNEP/CBD/SBSTTA/8/INF/11). See also SBSTTA recommendation VIII/3 B in annex I to the report of SBSTTA on the work of its eighth meeting (UNEP/CBD/COP/7/3).

8/ In the United Kingdom, 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.

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

10/ Hockings *et al.* 2000.

40. Components of the IUCN framework are shown in figure 1. They are divided into six elements, each comprising a number of evaluation indicators to assess management effectiveness. 11/

41. The IUCN management effectiveness framework does not 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. 12/ Many other context-specific methodologies for the evaluation of protected-areas management effectiveness have been developed. 13/

Figure 1. The protected area management cycle and evaluation

Source: Hockings *et al.*, 2000

B. Stakeholder participation and mechanisms to enhance stakeholder involvement

42. As recognized by the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas, stakeholder participation is essential for achieving the global goal and for the establishment and maintenance of individual protected areas and regional networks. Stakeholder participation is particularly important in establishing equitable sharing of benefits accruing from protected areas. In addition, stakeholder participation:

11/ Pomeroy, Robert S., Parks, John E. and Watson, Lani M. 2002. *How is your MPA doing? A Guidebook: Biophysical, socioeconomic, and governance indicators for the evaluation of management effectiveness of marine protected areas* (working draft; version: 31 December 2002).

12/ UNESCO/IUCN 2001.

13/ See appendix III to the report of the Ad Hoc Technical Expert Group on Protected Areas (UNEP/CBD/SBSTTA/9/INF/3).

(a) Allows decisions to be made in an inclusive and transparent way, taking socio-economic and local political factors, as well as biological criteria and local knowledge, into account;

(b) Facilitates the involvement in decision-making and management of a wide range of players, ensuring that the process and plans developed and implementation are "owned" by the stakeholders, and thus increasing the likelihood of success;

(c) Recognizes traditional rights and customs, and other interests of indigenous and local communities and other relevant stakeholders in accordance with national law as appropriate; and

(d) Allows decisions and management to be undertaken at the appropriate level as recommended in the ecosystem approach (e.g., through decentralization).

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

44. The establishment of protected areas affects the livelihoods and interests of many people, groups and institutions. Where local people support the establishment of a protected area, 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. Local communities may also have effective protected area systems already in place that are often unknown to other planners. It is thus widely recognized that local consultation and participation are key ingredients for success in protected area planning, design and management.

45. Undertaking stakeholder analysis is essential. Stakeholders in protected-areas decisions might include: local and indigenous communities; protected area management authorities; other government agencies with natural resource portfolios or which influence natural resources; 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. Because local or indigenous communities, local government agencies, or the private sector may be the primary management authority—or co-management authorities—it is imperative that they are involved in the initial planning and design of the protected area. As the establishment of protected areas has concrete impacts on people's lives and livelihoods, the planning, design and legal establishment of protected areas should be carried through a process that allows the direct engagement of all interested parties, and meaningfully responds to their concerns.

46. 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. Possible criteria for distinguishing among stakeholders in regard to resource use or impact include: 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; and present or potential impact of the activities of the stakeholder on the resource base.

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

(a) *Information sharing*: Participation needs to be informed, and this requires the provision of adequate information to stakeholders in advance of consulting with them. In many cases, language may be a barrier, and key materials will need to be presented in the appropriate language.

(b) *Participatory assessment:* The provision of information through written materials and briefings may not be appropriate for some local and indigenous communities. Instead, participatory assessment and "visioning" exercises have been utilized in many countries and communities. Such approaches enable local communities and central agencies to analyse the local socio-ecological environment, its problems and opportunities, the desired future local communities envisage for themselves and 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. 14/ Similarly, external "experts" can avail themselves of considerably valuable local knowledge often already at hand;

(c) *Benefit-sharing*. Protected areas generate both costs and benefits, which should be shared in an equitable and sustainable manner. One way of engaging local stakeholders in conservation is to 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 as well as the contributions of protected areas to livelihood security and the social recognition of rights to the land and access and use of resources are often significant for local stakeholders, in particular indigenous and local communities. Ideally, benefit-sharing arrangements are established through a negotiated agreement among stakeholders and protected area authorities;

(d) *Building capacity for local stakeholder participation* so that each stakeholder group understands well its own interests and concerns and determine out how to best represent themselves in discussions and negotiations with outsiders such as protected-areas authorities;

(e) *Involvement in decision making:* 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;

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

C. Protected-areas capacity development

48. Effective management of protected areas requires that protected area managers and supporting institutions have sufficient knowledge, capabilities, and resources to plan, manage and monitor 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 requires 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, the capacity to adapt to many kinds of global change and promotion of communication, education and public awareness.

49. New initiatives are been developed such as the Protected Areas Learning Network (PALNet), an interactive, web-based knowledge management facility for protected area managers and stakeholders that will be officially launched at the Fifth IUCN World Parks Congress in September 2003.

14/ 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.

D. Protected area governance and management issues

50. 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. Other variations exist (and often overlap) in one form or another around the world:

(a) Decentralized governance by provincial/state or local government units;

(b) Co-management arrangements between governments, local communities and other stakeholders;

(c) Indigenous territories managed for conservation purposes by indigenous communities with or without the support and concurrence of the government;

(d) Community-conserved areas voluntarily established by local and indigenous communities, whether legally recognized by governments or not;

(e) Protected areas governed by private sector entities (both non-profit and for-profit) under contract or outright private ownership.

E. Financial aspects

51. 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. However, 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 vested in local communities bears a tangible financial cost that must be factored into the equation. Hence, it has been suggested that "conserving relatively intact habitats will often require compensatory mechanisms to mitigate the impact of private, local benefits foregone, especially in developing countries" (Balmford *et al.*, 2002).

52. The current shortfall in funding is large. According to one study, the total annual cost of a global, representative system of protected areas would be some US $45 billion, including the costs of establishing new areas, recurrent management costs, and payments to meet private opportunity costs of existing and new areas (Balmford *et al.*, 2002). The study noted that while this seems like an exorbitant sum, it represents less than 5 per cent of existing agricultural and natural-resource subsidies around the world, and equals only 0.2 per cent of total global gross domestic product.

53. In addition to other bilateral and multilateral funds, the Global Environment Facility (GEF), which operates the financial mechanism of the Convention, has provided significant funding to implement the provisions of the Convention, including on protected areas. The 2003 analysis of the GEF biodiversity portfolio indicates that there are 199 projects (34 per cent of the total of 590) that have a protected area identified as being within their target area. GEF financing of these projects is nearly $1.1 billion, with co-financing of over $2.4 billion. The 1056 protected areas identified in these projects cover nearly 227 million hectares.

54. GEF is, therefore, a significant source of international financing for protected areas, and it will hopefully continue to be so in the coming years. This priority encompasses the achievement of ecological, institutional, social, political and financial sustainability in the context of national-level protected-area systems". 15/

15/ http://www.gefonline.org/projectList.cfm.

55. Continued support for protected areas from 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 a 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.

56. 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 billion, with about $600 million from foundations. Much of this is channelled through large international non-governmental organizations.

57. One relatively new and distinctive source of protected-areas funding is the United Nations Foundation (UNF). Between 1999 and 2003, UNF financing, channelled through the UNESCO World Heritage Centre and the UNDP-GEF Secretariat, has benefited some 45-50 protected areas designated as World Natural Heritage sites on the basis of their significance for global biodiversity, as well about 13 additional protected areas that have the potential to satisfy biodiversity criterion and conditions to be declared as World Heritage sites. This support has attracted additional private sector funding and also catalysed a number of non-governmental organizations to rally behind the UNESCO World Heritage Centre, and encouraged IUCN to support protected area management in World Heritage sites.

58. Given the fact that conservation of biodiversity provides global as well as national benefits, it is clear, as the Plan of Implementation of the World Summit on Sustainable Development stresses, that more effective conservation of biodiversity—including strengthening the role of protected areas—will require new and additional financial resources provided by developed to developing countries.

59. Worldwide, the bulk of funding for conservation comes from short-term development assistance projects (3-5 years) and erratic annual government allocations. A shift from the current project-based intervention to a more long-term programmatic approach should be encouraged. Such mechanisms as national conservation trust funds, dedicated green taxes (e.g., airport departure taxes) and resource user fees (e.g., park entrance fees) should be further explored. The Conservation Finance Alliance—a consortium including numerous international conservation organizations, the Secretariat of the Ramsar Convention, UNDP, the World Bank, the GEF, the German Technical Cooperation Agency (GTZ) and the United States Agency for International Development (USAID)—has produced a *Training Guide for Conservation Finance Mechanisms*.16/ However, major barriers exist to scaling up 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.

16/ 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.

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LIST OF ACRONYMS AND ABBREVIATIONS

ERP	Ecoregional Planning
GEF	Global Environment Facility
IBA	Important Bird Area
MAB	UNESCO - Man and the Biosphere programme
SBSTTA	Subsidiary Body on Scientific Technical and Technological Advice
UNDP	United Nations Development Programme
UNEP-WCMC	World Conservation Monitoring Centre
WCPA	World Commission on Protected Areas
WRI	World Resources Institute
WWF	World Wide Fund For Nature
