

Annex I

**RECOMMENDATIONS ADOPTED BY THE SUBSIDIARY BODY ON SCIENTIFIC,
TECHNICAL AND TECHNOLOGICAL ADVICE AT ITS NINTH MEETING**

IX/1. Progress reports on implementation

The Subsidiary Body on Scientific, Technical and Technological Advice,

Having considered the progress reports on the implementation of the thematic and cross-cutting programmes of work under the Convention prepared for its ninth meeting,

Recalling recommendation VI/5, in which it agreed to consider progress reports from relevant assessments, as a standing item at its meetings, and to review methodologies in the light of experience,

1. *Welcomes:*

(a) The progress reports prepared by the Executive Secretary on the implementation of the thematic programmes of work and work on cross-cutting issues (UNEP/CBD/SBSTTA/9/2 and 3);

(b) The progress reports on proposals for the integration of non-timber forest resources in the forest inventory and management (UNEP/CBD/SBSTTA/9/INF/14) and on development of elements for a possible joint work programme on fire prevention and management with the Food and Agriculture Organization of the United Nations, the International Tropical Timber Organization, the Global Fire Monitoring Center and other relevant organizations (UNEP/CBD/SBSTTA/9/INF/15), and *encourages* the Executive Secretary to continue strengthening cooperation with these organizations to carry out these collaborative activities in time for a meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to the eighth meeting of the Conference of the Parties; and

(c) The reports on the Global Taxonomy Initiative (GTI) (UNEP/CBD/SBSTTA/9/INF/16, INF/17 and INF/30);

2. *Also welcomes* the progress reports on assessments contributed by the Food and Agriculture Organization of the United Nations on the Global Forest Resources Assessment (FRA) (UNEP/CBD/SBSTTA/9/INF/37) and by the Millennium Ecosystem Assessment on Ecosystems and Human Well-being: A Framework for Assessment (UNEP/CBD/SBSTTA/9/INF/20), and *invites* these organizations to report on new developments to the Subsidiary Body on Scientific, Technical and Technological Advice at its future meetings;

3. *Recommends* that the Conference of the Parties urges Parties and other Governments to participate actively in the relevant review processes under these assessments, as required;

4. *Takes note* of the proposals for further development and refinement of the guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation or procedures and in strategic environmental assessment (UNEP/CBD/SBSTTA/9/INF/18); and *decides* to follow up on decision VI/7 A at one of its future meetings in line with the multi-year programme of work of the Conference of the Parties up to 2010;

5. *Recommends* that the Conference of the Parties urges Parties and other Governments that have not done so to contribute case-studies on current experiences in environmental impact assessment and strategic environmental assessment procedures that incorporate biodiversity-related issues as well as experiences in applying the guidelines contained in the annex to decision VI/7 A;

6. *Welcomes* the preliminary assessment undertaken by the Executive Secretary on the relationship between the IPF/IFF proposals for action and the activities of the expanded programme of work on forest biological diversity (UNEP/CBD/SBSTTA/9/INF/31);

7. *Recommends* that the Conference of the Parties invites the Coordinator and Head of the Secretariat of the United Nations Forum on Forests, the Collaborative Partnership on Forests members

and other relevant partners and organizations as specified in paragraph 19 (b) of decision VI/22 to provide further views on the assessment mentioned in paragraph 6 above;

8. *Welcomes* the report of the London meeting on “2010 – The Biodiversity Challenge” organized by the Executive Secretary in collaboration with the World Conservation Monitoring Centre of the United Nations Environment Programme, the United Nations Development Programme and other partners; and *stresses* the need to establish a process for identifying priority measures required for achieving, and assessing progress towards the achievement of, the 2010 target as contained in decision VI/26 and endorsed by the World Summit of Sustainable Development and therefore *urges* Parties to the Convention to address these issues at the seventh meeting of the Conference of the Parties.

IX/2. Genetic use restriction technologies

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling paragraph 21 of decision VI/5 adopted by the Conference of the Parties at its sixth meeting which established the Ad Hoc Technical Expert Group on Genetic Use Restriction Technologies to further analyse the potential impacts of genetic use restriction technologies on smallholder farmers, indigenous and local communities and on Farmers' Rights with a view to enabling the Subsidiary Body on Scientific, Technical and Technological Advice to prepare advice for the consideration of the Conference of the Parties at its seventh meeting,

Noting the report of the Ad Hoc Technical Expert Group on Genetic Use Restriction Technologies (UNEP/CBD/SBSTTA/9/INF/6),

Conscious of the need, expressed by a number of Parties, to address this issue as a matter of urgency and priority but unable to do so because of the broad agenda before it at its ninth meeting;

1. *Transmits* the report of the Ad Hoc Technical Expert Group on Genetic Use Restriction Technologies to the seventh meeting of the Conference of the Parties for its information;

2. *Recommends* that the Conference of the Parties at its seventh meeting request the Subsidiary Body on Scientific, Technical and Technological Advice to consider the report of the Ad Hoc Expert Group on Genetic Use Restriction Technologies at its tenth meeting with a view to providing advice to the Conference of the Parties at its eighth meeting.

IX/3. Global Taxonomy Initiative

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling decision VI/8 of the Conference of the Parties on the Global Taxonomy Initiative and its programme of work, including the development of a Coordination Mechanism for the Global Taxonomy Initiative,

Recalling also the recommendation of the Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010 that an in-depth review of ongoing work under the Global Taxonomy Initiative be included in the agenda of the eighth meeting of the Conference of the Parties,

Noting that to successfully achieve the strategic goal of reducing the current rate of biodiversity loss by 2010, greater taxonomic knowledge and capacity will be required for many of the indicators and activities that are being developed to guide policy makers and resource managers in the conservation and sustainable use of biodiversity,

1. *Recommends* that the Conference of the Parties at its seventh meeting:
 - (a) *Notes* the progress and commitment being made in implementing the programme of work for the Global Taxonomy Initiative;
 - (b) *Requests* Parties, other Governments and regional and international organizations to take full account of the importance of taxonomic capacities in achieving the goals of the Convention, to support taxonomic activities to attain the 2010 target, and to provide all necessary support to national and regional taxonomic centres of research and expertise;
 - (c) *Requests* Parties to appoint national focal points for the Global Taxonomy Initiative as called for in decision V/9, and *urges* all Parties to ensure that those focal points work with their taxonomic communities taking into account the programme of work for the Global Taxonomy Initiative;
 - (d) *Requests* Parties to appropriately include and give full support to the taxonomic work needed to accomplish the thematic and cross-cutting programmes of work and activities under the Convention;
 - (e) *Requests* Parties to provide technical and financial support for the operations of the Coordination Mechanism of the Global Taxonomy Initiative;
 - (g) *Requests* the Executive Secretary, in collaboration with the Coordination Mechanism for the Global Taxonomy Initiative to:
 - (i) Ensure that appropriate taxonomic expertise is included in inter-sessional meetings and expert groups convened by the Secretariat as appropriate;
 - (ii) Develop the process and guidelines for the in-depth review, including mechanisms for monitoring progress in the implementation of the programme of work for the Global Taxonomy Initiative, to be finalized during the tenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice for consideration at the eleventh meeting of the Subsidiary Body; and
 - (iii) Undertake a gap analysis of the existing programmes of work with respect to taxonomic components, in order to more effectively build taxonomy into the work programmes and to develop an understanding of the taxonomic capacity necessary to accomplish the targets of these programmes of work;
2. *Further recommends* that Parties give clear and specific guidance to the financial mechanism regarding adequate funding to developing countries for implementing the Global Taxonomy Initiative and for integrating taxonomic capacity-building activities with thematic and cross-cutting programmes, including both enabling activities and other projects.

IX/4. Protected areas

The Subsidiary Body on Scientific, Technical and Technological Advice

1. *Welcomes* the report of the Ad Hoc Technical Expert Group on Protected Areas (UNEP/CBD/SBSTTA/9/INF/3);
2. *Express its appreciation to:*
 - (a) The Government of Sweden for its financial support of the Expert Group meeting;
 - (b) Other Governments and organizations for the participation of their representatives;
 - (c) The co-chairs and all the members of the Expert Group for their contributions;
3. *Welcomes* the outcomes of the Fifth IUCN World Parks Congress and, in particular, the Congress Message to the Convention on Biological Diversity;
4. *Welcomes* the pledge made by the consortium of international non-governmental organizations ^{1/} on the occasion of the ninth meeting of SBSTTA to provide and mobilize financial, technical and other support for the implementation of the programme of work on protected areas under the Convention and thus contribute to the achievement of the 2010 target pursuant to decision VI/26; and invites other donor agencies, intergovernmental organizations, private sector, and others to make similar pledges.
5. *Also welcomes* the proposal made by the same consortium for the establishment of a cooperative partnership on protected areas of public agencies and non-governmental organizations that could contribute to the operationalization of the programme of work with focused and coordinated support for capacity building, mobilization of additional funding, technical and other assistance.
6. *Recommends* that the Conference of the Parties:
 - (a) *Confirms* that efforts to establish and maintain systems of protected areas and areas where special measures need to be taken to conserve biological diversity in line with Article 8 on *in situ* conservation and other relevant articles of the Convention, are essential for achieving, in implementing the ecosystem approach, the three objectives of the Convention and thus contributing to achieving the 2010 target contained in the Strategic Plan of the Convention and in the Plan of Implementation of the World Summit on Sustainable Development, and to achieve sustainable development and the attainment of the Millennium Development Goals;
 - (b) [*Considers* options on how to stipulate the commitments of Parties to targets and timetables in the present programme of work concerning protected areas in a comprehensive regime]; ^{2/}
 - (c) [*Recognizes* that Parties should implement the programme of work on protected areas in the context of their national priorities and needs. Activities implemented domestically by Parties will be prioritized based on country and regionally specific needs, national determination, legislation, circumstances and priorities concerning protected areas issues, and their national protected areas and biodiversity strategies. Inclusion of an activity does not mean relevance of that activity to all Parties];

^{1/} BirdLife International, Conservation International, The Nature Conservancy, Wildlife Conservation Society, WWF, and World Resources Institute.

^{2/} Bracketed text in the recommendation indicates lack of consensus.

(d) [*Emphasizes* that the targets should be viewed as a flexible framework within which national and/or regional targets may be developed, according to national priorities and capacities, and taking into account differences in protected areas between countries;

(e) *Invites* Parties and Governments to develop national and/or regional targets, and, as appropriate, to incorporate them into relevant plans, programmes and initiatives, including national biodiversity strategies and action plans;

(f) *Emphasizes* the need for capacity-building, particularly in developing countries, small island developing States, and countries with economies in transition, in order to enable them to implement the programme of work;

(g) *Invites* Parties, other Governments, the financial mechanism, and funding organizations to provide adequate and timely support to the implementation of the programme of work, especially by developing country Parties, in particular the least developed countries and small island developing States among them, and Parties with economies in transition;]

(h) [*Underlines* the importance of conservation of biological diversity not only within but also outside protected areas by ensuring sustainable use of all natural resources in order to achieve a significant reduction of the rate of biodiversity loss by 2010 and therefore also calls for increased efforts to integrate biodiversity conservation and restoration aspects into sectoral policies and programmes.]

(i) *Considers* options to further develop the concept of ecological networks, and other related concepts in order to follow up the WSSD Plan of Implementation and the conclusions of Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010;

Status and trends of, and threats to, protected areas

(j) *Welcomes* the documents on status and trends of, and threats to, protected areas prepared by the Executive Secretary (UNEP/CBD/SBSTTA/9/5);

(k) *Agrees* that the indicative list of categories set out in Annex I of the Convention should guide the selection of protected areas and areas where special measures need to be taken to conserve biological diversity;

(l) *Recognizes* that at the global level the number and extent of protected areas has been increasing in the past decades, so that around 11 per cent of the world's land surface is currently in protected status. However, existing systems of protected areas are not representative of the world's ecosystems, habitat types and biomes, species and marine areas, of which less than 1 per cent are protected, are particularly under-represented; and agrees [on] actions [need] to be taken to fill these gaps.

(m) *Recognizes* that the lack of knowledge and awareness of the threat to, and the role and value, of biodiversity, insufficient financial support, poor governance, ineffective management and insufficient participation, pose fundamental barriers to achieving the protected areas objectives of the Convention on Biological Diversity;

Overall objective

(n) *Adopts* the objective of establishment and maintenance by 2010 ^{3/} of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas

^{3/} References to marine protected area networks to be consistent with the target in the WSSD plan of implementation.

integrated into a global network of protected areas and areas where special measures need to be taken to conserve biological diversity.

Programme of work

(o) *Adopts* the elements, goals and targets of the programme of work on protected areas included in the present document and develops and adopts specific activities taking as basis the activities contained in the report of the Ad Hoc Technical Expert Group and submissions made at the ninth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice;

(p) *Affirms* that any decisions adopted on the basis of recommendation VIII/3 B of the Subsidiary Body on Scientific, Technical and Technological Advice, on marine and coastal protected areas, be considered an integral part of the Convention's work on protected areas;

(q) *Urges* Parties, other Governments and organizations to implement the programme of work, and further *urges* Parties to incorporate the elements of the programme of work into their national biodiversity strategies and action plans;

(r) *Recognizes* that effective implementation of the programme of work to meet the 2010 target will require new and additional financial and technical resources, particularly for the developing countries and countries with economies in transition and small island developing States, and *recognizes* in this context the recent substantial replenishment of the Global Environment Facility;

(s) *Recalls* the obligations of Parties towards indigenous and local communities in accordance with Article 8(j) of the Convention and [national legislation] and *notes* that the establishment and management of protected areas requires particular attention. [Respect for land tenure, prior informed consent and indigenous territorial rights, where applicable, are critical in this regard];

(t) *Urges* Parties to elaborate outcome-oriented targets for the extent, representativeness and effectiveness of their national systems of protected areas, taking into account the Strategic Plan of the Convention, the Global Strategy for Plant Conservation, the Plan of Implementation of the World Summit on Sustainable Development and the Millennium Development Goals, as well as any targets adopted by the Conference of the Parties to facilitate monitoring of the progress towards achievement of the 2010 target;

(u) *Requests* the Subsidiary Body on Scientific, Technical and Technological Advice to develop scientific and technical advice on measures required to achieve a truly representative national and regional systems of protected areas, integrated into a global network, in order to contribute to the 2010 target and longer-term purpose of the Strategic Plan. This work should draw upon 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 of the Fifth IUCN World Congress on Protected Areas, and the work of relevant local and indigenous communities, and non-governmental organizations;

(v) *Decides* to establish [an ad hoc technical expert group] [an ad hoc open ended working group] on protected areas to support and review implementation of the programme of work and report to the Conference of the Parties; ^{4/}

(w) *Decides* to assess at [the eighth and tenth meetings of the Conference of the Parties] [at each meeting of the Conference of the Parties until 2010], the results of the above review, and to determine the need for possible stricter measures [and additional financial and technical support];

^{4/} Detailed terms of reference of the ad hoc open ended working group to be elaborated by the Conference of the Parties at its seventh meeting.

- (x) *Suggests* the following tasks need to be explored:
- [(i) To explore options for cooperation for the establishment of protected areas on areas beyond national jurisdiction, consistent with international law including the United Nations Convention on the Law of the Sea, [with the consent and cooperation of all coastal States;]]
 - (ii) To explore options of technical, financial and other support including self financing, in accordance with Article 8(m) of the Convention, for the establishment of a national and regional systems of protected areas, and their integration into global network including identification and removal of barriers to the creation of protected areas, and the removal of perverse incentives for unsustainable activities, pursuant to decision VI/15, on incentive measures;
 - (iii) To develop a “tool kit” with criteria, guidelines, and definitions to provide assistance to Parties for the identification, designation, management, notification, monitoring and evaluation of protected areas, including ecological networks with special regard to stakeholder involvement and benefit sharing mechanisms;
 - (iv) To review reports from the Parties, academic and scientific organizations, civil society and others on progress in the implementation of the programme of work on protected areas, compiled by the Executive Secretary.

(y) *Urges* Parties and *invites* other Governments, and relevant organizations to report to the Executive Secretary on implementation of this decision and the programme of work prior to [the eighth and tenth meetings of the Conference of the Parties] [each meeting of the Conference of the Parties until 2010];

(z) *Recognizes* the value of a single international classification system for protected areas and the benefit of providing information that is comparable across countries and regions and therefore *welcomes* the ongoing efforts of the IUCN World Commission on Protected Areas to refine the IUCN system of categories and *encourages* Parties, other Governments and relevant organizations to assign protected-area management categories to their protected areas, providing information consistent with the refined IUCN categories for reporting purposes;

(aa) *Invites* the World Conservation Monitoring Centre of the United Nations Environment Programme and the new consortium of international organizations to further develop the World Database on Protected Areas in order to assist the monitoring of progress towards the overall objective of this decision, and *urges* Parties, other Governments and relevant organizations to provide up-to-date information for the Database;

(bb) *Invites* the consortium referred to in paragraphs 4 and 5 above to report to the Conference of the Parties on the progress in supporting the programme of work on protected areas;

Suggested supporting activities of the Executive Secretary

(cc) *Requests* the Executive Secretary to update information on status and trends of, and threats to, protected areas as part of the reviews of the implementation of the thematic programmes of work, in collaboration with Parties and relevant organizations, in particular the IUCN World Commission on Protected Areas;

(dd) *Requests* the Executive Secretary to strengthen collaboration with other organizations, institutions and conventions with a view to supporting implementation of the activities contained in the

programme of work, promoting synergies and avoiding unnecessary duplications, and to establish a liaison group of relevant organizations including the World Heritage Convention, the Ramsar Convention on Wetlands, the Man and Biosphere programme of the United Nations Educational, Scientific and Cultural Organization, relevant regional conventions and other organizations to facilitate this objective;

(ee) *Further requests* the Executive Secretary to:

- (i) Compile information received from Parties, other Governments and relevant organizations and bodies on the implementation of the programme of work, and transmit this information to the [ad hoc open ended working group] [ad hoc Technical expert group];
- (ii) Compile and disseminate information linking protected areas to sustainable development, poverty eradication and the Millennium Development Goals;
- (iii) Establish in collaboration with the IUCN World Commission on Protected Areas a roster of experts to help respond to requests by Parties for assistance in implementing the programme of work on protected areas and to draw experts from this roster, at the request of countries, to assess their steps undertaken to implement the programme of work on protected areas with a view to identifying the needs of those countries in the further implementation of the programme of work.

7. *Requests* the Executive Secretary to incorporate the submissions made by Parties at the ninth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, where appropriate, into the activities in the programme of work to be forwarded to the seventh meeting of the Conference of the Parties.

*Annex**

[PROPOSED ELEMENTS OF A PROGRAMME OF WORK ON PROTECTED AREAS

I. INTRODUCTION

1. *In situ* conservation, sustainable use of biological diversity and the fair and equitable sharing of benefits arising from the use of genetic resources are dependent upon properly maintaining sufficient natural habitat. Protected areas, together with conservation, sustainable use and restoration initiatives in the wider land-and seascape are essential components in national and global biodiversity conservation strategies. They provide a range of goods and ecological services while preserving natural and cultural heritage. They can contribute to poverty alleviation by providing 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, most countries have developed a system of protected areas. The protected-area network now covers about 11 percent of Earth's land surface. Less than 1% of the Earth's marine area is covered. The central role of protected areas in implementing the objectives of the Convention has been repeatedly emphasized in decisions of the Conference of Parties. They form a vital element of the various thematic programmes of work, namely, 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

* The bracketed text in the annex could not be discussed due to lack of time.

to the best available data on the status and trends on protected areas (see UNEP/CBD/SBSTTA/9/5), the current global systems of protected areas are not sufficiently large, sufficiently well-planned, nor sufficiently well-managed to maximize their 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); the World Wide Fund for Nature (WWF); the UNESCO Man and Biosphere programme (MAB); the UNESCO World Heritage Convention; 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 Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES); 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 lands, coastal and marine and mountain 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.

5. The World Summit on Sustainable Development, in its Plan of Implementation, has stated that the achievement of the 2010 target requires new and additional financial and technical resources for developing countries, and that the progress in establishment and maintenance of a comprehensive, effectively managed, and ecologically representative global system of protected areas is of crucial importance for achieving the 2010 target. The decision of the World Summit includes the commitment to increase funding for activities in this field, recognizing that funding for this purpose generally should consist of a mixture of national and international resources and include the whole range of possible funding instruments such as public funding, debt for nature swaps, private funding, remuneration from services provided by protected areas, and taxes and fees at the national level for the use of ecological services.

II. OVERALL PURPOSE AND SCOPE OF THE PROGRAMME OF WORK

6. The overall purpose of the programme of work on protected areas is to support the establishment and maintenance by 2010 of a comprehensive, effectively managed, and ecologically representative global system of networks of protected areas. The ultimate result will be to significantly reduce biological diversity loss at the international, regional, 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.

7. The programme of work consists of four 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.

8. The Convention's work on protected areas takes into account 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 conservation, sustainable use and the fair and equitable sharing of benefits arising from the use of genetic resources. 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.

9. 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 implementing the programme 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..

10. 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, strengthening, and managing, protected-area systems and sites

Goal 1.1 – To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals.

Target: By 2010, terrestrially and 2012 in the marine area, ^{5/} a global network of comprehensive, representative and effectively managed national and regional protected area system is established as a contribution to (i) the goal of the Strategic Plan of the Convention and the World Summit on Sustainable Development of achieving a significant reduction in the rate of biodiversity loss by 2010; (ii) the Millennium Development Goals – particularly goal 7 on ensuring environmental sustainability; and (iii) the Global Strategy for Plant Conservation.

[Definition: Systems of protected areas and ecological networks should consist of a system of core areas, corridors, stepping stones and buffer zones designed and managed in such a way as to maintain or restore ecosystem services, preserve biological diversity and allow a suitable and sustainable use of natural resources. It is recognized throughout the programme of work that the term “national” may mean either national or sub-national in some countries. A differentiated system comprising a broad range of protection levels and intensities of land use compatible with conservation objectives should be put in

^{5/} References to marine protected area networks to be consistent with the target in the Plan of Implementation of the World Summit on Sustainable Development.

place. Protected areas should not be seen as being isolated and should be integrated into broader landscapes, seascapes and sectors.

Suggested activities of the Parties

- 1.1.1. 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.
- 1.1.2. As a matter of urgency, by 2005 conduct feasibility studies to establish or expand protected areas in any remaining large, intact or relatively unfragmented or highly irreplaceable natural areas under high threat, as well as protected areas securing globally critical endangered species and endangered species confined to a single site, and largely unprotected freshwater and marine ecosystems, paying particular attention to areas beyond national jurisdiction.
- 1.1.3. Drawing upon existing site selection methodologies, develop by 2005 a framework for assessing protected area system gaps at the national and ecoregional levels, including marine and coastal protected areas. This should take into account different levels of biodiversity, namely genetic, species, habitat, ecosystem and landscape. The framework should take into account Annex I of the Convention on Biological Diversity 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. The framework should contain lists of species and habitats for which conservation measures are considered necessary.
- 1.1.4. By 2006, conduct national-level reviews of existing and potential forms of conservation including innovative models of governance for protected areas that need to be recognized and promoted through legal, policy, financial institutional and community mechanisms, such as protected areas run by government agencies at various levels, co-managed protected areas, private protected areas, community conserved areas, indigenous conservation areas and micro-reserves.
- 1.1.5. Drawing upon the above-mentioned reviews, 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).
- 1.1.6. By 2008, designate the protected areas as identified through the gap analysis (including precise borders and maps) and complete by 2010 the establishment of comprehensive and representative national systems of protected areas, as part of national and regional ecological networks. .
- 1.1.7. 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.

Suggested supporting activities of the Executive Secretary

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

- 1.1.9. Identify options for quantitative and qualitative protected areas targets and indicators that should be used at the global level that could contribute to the 2010 target and the Millennium Development Goals.
- 1.1.10. Invite relevant international and regional organizations to offer their assistance to the Parties in conducting national-level rapid assessments.
- 1.1.11. Compile and disseminate through the clearing-house mechanism relevant approaches, frameworks and tools for system planning and promote and facilitate the exchange of experiences and lessons learned in applying and adapting them to 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 The Nature Conservancy, WWF, WRI, intergovernmental organizations]

Goal 1.2 – To integrate protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function

Target: By 2015, all protected areas are integrated into the wider land- and seascape protected area systems, and relevant sectors, by applying the ecosystem approach and taking into account ecological connectivity and the concept, where appropriate, of ecological networks.

[An ecologically representative and coherent mix of land and/or sea areas that may include protected areas, corridors and buffer zones, and which provides connectivity for species and ecosystems in order to achieve their satisfactory conservation status. Areas within an ecological network may have different types of protection.]

Suggested activities of the Parties

- 1.2.1. 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 strategies such as poverty reduction strategy papers.
- 1.2.2. Identify and implement, by 2008, practical steps for improving such integration, including policy, legal, planning and other measures.
- 1.2.3. Design and manage buffer zones around protected areas, in order to help maintain their ecological integrity, as part of ecological networks.
- 1.2.4. Restore habitats, as appropriate, as a contribution to building ecological networks.
- 1.2.5. Employ, where appropriate, technical innovations in agroforestry, eco-agriculture and sustainable fisheries management to strengthen land- and seascape approaches.

Suggested supporting activities of the Executive Secretary

- 1.2.6 Organize by 2005 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.
- 1.2.7 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 intergovernmental organizations]

Goal 1.3 – To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries

Target: Establish and strengthen by 2010,^{6/} transboundary protected areas, other forms of collaboration between neighbouring protected areas across national boundaries and regional networks to the extent necessary to achieve Goal 1.1, to enhance the conservation and sustainable use of biological diversity, implementing the ecosystem approach, and improving international cooperation.

[Suggested activities of the Parties

- 1.3.1 Collaborate with other parties and relevant partners to establish effective regional networks of protected areas , particularly around shared ecological resources identified as conservation priorities (e.g. barrier reef systems, large scale river basins, mountain systems, large remaining forest areas), and establish multi-country coordination mechanisms as appropriate to support the establishment and effective long term management of such networks.
- 1.3.2 Collaborate with other Parties to establish and manage protected areas on the high seas and other areas beyond national jurisdiction.
- 1.3.3 Establish, where appropriate, new TBPAs with adjacent Parties and countries. and strengthen effective collaborative management of existing TBPAs.
- 1.3.4 Harmonize relevant national management practices with a view to facilitating the establishment and management of TBPAs.

Suggested supporting activities of the Executive Secretary

- 1.3.5 Collaborate and consult with 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, as appropriate, for dissemination to Parties, taking into account the existing IUCN-WCPA Guidelines on TBPAs.

^{6/} References to marine protected area networks to be consistent with the target in the Plan of Implementation of the World Summit on Sustainable Development.

- 1.3.6 Prepare, for the eighth 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.
- 1.3.7 Compile and disseminate information on regional networks 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 intergovernmental organizations.]

Goal 1.4 – To substantially improve site-based protected area planning and management:

Target: All protected areas to have effective management in existence by 2012, using highly participatory and science-based site planning processes that incorporate clear biodiversity objectives, targets, management strategies and monitoring programmes, drawing upon existing methodologies.

[Suggested activities of the Parties

- 1.4.1 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.
- 1.4.2 Identify measurable conservation targets for sites, such as genomes, species, natural communities, ecosystems, and ecological processes, drawing on criteria laid out in Annex I to the Convention on Biological Diversity and other relevant criteria.
- 1.4.3 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.
- 1.4.4 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.
- 1.4.5 As appropriate, but no later than 2012, develop or update strategic management plans for protected areas, built on the above process, to better achieve conservation objectives.
- 1.4.6 Utilize as appropriate the full range of governance systems as well as traditional knowledge and practices of indigenous peoples and local communities.
- 1.4.7 Ensure equitable distribution of costs and benefits arising from the establishment and management of protected areas.

Suggested supporting activities of the Executive Secretary

- 1.4.8 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.
- 1.4.9 Assist Parties, multilateral agencies, non-governmental organizations 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, The Nature Conservancy, Birdlife International, and other intergovernmental organizations.]

Goal 1.5 – To prevent and mitigate the negative impacts of key threats to protected areas:

Target: By 2008, effective mechanisms for identifying and preventing, and/or mitigating the negative impacts of key threats to protected areas are in place.

[Suggested activities of the Parties

- 1.5.1 Apply, as appropriate, but not later than 2010 – timely, strategic environmental impact assessments to any plan or project with the potential to have effects on protected areas, and ensure timely information flow among all concerned parties to that end, taking into account decision VI/7 A of the Conference of the Parties on guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessments.
- 1.5.2 Develop, by 2010, liability regimes, incorporate the polluter-pays principle or other appropriate mechanisms in relation to damages to protected areas, at national and international levels.

Suggested supporting activities of the Executive Secretary

- 1.5.3 Address issues specific to protected areas, in the guidelines for incorporating biodiversity considerations in environmental impact assessment and strategic environmental assessment, procedures and regulations.
- 1.5.4 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.
- 1.5.5 Compile and disseminate through the clearing-house mechanism case-studies practices and lessons learned in mitigating the negative impacts of key threats and facilitate the exchange of experiences.

Main partners

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

Other collaborators

Relevant international, regional and national organizations, WWF, The Nature Conservancy, Birdlife International, and other intergovernmental organizations.]

PROGRAMME ELEMENT 2: Governance, participation, equity and benefit-sharing.

Goal 2.1 – To promote equity and benefit-sharing:

Target: Establish by 2008 mechanisms for the equitable sharing of both costs and benefits arising from the establishment and management of protected areas.

[Suggested activities of the Parties

- 2.1.1. 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.
- 2.1.2. 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.
- 2.1.3. 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.
- 2.1.4. Use social and economic benefits generated by protected areas to alleviate poverty, consistent with protected-area management objectives.
- 2.1.5. Engage relevant stakeholders in participatory planning and governance, recalling the principles of the ecosystem approach.
- 2.1.6. Establish adequate national policies to deal with access to genetic resources within protected areas and benefits arising from their utilization, drawing on the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization.]

Goal 2.2 – To enhance and secure involvement of all stakeholders including local and indigenous communities.

Target: By 2008, all protected areas are managed and established with full and effective participation of indigenous and local communities rights, consistent with national law and international obligations; and participation of other stakeholders in the appropriate phases and levels of work related to protected areas is enhanced;

[Suggested activities of the Parties

- 2.2.1 Carry out national reviews of the status, needs and context-specific mechanisms for involving stakeholders, ensuring gender and social equity, in protected-areas policy and management, at the level of national policy, protected-area systems and individual sites.
- 2.2.2 On the basis of the national reviews, develop specific plans and initiatives to involve stakeholders in all levels of protected areas planning, establishment, governance and management, including indigenous reserves and community conserved areas, including through establishment of multi-stakeholder management councils, as appropriate, using relevant ecological and socioeconomic data with particular emphasis on identifying and removing barriers preventing adequate private sector, NGO and community participation.
- 2.2.3 Plan, establish and manage protected areas with the prior informed consent and in full compliance with the rights of indigenous peoples and local communities.
- 2.2.4 Involve representatives chosen by indigenous and local communities in the management of protected areas proportionate to their rights and interests.
- 2.2.5 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.
- 2.2.6 Promote and support stakeholder organising and capacity building for the establishment and management of protected areas.
- 2.2.7 Ensure an enabling environment (legislation, policies, capacities, and resources) for the involvement of local and mobile people and indigenous stakeholders in decision making, and the development of their capacities and opportunities to establish and manage community-conserved and private protected areas.

Suggested supporting activities of the Executive Secretary

- 2.2.8 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.
- 2.2.9 Make available to Parties case-studies, advice on best practices and other sources of information on stakeholder participation in protected areas
- 2.2.10 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, World Bank, UNDP.

Other collaborators

Relevant international, regional and national organizations, WWF, The Nature Conservancy, Birdlife International, other NGOs and interested parties.]

PROGRAMME ELEMENT 3: Enabling activities

Goal 3.1 – To provide an enabling policy, institutional and socioeconomic environment for protected areas:

Target: by 2008 review and revise policies as appropriate , 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.

[Suggested activities of the Parties

- 3.1.1 By 2006, identify legislative and institutional gaps that impede the effective establishment and management of protected areas, and by 2009, effectively address these gaps.
- 3.1.2 Conduct national-level assessments of the contributions of protected areas to the country's economy and culture, and to the achievement of the Millennium Development Goals at the national level; and 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.
- 3.1.3 Harmonize sectoral policies and laws to ensure that they support the conservation and effective management of the protected area system.
- 3.1.4 Consider governance principles, such as the rule of law, decentralisation, participatory decision-making mechanisms for accountability and equitable dispute resolution institutions and procedures.
- 3.1.5 Identify and remove perverse incentives and inconsistencies in sectoral policies that increase pressure on protected areas, or take action to mitigate their perverse effects. Whenever feasible, redirect these to positive incentives for conservation.
- 3.1.6 Identify and establish positive incentives that support the integrity and maintenance of protected areas and the involvement of communities and other stakeholders in conservation.
- 3.1.7 Develop national incentive mechanisms and institutions to support the establishment of biodiversity conservation areas on private lands, including private reserves and conservation easements, at the national, regional and local level, which achieve biodiversity conservation goals in the managed landscape and seascape surrounding formal protected areas.
- 3.1.8 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.
- 3.1.9 Develop necessary mechanisms for institutions with responsibilities for conservation of biological diversity at the national, regional and local level to achieve institutional and financial sustainability
- 3.1.10 Cooperate with neighbouring countries to establish an enabling environment for transboundary protected areas and other similar approaches including regional networks.

Suggested supporting activities of the Executive Secretary

- 3.1.11 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

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incentive measures including those relating to the development of incentive options through tenure rights, markets, pricing policies, etc.

- 3.1.12 Compile and disseminate case-studies on best practices on the use of incentive measures for the management of protected areas.
- 3.1.13 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, The Nature Conservancy, Birdlife International, World Bank and other intergovernmental organizations.]

Goal 3.2 – To build capacity for the planning, establishment and management of protected areas:

Target: By 2010, comprehensive capacity-building programmes and initiatives are implemented to develop knowledge and skills at individual, community and institutional levels, and raise professional standards, with particular emphasis on social equity.

[Suggested activities of the Parties

- 3.2.1 Compile and/or develop by 2006 national protected-area capacity assessments, incorporating existing knowledge and experiences on protected areas management, including indigenous and traditional knowledge and establish and implement capacity building programmes at the national and local levels and report progress within the framework of the Convention on Biological Diversity. This should include conflict resolution and negotiation skills.
- 3.2.2 Establish effective mechanisms to document existing knowledge and experiences on protected area management, including indigenous/traditional knowledge and identify knowledge and skills gaps.
- 3.2.3 Establish and implement a capacity-building programme, including on financial and technical assistance needs, at the national level that is demand driven and adaptive to changes and innovation and report progress within the framework of the Convention on Biological Diversity
- 3.2.4 Establish mechanisms to exchange lessons learnt, information and capacity-building experiences among countries, in collaboration with the Clearing-house Mechanisms and relevant organizations.
- 3.2.5 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.
- 3.2.6 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, including creative fundraising through fiscal incentives, environmental services and other instruments.

- 3.2.7 Create and/or develop the capacity of protected areas institutions for creative fundraising through fiscal incentives, environmental services, and other instruments.
- 3.2.8 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 and for implementation of national systems of protected areas and networks.

Suggested supporting activities of the Executive Secretary

- 3.2.9 Compile available information, including national reports, review past studies, and identify capacity needs.
- 3.2.10 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 and the CHM.

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, The Nature Conservancy, Birdlife International, World Bank and other intergovernmental organizations.]

Goal 3.3 To develop, apply and transfer appropriate technologies for protected areas:

Target: By 2010 the development, validation, and transfer of appropriate technologies and innovative approaches for the effective management of protected areas is substantially improved, taking into account decisions of the Conference of the Parties on technology transfer and cooperation.

[Suggested activities of the Parties

- 3.3.1 Carry out documentation of appropriate technologies for conservation and sustainable use of biological diversity of protected areas and management of protected areas.
- 3.3.2 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.
- 3.3.3 Make available to the Executive Secretary information concerning appropriate technologies and effective approaches for the management of protected areas.
- 3.3.4 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.
- 3.3.5 Create enabling environment for transfer of technology through legal frameworks and strengthening law enforcement.

Suggested supporting activities of the Executive Secretary

- 3.3.6 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.
- 3.3.7 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, The Nature Conservancy, Birdlife International, other NGOs, Global Biodiversity Information Facility, and interested parties.]

Goal 3.4 . – To ensure financial sustainability of protected areas and national and regional systems of protected areas

Target: By 2008, sufficient resources to meet the costs to effectively implement and manage national and regional systems of protected areas are secured.

[Suggested activities of the Parties

- 3.4.1 Conduct a national-level study by 2006 of financial needs and options (taking into account possibilities of prioritization and adjustment of expenditure patterns) related to the national system of protected areas with funding consisting of a mixture of national and international resources and include the whole range of possible funding instruments, such as public funding, debt for nature swaps, private funding, taxes and fees for the use of ecological services at national level, remuneration from services provided by protected areas, and environmental compensation payments.
- 3.4.2 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 in the development of these plans, countries should draw on the expertise and resources of United Nations agencies, multilateral and bilateral aid agencies, other funding agencies and non-governmental organizations.
- 3.4.3 Collaborate with other countries to develop and implement sustainable financing programs for regional and international systems of protected areas.
- 3.4.4 Provide information on national protected areas financing in future national reports under the Convention on Biological Diversity, and help to strengthen the role of the Convention Secretariat in collecting and sharing information about protected-areas financing, in collaboration with other relevant mechanisms such as the World Database on Protected Areas.
- 3.4.5. Mainstream protected areas into development planning.

Suggested supporting activities of the Executive Secretary

- 3.4.6 Seek information from parties about the financing of protected areas and requirements for implementation of the programme of work.
- 3.4.7 Convene a meeting of the donor agencies for facilitating funding to parties for implementation of the programme of work.
- 3.4.8 Compile and disseminate case-studies and best practices concerning protected area financing through the clearing-house mechanism.
- 3.4.9 Carry out by 2006 a study on the value of ecosystem services provided by protected areas.

Main partners

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

Other collaborators

Relevant international, regional and national organizations, IUCN, WWF, The Nature Conservancy, Birdlife International, other intergovernmental organizations.]

Goal 3.5– To strengthen communication, education and public awareness

Target: By 2008 public awareness, understanding and appreciation of the importance and benefits of protected areas is significantly increased.

[Suggested activities of the Parties

- 3.5.1 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 Communication, Education and Public Awareness Initiative (CEPA) under the Convention on Biological Diversity and targeted towards all stakeholders
- 3.5.2 Identify core themes for education, awareness and communication programmes relevant to protected areas, including inter alia their contribution to economy and culture 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 policy makers.
- 3.5.3 Strengthen, and where necessary, establish information mechanisms directed at target groups such as the private sector, policy makers, development institutions, community-based organizations, the youth, the media, and the general public.
- 3.5.4 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.
- 3.5.5. Ensure that particular attention is to be drawn to a suitable preparation of the information for the variety of local/indigenous groups.
- 3.5.6. Incorporate protected areas as an integral component of the school curricula at both national and regional levels.

Suggested supporting activities of the Executive Secretary

- 3.5.7. 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.
- 3.5.7. 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.
- 3.5.8. Establish, in collaboration with the IUCN World Commission on Protected Areas, the Education and Communication Commission of IUCN, 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, The Nature Conservancy, Birdlife International, multinational mass media corporations.]

PROGRAMME ELEMENT 4: Standards, assessment, and monitoring

Goal 4.1 – To develop minimum standards and best practices for national and regional protected-area systems:

Target: By 2008, standards, criteria, and best practices for planning, selecting, establishing, managing and governance of national and regional systems of protected areas are developed and adopted.

[Suggested activities of the Parties

- 4.1.1 Institute, within the framework of the Convention, a process for the development of voluntary protected areas standards and best practices on planning and management. In developing this framework, Parties may wish to recall the Guideline Series on Protected Area Management produced by IUCN.
- 4.1.2 Develop an efficient, long-term monitoring system, measuring: biodiversity status, status of conservation targets, ecological integrity, threat abatement, and capacity for effective management, where appropriate based on a set of indicators and including voluntary participation.
- 4.1.3 Draw upon monitoring results to employ adaptive management according to the ecosystem approach.

Suggested supporting activities of the Executive Secretary

- 4.1.4 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.

- 4.1.5 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, The Nature Conservancy, Birdlife International, other NGOs and interested parties.]

Goal 4.2 – To evaluate the effectiveness of protected areas management:

Target: By 2008, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and transboundary protected area levels adopted and implemented by Parties.

[Suggested activities of the Parties

- 4.2.1 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, which should adapted to local conditions.
- 4.2.2 Select by 2005 appropriate methods, criteria and indicators for evaluating protected areas management effectiveness.
- 4.2.3 Implement management effectiveness evaluations of at least 30 percent of each Party's protected areas by 2010 and of national protected area systems and ecological networks.
- 4.2.4 Include information resulting from evaluation of protected areas management effectiveness in national reports under the Convention on Biological Diversity.
- 4.2.5 Focus management effectiveness efforts on site and system planning, governance, participatory process, financing, access to genetic resources, and benefit sharing processes.

Suggested supporting activities of the Executive Secretary

- 4.2.6 Compile and disseminate information on initiatives through the clearing-house mechanism and develop a database of experts in evaluation of protected area management effectiveness.
- 4.2.7 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, The Nature Conservancy, Birdlife International, other NGOs and interested parties.]

Goal 4.3 – To assess and monitor protected-area status and trends:

Target: By 2010, systems to enable effective monitoring of protected-area coverage, status and trends at national, regional and global scales, and to assist in evaluating progress in meeting global biodiversity targets are established.

[Suggested activities of the Parties

- 4.3.1 Measure progress towards achieving targets based on a periodic monitoring programme and report on progress towards targets in future national reports under the Convention on Biological Diversity.
- 4.3.2 Incorporate reporting on national components of regional networks of protected areas in national reports and protected areas under the Convention on Biological Diversity.
- 4.3.3 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.
- 4.3.4 Participate in the World Database on Protected Areas maintained by UNEP-WCMC, and the United Nations List of Protected Areas and the *State of the World's Protected Areas* assessment process.
- 4.3.5 Encourage establishment of geographic information system units as a tool for monitoring protected areas and supporting decision-making processes.
- 4.3.6 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 paragraph 4 of decision VI/7 C of the Conference of the Parties to the Convention on Biological Diversity, as well as national and regional databases on protected areas.

Suggested supporting activities of the Executive Secretary

- 4.3.7 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 4.4 – To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected-area systems.

Target: Scientific knowledge relevant to protected areas is further developed as a contribution to their establishment, effectiveness, and management.

[Suggested activities of the Parties

- 4.4.1 Improve research, scientific and technical cooperation related to protected areas.
- 4.4.2 Promote interdisciplinary, applied research, bringing together ecological, social, and economic sciences, with a view to, inter alia, develop and improve understanding of the ecological functions of protected areas, particularly in regard to the maintenance of biogeochemical cycles, including as a criteria for defining standards of exemplification.
- 4.4.3 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.

Suggested supporting activities of the Executive Secretary

- 4.4.4 Develop and strengthen working partnerships with appropriate organizations and institutions which undertake research studies leading to an improved understanding of biodiversity in protected areas.
- 4.4.5 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, The Nature Conservancy, Birdlife International, other NGOs, Global Biodiversity Information Facility, and interested parties.]

IX/5. Technology transfer and cooperation

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling that, by its decision VI/30, the Conference of the Parties requested SBSTTA to consider the scientific, technical and technological aspects of technology transfer and cooperation at its ninth meeting and to adopt a recommendation that will include elements for a programme of work on technology transfer,

Taking note of recommendation 4 of the Open-ended Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010, on the legal and socio-economic aspects of technology transfer and cooperation,

Recalling paragraph 44 (h) of the World Summit on Sustainable Development (WSSD) Plan of Implementation, which calls upon States to provide financial and technical support to developing countries, including capacity-building, in order to enhance indigenous and community-based biodiversity conservation efforts,

Recalling also SBSTTA recommendation II/3 to conduct work on technology transfer within sectoral themes related to the priority issues under its programme of work as set out in recommendation II/12,

Recommends that the Conference of the Parties at its seventh meeting:

(a) *Adopts* the elements of a programme of work on technology transfer and cooperation as contained in the annex to the present recommendation;

(b) *Decides* that implementation of the programme of work should be undertaken in close coordination with relevant activities under thematic programmes of work and programmes of work of other cross-cutting issues, in order to prevent duplication of work and maximize synergy;

(c) *Invites* Parties and relevant international organizations, and *requests* the Executive Secretary, to carry out the activities under their respective responsibilities as spelled out in the programme of work up to the eighth meeting of the Conference of the Parties, as a first phase in the implementation of the programme of work;

(d) *Invites* Parties, in accordance to their identified needs and priorities, to convene national, sub-regional and regional workshops to exchange information and experiences on and to enhance capacity for the successful cooperation, transfer, dissemination and absorption of environmentally sound technologies;

(e) *Decides* that the informal advisory committee of the clearing-house mechanism, further to decision V/14, shall:

- (i) Provide advice on the development of proposals on the possible role of the clearing-house mechanism as a central mechanism for exchange of information on technologies, for facilitating technology transfer and cooperation and to promote and facilitate technical and scientific cooperation relevant for the conservation and sustainable use of biodiversity, and for technologies that make use of genetic resources;
- (ii) Develop guidance for implementation by national clearing house mechanism nodes for common or similar frameworks for identifying the availability of relevant technologies to enhance international cooperation and to facilitate the interoperability with relevant existing systems of national and international information exchange, including technology and patent databases; and

- (iii) Assist in the implementation of proposals for enhancing the clearing-house mechanism as a central mechanism for exchange of information on technologies, for facilitating and promoting technology transfer and cooperation and for the promotion of technical and scientific cooperation as adopted by the Conference of the Parties;

(f) Decides to establish an Ad Hoc Technical Expert Group on Technology Transfer and Technology Cooperation, which shall assist the Executive Secretary in the:

- (i) Preparation of proposals on options to apply institutional, administrative, legislative and policy measures and mechanisms, including best-practices as well as to overcome barriers, to facilitate access to and absorption of technologies on the public domain and to proprietary technologies by developing countries and countries with economies in transition, ;and in the
- (ii) Exploration of possibilities and mechanisms of cooperation with processes in other Conventions and international organizations, such as the UNFCCC Expert Group on Technology Transfer (EGTT);

for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a meeting prior to the eighth meeting of the Conference of the Parties;

(g) *Calls upon* Parties, governments and relevant international and regional organizations to provide financial and technical support and training, as appropriate, to assist in the implementation of the programme of work;

(h) *Provides* additional guidance to the financial mechanism of the Convention on pertinent activities for the building or enhancement of capacity of relevance for the successful transfer of technologies and cooperation;

(i) *Considers* further ways and means of involving multilateral financial institutions, regional banks and other relevant funding bodies in the work of the Convention and in the efforts of Parties in its implementation, particularly with respect to capacity development and technology transfer and cooperation.

Annex

DRAFT ELEMENTS OF A PROGRAMME OF WORK ON TECHNOLOGY TRANSFER AND TECHNOLOGICAL AND SCIENTIFIC COOPERATION

1. The purpose of this programme of work is to develop meaningful and effective action to enhance the implementation of Articles 16 to 19 as well as related provisions of the Convention by promoting and facilitating the transfer of and access to technologies from developed to developing countries as well as to countries with economies in transition as well as among developing countries, necessary to ensure implementation of the three objectives of the Convention, and in support of the target to achieve a significant reduction of the current rate of biodiversity loss at the global, regional and national level by 2010. Implementation of this programme of work shall also contribute to the attainment of the millennium development goals to ensure environmental sustainability and to eradicate extreme poverty and hunger by 2015.

2. The successful transfer of technology and technology cooperation requires a country-driven, integrated approach at international, regional as well as national and sectoral levels, based on cooperation among various stakeholders, including the private sector, governments, indigenous and local communities, bilateral and multilateral institutions, funding institutions, non-governmental organizations and academic and research institutions, to enhance activities on technology assessments, on information

systems, on creating enabling environments, on capacity building and on implementation support mechanisms.

3. Implementation of the activities spelt out in this programme of work, and the indicated timelines, shall not delay the immediate transfer of technologies, in accordance with Articles 16 to 19 of the Convention, in those cases where technology needs and opportunities for the transfer of environmentally sound technologies are already identified and the enabling environment supports their successful transfer, adaptation and absorption.

4. In implementing this programme of work, the various actors enumerated above are invited to take into account the following strategic considerations:

(a) In the light of largely varying socio-economic and cultural conditions among countries, technology transfer, and in particular the assessment of technology needs and of the related needs for the building or enhancement of capacity, is necessarily a country-driven process;

(b) The participation, approval and involvement of all relevant stakeholders, especially indigenous and local communities embodying traditional lifestyles, is key for the successful transfer and diffusion of technology for conservation and sustainable use of biological diversity;

(c) Consideration should be given to identifying and facilitating the use of local solutions to local issues, as the most innovative solutions are often developed locally, but remain unknown to a wider community of potential users;

(d) The strengthening of national, regional and international information systems including through the development and use of common formats, standards and protocols, providing, inter alia, access to information on existing technologies for the purposes of the Convention, and the improvement of the Convention clearing-house mechanism as a central gateway to such information systems, is crucial for the implementation of Articles 16 to 19 of the Convention;

(e) The development of innovative partnerships, involving governmental agencies, public and private research institutions, the private sector, and national and local stakeholders, is a tool that facilitates enabling environments that are conducive to the successful cooperation and transfer of technologies;

(f) In light of the numerous ongoing activities on technology transfer and technology cooperation under existing programmes and initiatives, particular attention should be given to the establishment of synergies with such programmes and initiatives, in order to avoid the duplication of work;

(g) Building or enhancing human and institutional capacity at all levels, in particular in developing countries and in countries with economies in transition, is of paramount importance to implement the present programme of work.

PROGRAMME ELEMENT 1: TECHNOLOGY ASSESSMENTS

Technology assessment is a set of country-driven activities which involve relevant stakeholders in a consultative process to identify and determine the needs of Parties in response to national priorities and policies, particularly developing countries and countries with economies in transition, with regard to the cooperation and transfer of technology for conservation and sustainable use of biodiversity, or technology that makes use of genetic resources, and with regard to building or enhancement of scientific, legal and administrative capacity, and training. Furthermore, assessment should also identify, as appropriate, the potential benefits, costs and risks of such technologies. Any international cooperation in this field should be on mutually agreed terms.

Objective: *Technology needs, the potential benefits costs and risks of such technologies, and the related capacity building needs of Parties are identified in response to national priorities and policies*

Operational target 1.1: *Technology needs assessments are conducted as appropriate, with the participation of stakeholders, in accordance with the activities foreseen in the thematic and cross-cutting work programmes under the Convention and in line with national priorities as set out, inter alia, in the National Biodiversity Strategy and Action Plans,*

Activities

1.1 *Preparation, in accordance with the activities foreseen in the thematic and cross-cutting work programmes under the Convention and in line with national priorities, of technology assessments addressing:*

- (a) Technology needs, opportunities and barriers in relevant sectors;*
- (b) Related needs in the building of capacity.*

Operational target 1.2: Impact and risk assessments are conducted as appropriate with the participation of stakeholders and, if needed and requested, with international cooperation

Activities

1.2.1 *Preparation, as appropriate, of transparent impact assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of technologies, including new technologies, whose risks and benefits are not yet determined.*

1.2.2. *Dissemination of assessments and related experiences at national and international levels*

Main actors: Parties to the Convention on Biological Diversity, in collaboration with relevant national and international stakeholders and with support from GEF and from relevant international funding organization as appropriate

Timeline for implementation: ongoing.

Operational target 1.3: Information on methodologies for the assessment of technology needs are widely available to Parties through the clearing house mechanism and other means as appropriate

Activities:

1.3. *Collect information on technology needs assessment methodologies, analyse applicability and adaptation needs for technologies for conservation and sustainable use of biodiversity, and for technologies that make use of genetic resources and disseminate this information through the clearing house mechanism or other means as appropriate*

Main actor: the Secretariat of the Convention on Biological Diversity, in collaboration with relevant organizations and with input by Parties and Governments

Timeline for implementation: the eighth meeting of the Conference of the Parties

PROGRAMME ELEMENT 2: INFORMATION SYSTEMS

The development or strengthening of national, regional and international systems for the gathering and dissemination of relevant information on technology transfer and cooperation and technical and scientific cooperation, including the establishment of effective networks of electronic databases of relevant technology, has been recognized as a tool that facilitates the transfer of technology for the conservation and sustainable use of biodiversity, and of technology that makes use of genetic resources. Activities under this programme element should build on existing initiatives and programmes with a view to maximize synergy and avoid the duplication of work. At the international level, these systems, using the clearing-house mechanism, would provide, *inter alia*, information on the availability of relevant technologies, including their technical parameters, economic and social aspects, data on patents (owners and date of expiration), models of contracts and associated legislation; the identified technology needs of

Parties as well as case-studies and best-practices on measures and mechanisms to create enabling environments for technology transfer and technology cooperation.

Objective: *National, regional and international information systems for technology transfer and cooperation provide comprehensive information of relevance to foster technology transfer and technology cooperation*

Operational target 1: *The clearing-house mechanism is a central mechanism for the exchange of information on and facilitation of technology transfer and technical and scientific cooperation relevant for the Convention on Biological Diversity, providing access to information on national technology needs, available relevant proprietary technologies and technologies in the public domain, including access to databases of existing technologies, and information on best-practices to create enabling environments for technology transfer and technology cooperation*

Activities

2.1.1. *Develop provisional web pages and print media that provide access to information on relevant initiatives and databases for the transfer of technology and for technology cooperation*

Main actor: the Secretariat of the Convention on Biological Diversity in collaboration with relevant organizations and initiatives

Timeframe for implementation: post seventh meeting of the Conference of the Parties

2.1.2. *Development of proposals to enhance the clearing-house mechanism, including its national nodes, as a key mechanism for exchange of information on technologies, for facilitating and promoting technology transfer and cooperation and for the promotion of technical and scientific cooperation relevant for the conservation and sustainable use of biodiversity, and for facilitating access to technologies that make use of genetic resources*

2.1.3. *Development of advice and guidance on the use of new information exchange formats, protocols and standards to enable interoperability among relevant existing systems of national and international information exchange, including technology and patent databases*

Main actor: the Secretariat of the Convention on Biological Diversity in collaboration with Parties, the informal advisory committee of the clearing house mechanism and relevant organizations and initiatives, with support from GEF and from relevant international funding organizations as appropriate

Timeframe for implementation: the eighth meeting of the Conference of the Parties

2.1.4. *Implementation of proposals for enhancing the clearing-house mechanism as a central mechanism for exchange of information on technologies, for facilitating and promoting technology transfer and for the promotion of technical and scientific cooperation as adopted by the Conference of the Parties, in full synergy with similar initiatives and mechanisms of other Conventions and international organizations*

Main actor: the Secretariat of the Convention on Biological Diversity in collaboration with the informal advisory committee of the clearing house mechanism, Parties and relevant organizations and initiatives with support from GEF and from relevant international funding organizations as appropriate. This arrangement may be reviewed after a reasonable trial period.

Timeframe for implementation: the ninth meeting of the Conference of the Parties, then ongoing

Operational target 2: *Opportunities to establish or strengthen national information systems for technology transfer and technology cooperation are identified, with consultation of and input from relevant stakeholders*

Activities:

2.2.1. *Compilation and synthesis of information on national and regional information systems for technology transfer and cooperation, including the identification of best-practices and of needs for further improvements, in particular in regard to the accessibility of such systems for all relevant stakeholders, especially indigenous and local communities, as well as information on capacity and human resources available and needed*

Main actor: the Secretariat of the Convention on Biological Diversity, with input from Parties and in cooperation with relevant organizations as appropriate, and with support from GEF and from relevant international funding organizations as appropriate

Timeline for implementation: the eighth meeting of the Conference of the Parties, then ongoing

2.2.2. *Develop or strengthen national information systems of technology transfer and technology cooperation*

Main actors: Parties in cooperation with the Secretariat and relevant organizations as appropriate, and with support from GEF and from relevant international funding organizations as appropriate

Timeline for implementation: the eighth meeting of the Conference of the Parties

Operational target 3: National information systems for technology transfer and technology cooperation, especially those functioning through national clearing-house mechanisms, are established or strengthened, are effectively linked to international information systems and contribute effectively to technology transfer, dissemination and absorption and to the exchange of technologies, including south-south technology transfer.

Activities:

2.3. *Development or improvement of national systems of information exchange on technology transfer and technology cooperation, in consultation with relevant stakeholders, with a view to foster dialogue between technology holders and prospective users through, inter alia, the application of ways and means to ensure:*

- (a) *Effective linkages with existing national, regional and international information systems;*
- (b) *Accessibility and adaptability of such systems by indigenous and local communities and all relevant stakeholders;*
- (c) *Information on local needs for adaptation, and related capacity, to be effectively channeled into national systems*

Main actors: Parties to the Convention on Biological Diversity, in consultation with relevant national stakeholders, with support by relevant organizations and well as with support from GEF and from relevant international funding organizations as appropriate

Timeline for implementation: the ninth meeting of the Conference of the Parties

Operational target 4: Promote the development of regional and international information systems to facilitate technology transfer and technological cooperation

Activities:

2.4.1. *Initiate and conduct consultations among relevant organizations and stakeholders with a view to identify options to further regional and international cooperation in the development or improvement of information systems on technology transfer and technology cooperation*

Main actors: Relevant organizations and stakeholders with support by national, regional and international donors, and by national governments with support from GEF and from relevant international funding organizations as appropriate

2.4.2. *Compilation and synthesis of information on regional and international information systems, including best-practices and opportunities for further development and make this information available through the clearing-house mechanism and other means as appropriate*

Main actor: the Secretariat of the Convention on Biological Diversity with input from Parties and in cooperation with relevant organizations as appropriate with support from GEF and from relevant international funding organizations as appropriate

Timeline for implementation: the eighth meeting of the Conference of the Parties, then ongoing

2.4.3 *Identify and implement measures to develop or strengthen information systems of technology transfer and technology cooperation, including at the local level*

Main actor: Parties in cooperation with the Secretariat of the Convention, relevant organizations as appropriate, and with support from GEF as well as from relevant international funding organizations as appropriate

Timeline for implementation: ongoing

PROGRAMME ELEMENT 3: CREATING ENABLING ENVIRONMENTS

Creating enabling environments refers to activities of governments at national and international levels that aim to create an institutional, administrative, legislative and policy environment conducive to private and public sector technology transfer and to the absorption of transferred technology, and that aim to remove technical, legislative and administrative barriers to technology transfer and technology absorption, inconsistent with international law. Multi-faceted enabling environments in both developed and developing countries are a necessary tool to promote and facilitate the successful and sustainable transfer of technologies for the purpose of the Convention on Biological Diversity. Such government activities may, *inter alia*, focus on: national institutions for research and technology innovation; legal and institutional underpinnings of technology markets both at national and international levels; and legislative institutions that introduce codes and standards, reduce risk and protect intellectual property rights, whenever they may be inconsistent with international law.

Objective: *To identify and put in place institutional, administrative, legislative and policy frameworks conducive to private and public sector technology transfer and cooperation, taking also into account existing work of relevant international organizations and initiatives.*

Operational target 1: *Development of guidance and advice for the application of options on measures and mechanisms to facilitate access to and transfer of technologies in the public domain and to proprietary technologies of relevance for the Convention on Biological Diversity, and to foster technology cooperation*

Activities:

3.1.1. *Preparation of technical studies that further explore and analyse the role of intellectual property rights in technology transfer in the context of the Convention on Biological Diversity and identify potential options to increase synergy and overcome barriers to technology transfer and cooperation, consistent with paragraph 44 of the Johannesburg Plan of Implementation*

Main actors: Secretariat of the Convention on Biological Diversity, WIPO and other relevant organizations;

Timeline for implementation: the eighth meeting of the Conference of the Parties

3.1.2. *Compilation and synthesis of information and preparation of guidance on institutional, administrative, legislative and policy frameworks that facilitate access to, adaptation and*

absorption of technologies in the public domain and to proprietary technologies, especially by developing countries and countries with economies in transition, and in particular, on measures and mechanisms that:

- (a) Foster an enabling environment in developing countries for cooperation as well as the transfer, absorption and diffusion of relevant technologies;*
- (b) Provide, in accordance with existing international obligations, incentives to private-sector actors as well as public research institutions in developed country Parties, to encourage cooperation and transfer of technologies to developing countries, through, e.g., technology transfer programmes or joint-ventures;*
- (c) Promote and advance priority access for Parties to the results and benefits arising from technologies based upon genetic resources provided by those Parties, in accordance with Article 19. 2 of the Convention, and to promote the effective participation in related technological research by those Parties;*
- (d) Promote innovative approaches and means of technology transfer and cooperation such as Type 2 partnerships, in accordance with the outcome of the World Summit on Sustainable Development, or transfers among actors.*

Main actor: the Secretariat of the Convention on Biological Diversity, assisted by the AHTEG on Technology transfer and cooperation and based on input from Parties and relevant international organizations

Timeline for implementation: the eighth meeting of the Conference of the Parties, then ongoing

Operational target 2: *Development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation, as well as access to, adaptation, and absorption of technologies in the public domain and to proprietary technologies of relevance for the Convention on Biological Diversity, and to foster technical and scientific cooperation, as consistent with national priorities and existing international obligations*

Main actors: national governments in collaboration with relevant national and international stakeholder, with support of relevant international organization as well as with support from GEF, from relevant international funding organizations and the Secretariat as appropriate

Activities:

Phase I (preparatory phase):

- 3.2.1. Identification of relevant stakeholders and sources on information***
- 3.2.2. Design and implement mechanisms for effective stakeholder involvement and participation;***
- 3.2.3. As appropriate, review, in collaboration with relevant stakeholders, existing policies and programmes and identify possible impediments to the transfer of technology of relevance for the Convention on Biological Diversity, capacity-building needs and priority areas for policy action. The study should also identify the necessary steps, if any, to improve accordingly national biodiversity strategy and action plans, national research and technology strategies and other policy planning tools;***
- 3.2.4. Identify and support community-based opportunities and initiatives for the development of sustainable livelihood technologies for local application and facilitate the pursuit of those opportunities at the local community level.***

Timeline for implementation: the eighth meeting of the Conference of the Parties, with further reviews as appropriate

Phase II

Consistent with relevant international obligations and national priorities, and in synergy with activities foreseen under the programme areas and cross-cutting issues of the Convention:

- 3.2.5. *Implementation of institutional, administrative, legislative and policy measures and mechanisms to foster an enabling environment in developing countries and countries with economies in transition that would facilitate access to, adaptation and absorption of relevant technologies, and that would provide north-south and south-south cooperation;*
- 3.2.6. *Adoption of legal and regulatory frameworks where appropriate and provision of incentives to private-sector actors as well as public research institutions in developed country Parties, with a view to encourage the transfer of technologies to developing countries and countries with economies in transition;*
- 3.2.7. *Encourage and facilitate community-to-community sharing and transferring of knowledge and technologies through such means as community personnel exchanges, workshops and publications;*
- 3.2.8. *Promotion and advancement of priority access for Parties to the results and benefits arising from technologies based upon genetic resources provided by those Parties, in accordance with Article 19, paragraph 2, of the Convention, and to promote the effective participation in related technological research by those Parties;*
- 3.2.9. *Encouragement of joint research programmes with associated jointly held patents or other protection of intellectual property rights as well as other mechanisms to facilitate transfer of technologies that make use of genetic resources*
- 3.2.10. *Promotion of cooperation and technology transfer through innovative approaches such as type 2 partnerships or transfers among actors*
- 3.2.11. *Strengthening of national research institutions for the adaptation and further development of imported technologies, consistent with their transfer agreement and international law, as well as the development and use of environmentally sound technologies;*
- 3.2.12. *Dissemination of related experiences at national and international levels.*

Timeline for implementation: the ninth meeting of the Conference of the Parties, then ongoing review as appropriate

PROGRAMME ELEMENT 4: CAPACITY-BUILDING AND ENHANCEMENT

The building or enhancement of technical, scientific, institutional and administrative capacity is an issue of cross-cutting importance for the effective and timely conduct of technology assessments, for the building and strengthening of national or regional technology information systems and for the creation of enabling environments for technology transfer and cooperation. Activities under this programme element should build on existing initiatives and programmes, for instance, under other conventions and international agreements, with a view to maximize synergies and avoid the duplication of work. The long-term benefits arising from technology transfer should be understood as investments by relevant institutions and initiatives.

Objective: *Technical, scientific, institutional and administrative capacity is adequate for the effective cooperation, transfer, diffusion and absorption of technology as well as technical and scientific cooperation.*

Operational target 1: *Technical, scientific, institutional and administrative capacity is adequate for the effective and timely conduct of national technology assessments*

Activities:

4.1. Financial and technical support and training is provided by relevant international, regional and national organizations and initiatives as appropriate for the building or enhancement of capacity for the effective and timely conduct of national technology assessments;

Main actors: International, regional and national organizations and funds as appropriate

Timeline for implementation: ongoing, starting at the seventh meeting of the Conference of the Parties

Operational target 2: *Technical, scientific, institutional and administrative capacity is adequate for the development or strengthening and effective operation of national, regional and international information systems for technology transfer and technology cooperation of relevance for the Convention on Biological Diversity*

Activities

4.2.1 Assessment of capacity-building needs and opportunities for the development or strengthening and effective operation of national information systems for technology transfer and technology cooperation, including risk analysis and impact assessment

Main actors: Developing country Parties and Parties with economies in transition, in collaboration with relevant national and international stakeholder and with support of relevant international organization as appropriate as well as with support from GEF and relevant international funding organizations

Timeline for implementation: the eighth meeting of the Conference of the Parties

4.2.2 Financial and technical support as well as training is provided to improve the capacity of national systems of information gathering and dissemination with regard to needs and opportunities for technology transfer, in particular with regard to capacity for the effective application and use of electronic information technologies, in full synergy with existing initiatives and programmes

Main actors: GEF, international, regional and national organizations and funds as appropriate

Timeline for implementation: ongoing, starting at the eighth meeting of the Conference of the Parties

Operational target 3: *Technical, scientific, institutional and administrative capacity is adequate for the review of national policies and programmes and the identification of barriers for the transfer of technology of relevance for the Convention on Biological Diversity, capacity-building needs and priority areas for policy action.*

Activities:

4.3 Financial and technical support and training is provided by relevant international, regional and national organizations and initiatives as appropriate for the building or enhancement of capacity for the review of existing policies and programmes and the identification of possible impediments to cooperation and the transfer of technology of relevance for the Convention on Biological Diversity, of capacity-building needs and priority areas for policy action.

Main actors: Developing country Parties and Parties with economies in transition, in collaboration with relevant national and international stakeholder and with support of relevant international organization as appropriate as well as with support from GEF and from relevant international funding organizations

Timeline for implementation: the eighth meeting of the Conference of the Parties, then ongoing

Operational target 4: *Technical, scientific, institutional and administrative capacity is adequate for the implementation of measures and mechanisms that create an environment conducive to private and public sector technology transfer and cooperation, and to the absorption of transferred technology*

4.4 Based on needs and priorities identified by countries, financial and technical support and training is provided by relevant international, regional and national organizations and

initiatives as appropriate to foster enabling environments for technology transfer and cooperation, and in particular with regard to:

- (a) Building policy, legal, judicial and administrative capacity;*
- (b) Facilitating access to relevant proprietary technologies, consistent with Article 16.2;*
- (c) Providing other financial and non-financial incentives for the diffusion of relevant technologies;*
- (e) Building capacities of, and empowering, relevant stakeholders, especially indigenous and local communities, with respect to access to and use of relevant technologies;*
- (f) Providing financial and technical support and training to improve the capacity of developing countries and countries with economies in transition national research institutions for the development of technologies as well as for adaptation, dissemination and the further development of imported technologies consistent with their transfer agreement and international law including through fellowships and international exchange programmes;*
- (g) Supporting the development and operation of regional or international initiatives to assist technology transfer and cooperation as well as scientific and technical cooperation, particularly those initiatives designed to facilitate south-south cooperation and south-south joint development of new technologies*

Main actors: GEF, international, regional and national organizations and funds as appropriate

Timeline for implementation: ongoing, starting at the seventh meeting of the Conference of the Parties

IX/6. Ecosystem approach: further elaboration, guidelines for implementation and relationship with sustainable forest management

The Subsidiary Body on Scientific, Technical and Technological Advice

1. Welcomes the report of the Expert Meeting on the Ecosystem Approach (UNEP/CBD/SBSTTA/9/INF/4);

2. Expresses its appreciation to the Government of the Netherlands for its financial support of the Expert Meeting and to the co-chairs and all the members of the Expert Group for their contributions.

3. Recommends that the Conference of the Parties:

(a) Notes that there has been significant experience in implementing the ecosystem approach by some Parties operating under the Convention, as well as experience in implementation of similar approaches to management under other national, regional and international processes, but that additional efforts are needed to ensure effective implementation of the approach by all Parties and other Governments. The scale of application of the ecosystem approach should be decided within countries according to their needs and circumstances;

(b) Agrees that the priority at this time should be on facilitating the implementation of the ecosystem approach as a primary framework for addressing the three objectives of the Convention in a balanced way, and that a potential revision of the principles of the ecosystem approach should only take place at a later stage, when the application of the ecosystem approach has been more fully tested;

(c) Endorses the implementation guidelines and annotations to rationale as outlined in annex I to this document, and agrees that they provide a good basis for moving towards implementation of the ecosystem approach, keeping in mind that in applying the ecosystem approach, all principles need to be considered, with appropriate weight given to each, in accordance with local conditions;

(d) Welcomes the progress in developing the practical principles, operational guidance and associated instruments for sustainable use (Addis Ababa Principles), which are based on the ecosystem approach as their overarching conceptual framework;

(e) Notes the relevance of the conceptual framework of the Millennium Ecosystem Assessment in supporting the implementation of the ecosystem approach.

(f) Notes that sustainable forest management, as developed within the framework established by the *Rio Forest Principles*, can be considered as a means of applying the ecosystem approach to forests (annex II). Further, there is potential for the tools developed under sustainable forest management to be used to help implement the ecosystem approach. These tools include *inter alia* the criteria and indicators developed under various regional and international processes, national forest programmes, “model forests” and certification schemes (as relating to decision VI/22 on forest biodiversity). There is substantial potential for mutual learning among those implementing both the ecosystem approach and sustainable forest management;

(g) Notes that, in addition to sustainable forest management, many other existing approaches, which are also relevant to other environmental conventions, including “ecosystem based management”, “integrated river-basin management”, “integrated marine and coastal area management”, and “responsible fisheries approaches”, are consistent with the application of the Convention’s ecosystem approach, and support its implementation in various sectors or biomes. Implementation of the ecosystem approach in various sectors can be promoted by building upon the approaches and tools developed specifically for such sectors.

(h) Requests the Executive Secretary, in collaboration with Parties and relevant international and regional organizations, to facilitate the undertaking of the following activities, and report on progress

made to the Subsidiary Body on Scientific, Technical and Technological Advice prior to the eighth meeting of the Conference of the Parties:

- (i) Undertake an analysis of the range of existing tools and approaches, that are consistent with the Convention's ecosystem approach, but operate on different levels and belong to a variety of sectors/communities, and are applied in programmes of work of the Convention on Biological Diversity, in order to learn from their experiences and build upon their approaches, and identify any gaps in the coverage of such tools;
- (ii) Where needed, facilitate development of new tools and techniques to enable the implementation of the ecosystem approach, and in collaboration with appropriate regional and international organisation develop tools specific to each sector and biome;
- (iii) Continue collection of case-studies at national, sub-regional, regional and international level on the implementation of the ecosystem approach, and develop, in cooperation with the clearing-house mechanism, a database of case-studies, searchable by biome/ecoregion and sector;
- (iv) Make the above widely available to Parties through the development of a web-based "sourcebook" for the ecosystem approach, accessible through the clearing-house mechanism. This sourcebook should be non-prescriptive and allow adaptation to differing regional, national and local needs. It should be prepared in a language that is brief, non-technical and simple, ensuring its accessibility to practitioners working to implement the ecosystem approach on the ground. A supporting summary explanation of the ecosystem approach will also be prepared. It should be developed in collaboration with other relevant organizations, peer reviewed and field tested as appropriate, and made available through the clearing-house mechanism, in hard copy and on CD-Rom, and periodically revised.

(i) *Recommends* that Parties and other Governments continue or start implementation of the ecosystem approach, including the implementation guidelines and annotations to the rationale as outlined in annex I, and:

- (i) Provide feedback on their experiences to the Executive Secretary and to other Parties, including by submitting further annotated case-studies and lessons learned for dissemination through the clearing-house mechanism;
- (ii) Provide technical input to the development and field testing of the "sourcebook";
- (iii) Promote the application of the ecosystem approach in all sectors with potential impacts on biodiversity and ecosystems, as well as inter-sectoral integration;
- (iv) Enhance and facilitate the sharing of experiences and expertise through approaches such as undertaking workshops to bring together experts and practitioners from different sectors and approaches;
- (v) Promote better understanding of the ecosystem approach through programmes of communication, education and public awareness;

(j) *Requests* that the Executive Secretary collaborate with the Coordinator and Head of the United Nations Forum on Forests Secretariat and members of the Collaborative Partnership on Forests in order to further integrate the concepts of ecosystem approach and sustainable forest management, in particular with respect to:

- (i) Considering, within the ecosystem approach, lessons learned from application of tools specific to sustainable forest management, as part of the effort to move the ecosystem approach towards an increasingly outcome-oriented approach;
- (ii) Considering, within sustainable forest management, placing greater emphasis on:
- Better cross-sectoral integration and inter-sectoral collaboration;
 - The interactions between forests and other biome/habitat types within a landscape; and Biodiversity conservation issues, in particular through continued development of criteria, indicators and certification programmes (as relating to decision VI/22 on forest biodiversity), and including protected areas;
- (k) *Requests* the Executive Secretary, in collaboration with Parties and relevant international and regional organisations, to assess the implementation of the ecosystem approach in light of the experiences gained from the activities under paragraphs (h), (i) and (j) above for the consideration of the Subsidiary Body on Scientific, Technical and Technological Advice prior to the ninth meeting of the Conference of the Parties.

*Annex I***REFINEMENT AND ELABORATION OF THE ECOSYSTEM APPROACH, BASED ON ASSESSMENT OF EXPERIENCE OF PARTIES IN IMPLEMENTATION****A. Further guidance on the implementation of the ecosystem approach principles**

1. The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. The application of the ecosystem approach will help to reach a balance of the three objectives of the Convention: conservation; sustainable use; and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. In addition the ecosystem approach has been recognized by the World Summit on Sustainable Development as an important instrument for enhancing sustainable development and poverty alleviation.
2. The ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organisation, which encompass the essential structure, processes, functions and interactions among organisms and their environment. It recognises that humans, with their cultural diversity, are an integral component of many ecosystems.
3. The ecosystem approach provides an integrating framework for implementation of objectives of the Convention on Biological Diversity. The approach incorporates three important considerations:
 - (a) Management of living components is considered alongside economic and social considerations at the ecosystem level of organisation, not simply a focus on managing species and habitats;
 - (b) If management of land, water, and living resources in equitable ways is to be sustainable, it must be integrated and work within the natural limits and utilize the natural functioning of ecosystems;
 - (c) Ecosystem management is a social process. There are many interested communities, which must be involved through the development of efficient and effective structures and processes for decision-making and management.
4. The approach is an overall methodological framework for supporting decisions in policy-making and planning, within which those implementing the Convention can develop more specific approaches appropriate to their particular circumstances. The ecosystem approach is a tool that contributes to the implementation of various issues addressed under the Convention, including the work on, *inter alia*, protected areas and ecological networks. There is no single correct way to achieve the ecosystem approach to management of land, water, and living resources. The underlying principles can be translated flexibly to address management issues in different social contexts. Already, there are sectors and governments that have developed sets of guidelines that are partially consistent, complementary or even equivalent to the ecosystem approach (e.g. the Code for Responsible Fisheries, the Sustainable Forest Management approach, adaptive forest management).
5. There are a number of options for implementing the ecosystem approach. One is the incorporation of the principles into the design and implementation of national biodiversity strategies and action plans and regional strategies. Others include incorporation of the ecosystem approach principles into policy instruments, mainstreaming in planning processes, and sectoral plans (e.g., in forest, fisheries, agriculture). In addition, Parties and the various bodies of the Convention on Biological Diversity should be encouraged to work to achieve synergies between the ecosystem approach and the various programmes of work of the Convention on Biological Diversity, as well as promoting linkages with other international initiatives. To implement the ecosystem approach, countries should incorporate its principles or identify pre-existing, consistent or equivalent guidelines, in the appropriate institutional, legal and budgetary channels. Work by Convention bodies and other relevant organizations should be focused on supporting local and regional efforts as a contribution to achieving the Millennium Development Goals.
6. It should be stressed that in applying the ecosystem approach, all its principles need to be considered in a holistic way, and appropriate weight given to each, according to local circumstances.

7. Notwithstanding the need for implementation to be designed to fit with the particular circumstances of the relevant problems, there is strong potential for shared experiences and expertise between ecosystems and countries. The clearing-house mechanism established under Article 18 should be the primary focus for facilitating that cooperation. A solid and broad understanding of the principles, their intentions and their consequences, is an essential condition for their application. A communication strategy for promoting the ecosystem approach to relevant target groups, within and outside the conservation sector, can be a useful tool.

8. The donor community, like governments, while noting the value of the ecosystem approach in fostering better ecosystem stewardship, should also be encouraged to be flexible in promoting its application in setting priorities and funding decisions, to allow for other perspectives, and different capacities to respond to the principles.

9. After assessing the experience of Parties in implementing the ecosystem approach decisions of the Conference of the Parties, it was noted that while the principles were not always precisely worded expressions of the concepts they incorporated, they nevertheless reflected the meaning of important concepts. The experience of Parties did not suggest a need for change to the decisions of the Conference of the Parties, but simply for the provision of additional advice and elaboration to overcome any problems of clarity and interpretation.

10. With this in mind, the following text and table 1 provide some suggestions on approaches for implementation and implementation support. These include annotations to the rationale, implementation guidelines for each principle and clarification of crosscutting aspects of the ecosystem approach.

B. Additional explanatory notes on cross-cutting issues related to operational guidance

11. In applying the operational guidance of the ecosystem approach ecosystem approach, the following cross-cutting issues need to be considered.

Initiating the approach

12. When initiating the ecosystem approach the first task is to define the problem that is being addressed. In doing so the scope of the problem and the task to be undertaken has to be well specified. The strategy to be followed to promote the ecosystem approach has to be clearly defined with contingencies for unforeseen situations incorporated into the strategy. The approach should consider all principles as a package but depending upon the task at hand emphasis on particular principles may be warranted. A collective ownership for the vision, strategy and parameters for the ecosystem approach relevant to the task has to be developed, communicated, and facilitated among partners and sponsors. Collectively developing the overarching goals, objectives, targets for the exercise is important before applying the ecosystem approach.

Capacity-building and collegiate will

13. To apply the ecosystem approach successfully it is critical to investigate what resources and sponsorship are required to undertake the exercise. This can be in the form of capacity-building and fostering collegiate will.

14. Collegiate will can be in terms of community partnerships, stakeholder engagement, political and institutional will, and the commitment of donors or sponsors. An important consideration is the length of time such collegiate will is required; that is, it may be required in the initiation phase, assessment phase or the phase associated with implementation of outcomes. Examples of where the ecosystem approach has been compromised can be from a loss of allegiance from one or more of the community, other stakeholders, the political establishment and institutions, or sponsors and donors.

15. Capacity-building is also important for the success of the ecosystem approach. Adequate financial support and appropriate infrastructure support are important requirements to the success of an approach. So too is access to suitable expertise and the sharing of knowledge and experience. In undertaking the ecosystem approach it is useful to build from lessons learnt from other undertakings

applying the ecosystem approach. Technology, including decision support tools and inventory systems, which have been developed in other applications of the ecosystem approach, may be transferable or can be adapted.

Information, research and development

16. The collection of resource, biophysical, social, and economic information is important to the successful completion of the ecosystem approach. Research and development is needed to target strategic gaps in knowledge that are important for addressing the exercise at hand. Knowledge derived from research and information from other sources has to be integrated and packaged into information products (including decision-support systems) that allow and provide for interpretation, and which facilitate their use in applying the ecosystem approach. Information products are necessary for communicating with stakeholders, planners, managers and decision makers. Consideration should be given to enhancing the access of stakeholders to information because the more transparent the decision-making is, based on information at hand, the better the ownership of the resultant decisions between partners, stakeholders and sponsors. Priorities for research and development are likely to be clearer once the ecosystem approach begins to be applied and implementing actions are put in place.

Monitoring and review

17. Monitoring and review are crucial components in implementing the ecosystem approach the ecosystem approach. They allow a responsive and adaptive management capability to be developed. Monitoring and review are also useful in reporting performance and the resultant outcomes of the approach. Indicators of performance should be defined, developed and implemented. Appropriate monitoring and auditing systems need to be implemented to support reporting on indicators of performance. Periodic reviews of these indicators need to be undertaken to assess performance and whether adaptive management needs to be applied. Strategies, practices and processes may need to be modified depending upon the findings from monitoring and auditing.

Governance

18. Good governance is essential for successful application of the ecosystem approach. Good governance includes sound environmental, resource and economic policies and administrative institutions that are responsive to the needs of the people. Robust and sound resource management systems and practices are required to support these policies and institutions. Decision-making should account for societal choices, be transparent and accountable and involve society. Accountability for making decisions has to be placed at the appropriate level that reflects that community of interest. For example strategic landuse planning and management might be taken by central government, operational decisions taken by local government or management agency, whereas decisions associated with the sharing of benefits could be taken by a community organisation.

19. Good governance at all levels is fundamental for achieving sustainable use and conservation of biodiversity. It is important to ensure intersectoral cooperation. There is a need to integrate the ecosystem approach into agriculture, fisheries, forestry and other production systems that have an effect on biodiversity. Management of natural resources, according to the ecosystem approach, calls for increased intersectoral communication and cooperation at a range of levels (government ministries, management agencies).

Table 1: The 12 Principles of the ecosystem approach and their rationale (decision V/6 of the Conference of the Parties, <http://www.biodiv.org/decisions/default.asp?lg=0&dec=V/6>), suggested annotations to the rationale and implementation guidelines.

Principle 1: The objectives of management of land, water and living resources are a matter of societal choice.

Rationale

Different sectors of society view ecosystems in terms of their own economic, cultural and societal needs. Indigenous peoples and other local communities living on the land are important stakeholders and their rights and interests should be recognized. Both cultural and biological diversity are central components of the ecosystem approach, and management should take this into account. Societal choices should be expressed as clearly as possible. Ecosystems should be managed for their intrinsic values and for the tangible or intangible benefits for humans, in a fair and equitable way.

Annotations to the rationale:

The objectives for managing land, water, and living resources is a matter of societal choice, determined through negotiations and trade-offs among stakeholders having different perceptions, interests, and intentions. In this regard it should be noted that:

- *Human society is diverse in the kind and manner of relationships that different groups have with the natural world, each viewing the world around them in different ways and emphasising their own economic, cultural, and societal interests and needs.*
- *All relevant sectors of society need to have their interests equitably treated, which may involve providing for different outcomes in separate locations or at different times.*
- *It is also necessary to ensure that the needs of future generations and the natural world are adequately represented.*
- *Given this diversity, good decision-making processes that provide for negotiations and trade-offs are necessary to establish broadly acceptable objectives for the management of particular areas and their living resources.*
- *Good decision-making processes incorporate the following characteristics:*
 - *All interested parties (particularly including indigenous and local communities) should be involved in the process,*
 - *It needs to be a clear how decisions are reached and who the decision-maker(s) is(are),*
 - *The decision-makers should be accountable to the appropriate communities of interest,*
 - *The criteria for decisions should be appropriate and transparent, and*
 - *Decisions should be based on, and contribute to, inter-sectoral communication and coordination.*
- *Good decisions depend on those involved having access to accurate and timely information and the capacity to apply this knowledge.*

Implementation guidelines

- 1.1 Involve all stakeholders (interested parties) (including indigenous and local communities) in:
 - clearly articulating, defining and agreeing upon the goals of management
 - defining problems
 - making choices (in principle 12).
- 1.2 There need to be clearly defined boundaries (in time and space) for the management unit that is the subject of the societal choice process.
- 1.3 Ensure that those stakeholders that cannot directly represent themselves (e.g. future generations, the natural world) are adequately represented by someone else.
- 1.4 Ensure that all stakeholders have an equitable capacity to be effectively involved, including through ensuring equitable access to information, ability to participate in the processes, etc.
- 1.5 Ensure that the decision-making process compensates for any inequities of power in society, in order to ensure that those who are normally marginalised (e.g. women, the poor, indigenous people) are not excluded or stifled in their participation.
- 1.6 Determine who the decision-makers are for each decision, how the decisions will be taken (what process will be used), and what are the limits on the discretion of the decision-maker (e.g. what are the criteria for the decision in law, what is the overall policy guidance within which the decision must fit, etc).
- 1.7 Ensure that the recognition of stakeholder interests occurs within the full range of decisions over time and space and levels. In doing so, however, ensure that “stakeholder fatigue” does not develop, by incorporating known stakeholder views into future decisions, and allowing efficient stakeholder input.
- 1.8 Where possible, use existing societal mechanisms, or build new mechanisms that are compatible with existing or desired societal conditions.
- 1.9 Ensure that decision-makers are accountable to the appropriate communities of interest.
- 1.10 Develop the capacity to broker negotiations and trade-offs, and manage conflicts, among

relevant stakeholder groups in reaching decisions about management, use and conservation of biological resources.

- 1.11 There need to be mechanisms in place to ensure that, once an appropriate societal choice has been made, the decision will be able to be implemented over the long term, i.e. policy, legislative and control structures need to be in place.

Principle 2: Management should be decentralized to the lowest appropriate level.

Rationale:

Decentralized systems may lead to greater efficiency, effectiveness and equity. Management should involve all stakeholders and balance local interests with the wider public interest. The closer management is to the ecosystem, the greater the responsibility, ownership, accountability, participation, and use of local knowledge.

Annotations to the rationale:

Decisions should be made by those who represent the appropriate communities of interest, while management should be undertaken by those with the capacity to implement the decisions. In this regard it should be noted that:

- *There are usually many communities-of-interest in ecosystem management. These can be compatible, complimentary, or contradictory. It is important to ensure that the level of decision-making and management selected maintains an appropriate balance among these interests.*
- *Often, but not always, the closer the decision-making and management are to the ecosystem, the greater the participation, responsibility, ownership, accountability and use of local knowledge will be, all of which are critical to the success of management.*
- *Because there are several levels of interests with people who have varying capacities to address different aspects of ecosystem management, there are often multiple decision-makers and managers with different roles for any individual place or resource.*
- *Decisions made by local resource managers are often affected by, or even subordinate to, environmental, social, economic and political processes that lie outside their sphere of influence, at higher levels of organisation. Therefore there is a need for mechanisms to coordinate decisions and management actions at a number of different organisational levels.*

Implementation guidelines

- 2.1 The multiple communities of interest should be identified, and decisions about particular aspects of management assigned to the body that represents the most appropriate community of interest. If necessary, management functions/decisions should be subdivided. For example, strategic decisions might be taken by central government, operational decisions by a local government or local management agency, and decisions about allocation of benefits between members of a community by the community itself.
- 2.2 The potential adverse effects of fragmented decision-making and management responsibilities should be compensated for by:
- ensuring that decisions are appropriately nested and linked
 - sharing information and expertise
 - ensuring good communication between the different management bodies
 - presentation of the overall combination of decisions/management to the community in an understandable and consolidated form so they can effectively interact with the overall system.
 - supportive relationships between the levels.
- 2.3 Good governance arrangements are essential, particularly:
- clear accountabilities
 - accountabilities of the necessary authorities
 - accountabilities of competent bodies or persons
- Note that this is not a complete enough list, and there seems no good reason to particularly identify these.
- 2.4 Achieving an appropriate level of decentralisation requires taking decisions at a higher level to create an enabling and supportive environment, as well as a commitment to devolve those decision-making responsibilities that are currently situated at too high a level.
- 2.5 In choosing the appropriate level of decentralisation, the following are relevant factors that should be taken into account in choosing the appropriate body. .
- whether the body represents the appropriate community of interest
 - whether the body has a commitment to the intent of the function
 - whether the body has the necessary capacity for management

- efficiency (e.g. by moving the function to a higher level you may have sufficient work to allow maintenance of the necessary level of expertise to do the function efficiently and effectively).
- whether the body has other functions which represent a conflict of interest
- the effect on marginalised members of society (e.g. women, marginalised tribal groups)

In some cases problems could be corrected, such as through capacity-building. If no appropriate body is available at the level, a new body might be created, or an existing body modified, or a different level chosen.

- 2.6 Where functions are to be moved to another level, it is necessary to ensure that the body receiving the responsibility has sufficient capacity to fulfil that responsibility (e.g. resources, systems, authority), and that any risks arising from the transition can be managed. This means doing capacity-building if necessary to allow the decentralisation to occur.

Institutional arrangements are the key. If you don't have the institutional structure that supports and coordinates the decision-making authorities then their work is worthless.

Principle 3: Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

Rationale:

Management interventions in ecosystems often have unknown or unpredictable effects on other ecosystems; therefore, possible impacts need careful consideration and analysis. This may require new arrangements or ways of organization for institutions involved in decision-making to make, if necessary, appropriate compromises.

Annotations to the rationale:

Ecosystems are not closed systems, but rather open and often connected to other ecosystems. This open structure and connectedness of ecosystems ensures that effects on ecosystem functioning are seldom confined to the point of impact or only to one system. In this regard it should be noted that:

- *The effects of management interventions, or decisions not to intervene, are therefore not confined solely to the point of impact.*
- *The effects between ecosystems are frequently non-linear and will likely have associated time-lags.*
- *Management systems need to be designed to cope with these issues. There is a need for this to reflect the fact that impacts are in both directions – into and out of a particular ecosystem. Not just adjacent and downstream, but those have other connections as well (e.g. systems linked by migratory species).*

Implementation guidelines

- 3.1 Natural resource managers, decision makers and politicians should consider the possible effects that their actions could have on adjacent and downstream ecosystems (river basins and coastal zones) so that effects inside and outside the ecosystem are determined.
- 3.2 Where impacts of management or use of one ecosystem has or is projected to have effects elsewhere, bring together relevant stakeholders and technical expertise to consider how best to minimise adverse consequences
- 3.3 Environmental impact assessment (EIAs), including strategic environmental assessments (SEAs) should be carried out for developments that may have substantial environmental impacts taking into account all the components of biological diversity. These assessments should adequately consider the potential offsite impacts. The results of these assessments, which can also include social impact assessment, should subsequently acted upon. When identifying existing and potential risks or threats to ecosystem, different scales need to be considered.
- 3.4 Establish and maintain national and regional monitoring systems to measure the effects of selected management actions across ecosystems. Plus matching management follow-up (cf 5.9)

Develop specific mechanisms (this needs to be broader and not push towards any particular mechanism such as a protocol) to address transboundary issues associated with shared ecosystems and with transboundary transfer of ecological impacts (e.g. air and water pollution).

Principle 4: Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:

- (a) Reduce those market distortions that adversely affect biological diversity;
- (b) Align incentives to promote biodiversity conservation and sustainable use;
- (c) Internalize costs and benefits in the given ecosystem to the extent feasible.

Rationale:

The greatest threat to biological diversity lies in its replacement by alternative systems of land use. This often arises through market distortions, which undervalue natural systems and populations and provide perverse incentives and subsidies to favour the conversion of land to less diverse systems. Often those who benefit from conservation do not pay the costs associated with conservation and, similarly, those who generate environmental costs (e.g. pollution) escape responsibility. Alignment of incentives allows those who control the resource to benefit and ensures that those who generate environmental costs will pay.

Annotations to the rationale:

Many ecosystems provide economically valuable goods and services and it is therefore necessary to understand and manage ecosystems in an economic context. Frequently economic systems do not make provision for the many, often, intangible values derived from ecological systems. In this regard it should be noted that:

- *Ecosystem goods and services are frequently undervalued in economic systems.*
- *Even when valuation is complete, most environmental goods and services have the characteristic of “public goods” in an economic sense, which are difficult to incorporate into markets.*
- *It is often difficult to introduce new uses of ecosystems, even where these are less impacting or provide wider benefits to society, because economic and social systems exhibit significant inertia, particularly where strong existing interests are affected by and resist change.*
- *Many stakeholders with strong interests in the ecosystem, but having limited political and economic influence, may be marginalized from the relevant economic systems.*
- *Where those who control use of the land do not receive benefits from maintaining natural ecosystems and processes, they are likely to initiate unsustainable land use practices from which they will benefit directly in the short term. To counter this more equitable sharing of benefits is advised.*
- *International, national and sub-national policies, laws and regulations, including subsidies may provide perverse incentives for unsustainable management of ecosystems. Economic systems therefore need to be redesigned to accommodate environmental management objectives.*
- *Addressing the issue of market distortions that adversely affect biodiversity will require establishing dialogue with other sectors.*

Deriving economic benefits is not necessarily inconsistent with attaining biodiversity conservation and improvement of environmental quality.

Implementation guidelines

- 4.1 Develop an understanding of the social and economic context of the issue to which the ecosystem approach is being applied
- 4.2 Apply appropriate practical economic valuation methodologies for ecosystem goods and services (direct, indirect and intrinsic values); and for the environmental impacts (effects or externalities).
- 4.3 Aim to reduce those market distortions that adversely affect biological diversity
- 4.4 Align economic and social incentives to promote biodiversity conservation and sustainable use.
- 4.5 Internalize costs and benefits in the given ecosystem to the extent feasible.
- 4.6 Evaluate the direct as well as indirect economic benefits associated with good ecosystem management including biodiversity conservation and environmental quality.
- 4.7 Enhance benefits of using biological diversity.
- 4.8 Ensure equitable sharing of costs and benefits.

Incorporate social and economic values of ecosystem goods and services into National Accounts, policy, planning, education and resource management decisions

Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.

Rationale:

Ecosystem functioning and resilience depends on a dynamic relationship within species, among species and between species and their abiotic environment, as well as the physical and chemical interactions within the environment. The conservation and, where appropriate, restoration of these interactions and processes is of greater significance for the long-term maintenance of biological diversity than simply protection of species.

Annotations to the rationale:

Biodiversity conservation and the maintenance of human wellbeing depend on the functioning and resilience of natural ecosystems. In this regard it should be noted that:

- *Ecosystem services – the benefits people obtain from ecosystems by way of resources, environmental regulation including, support of biospheric processes, inputs to culture, and the intrinsic values of the systems themselves – depend on maintaining and, where appropriate, restoring particular ecological structures and functions.*
- *Ecosystem functioning and resilience depend on inter-relationships within and among species, between species and their abiotic environments, and on the physical and chemical interactions within these environments.*
- *Given this complexity, management must focus on maintaining, and where appropriate restoring, the key structures and ecological processes (e.g., hydrological systems, pollination systems, habitats and food webs) rather than just individual species.*
- *Given that the loss of genetic diversity predisposes populations and species to local extinction, the conservation of ecosystem composition and structure requires monitoring of population sizes of vulnerable and economically important species.*

Management of ecosystem processes has to be carried out despite incomplete knowledge of ecosystem functioning.

Implementation guidelines

- 5.1 Improve understanding of the interrelationship among ecosystem composition, structure and function with respect to (i) human interaction, needs and values (including cultural aspects), (ii) conservation management of biodiversity, and (iii) environmental quality, integrity and vitality.
- 5.2 Determine and define conservation, social and economic objectives and goals that can be used to guide policy, management and planning using participatory processes.
- 5.3 Assess the extent to which ecosystem composition, structure can function contribute to the delivery of goods and services to meet the desired balance of conservation, social and economic outcomes.
- 5.4 Expand knowledge of the responses of ecosystems, in terms of changes in composition, structure and function, to both internally and externally induced stresses caused by, *inter alia*, human use, disturbance, pollution, fire, alien species, disease abnormal climatic variations (drought, flood) etc.
- 5.5 Develop and promote management strategies and practices that enable and ensure conservation of ecosystem service and take account of, or minimise, risks/threats to ecosystem function and structure.
- 5.6 Apply instruments to maintain and/or restore ecosystem service.
- 5.7 Where required, develop management strategies and practices to facilitate recovery of ecosystem structure and function (including threatened components) to generate or enhance ecosystem services and biodiversity benefits.
- 5.8 Develop and apply instruments that contribute to achievement of conservation management goals through a combination of managing protected area networks, ecological networks and areas outside of such networks to meet both short-term and long-term requirements and conservation outcome.
- 5.9 Monitoring population sizes of vulnerable and important species should be linked to a management plan that identifies appropriate response measures and actions.

Principle 6: Ecosystems must be managed within the limits of their functioning.

Rationale:

In considering the likelihood or ease of attaining the management objectives, attention should be given to the environmental conditions that limit natural productivity, ecosystem structure, functioning and diversity. The limits to ecosystem functioning may be affected to different degrees by temporary, unpredictable or artificially maintained conditions and, accordingly, management should be appropriately cautious

Annotations to the rationale:

There are limits to the level of demand that can be placed on an ecosystem while maintaining its integrity and capacity to continue providing the goods and services that provide the basis for human wellbeing and environmental sustainability. Our current understanding is insufficient to allow these limits to be precisely defined, and therefore a precautionary approach coupled with adaptive management, is advised. In this regard it should be noted that:

- *Just as there are limits to the demands (production, off-take, assimilation, detoxification) that can be made on ecosystems, so too there are limits to the amount of disturbance that ecosystems can tolerate, depending on the magnitude, intensity, frequency and kind of disturbance.*
- *These limits are not static but may vary across sites, through time, and in relation to past circumstances and events.*
- *Cumulative effects of interventions over time and space should be assessed when considering ecosystem limits.*
- *If these limits are exceeded, an ecosystem undergoes substantial change in composition, structure and functioning, usually with a loss of biodiversity and a resulting lower productivity and capacity to process wastes and contaminants*
- *There is considerable lack of knowledge and uncertainty about the actual limits (thresholds for change) in different ecosystems. While further research can reduce these uncertainties, given the dynamic and complex nature of ecosystems we may never have perfect understanding.*
- *Given the pervasiveness of uncertainties in managing ecosystems, management will need to be adaptive, with a focus on active learning derived from monitoring the outcomes of planned interventions using a sound experimental approach that allow the effects of the intervention to be accurately determined.*

Management to restore lost capacities or control use should be appropriately cautious and apply an adaptive management approach.

Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

Rationale:

The approach should be bounded by spatial and temporal scales that are appropriate to the objectives. Boundaries for management will be defined operationally by users, managers, scientists and indigenous and local peoples. Connectivity between areas should be promoted where necessary. The ecosystem approach is based upon the hierarchical nature of biological diversity characterized by the interaction and integration of genes, species and ecosystems.

Implementation guidelines

- 6.1 Identify practices that are not sustainable and develop appropriate mechanisms for improvement involving all stakeholders.
- 6.2 Given the uncertainty associated with defining the limits to ecosystem functioning under most circumstances, the precautionary approach should be applied.
- 6.3 Implement an adaptive management approach.
- 6.4 Develop understanding of the limits of ecosystem functioning and the effects of various human use on the delivery of ecosystem goods and services.
- 6.5 Where permissible limits to change in specific ecosystem components can be agreed, manage within these but monitor and assess the ecosystem response. Feedback the information at regular intervals to those responsible for setting the off-take or other limits.
- 6.6 Encourage the use of environmental assessments and monitoring to establish ecosystem responses to disturbance, in order to provide management feedback and develop appropriate responses.
- 6.7 Develop and promote appropriate management strategies and practices that sustain resources and maintain ecosystems within the limits of their functioning.
- 6.8 Sustainable use management goals and practices should avoid or minimize adverse impacts on ecosystem services, structure and functions as well as other components of ecosystems.
- 6.9 Formulate, review and implement regulatory framework, codes of practice and other instruments to avoid using ecosystems beyond their limits.

Annotations to the rationale:

The driving forces of ecosystems, including those due to human activities, vary spatially and through time, necessitating management at more than one scale to meet management objectives. In this regard it should be noted that:

- *Ecosystems are made up of biotic and abiotic components and processes, which function at a range of spatial and temporal scales, within a nested hierarchy.*
- *The dynamics of human social and economic systems also vary across scales of space, time and quality.*
- *How components are perceived spatially depends partly on the scale of observation. At one scale, individuals of a species may seem relatively regularly and continuously distributed; at another the distribution may be discontinuous. Likewise with time, for example, at one time scale (e.g., monthly, annually) a component or process may appear predictable; at another, longer or shorter time scale, the temporal dynamics may be unpredictable.*
- *Management processes and institutions should be designed to match the scales of the aspects of the ecosystem being managed. More importantly, perhaps, given that ecosystem components and processes are linked across scales of both space and time, management interventions need to be planned to transcend these scales.*
- *Failure to take scale into account can result in mismatches between the spatial and time frames of the management and those of the ecosystem being managed. For example, policy makers and planners sometimes may have to consider shorter time frames than the time frames of major ecosystem processes. The reverse can also be true, for example, where bureaucratic inertia can delay the quick management response needed to address a rapidly changing environmental condition. Spatial mismatches are also common, such as when administrative boundaries and those of ecosystem properties or related human activities that they are designed to regulate do not coincide.*

Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.

Rationale:

Ecosystem processes are characterized by varying temporal scales and lag-effects. This inherently conflicts with the tendency of humans to favour short-term gains and immediate benefits over future ones.

Annotations to the rationale:

Time needs to be considered explicitly in formulating management plans, and in longer-scale processes need to especially considered and planned for because these are otherwise often neglected. In this regard it should be noted that:

- *People find long-term trends more difficult to detect than short term trends, particularly in complex systems.*
- *Management systems tend to operate at relatively short time scales, often much*

Implementation guidelines

- 7.1 Enhanced capacity is required to analyze and understand the temporal and spatial scales at which ecosystem processes operate, and the effect of management actions on these processes and the delivery of ecosystem goods and services. Identification of spatial patterns and gaps in connectivity should be included in this analysis.
- 7.2 Functional mismatches in the administration and management of natural resources should be avoided by readjusting the scale of the institutional response to coincide more closely with spatial and temporal scales of processes in the area under management. This logic underpins the current global trend towards decentralised natural resource management.
- 7.3 Given that ecosystem components and processes are linked across scales of both time and space, management interventions need to be planned to transcend these scales. Developing a nested hierarchy of spatial scales may be appropriate in some circumstances.
- 7.4 Managing large areas such as river basins or large marine areas may require development of new institutional mechanisms to engage stakeholders across administrative borders and different levels of administration.
- 7.6 Attention to spatial and temporal scales is needed in the design of assessment and monitoring efforts.
- 7.7 Concepts of stewardship, intergenerational equity and sustainable yield need to be applied to considerations of the temporal scale.
- 7.8 Regional collaboration is necessary to deal with large-scale changes.

Implementation guidelines

- 8.1 Adaptive management processes should include the development of long-term visions, plans and goals that address inter-generational equity, while taking into account immediate and critical needs (e.g., hunger, poverty, shelter).
- 8.2 Adaptive management should take into account trade-offs between short-term benefits and long-term goals in decision-making processes.
- 8.3 Adaptive management should take into account the lag between management actions and their outcomes.

shorter than the timescales for change in ecosystem processes.

- *Where there is a lag between management actions and their outcomes, it is difficult to take reasoned management decisions.*
- *Long-term ecological processes, which can be very important, are therefore likely to be poorly accommodated in management systems, unless these are explicitly and carefully designed to address long-term issues.*

Awareness of long-term processes is important because it is the long-term, spatially, extensive processes that both characterise and determine the broad ecosystem properties.

Principle 9: Management must recognize that change is inevitable.

Rationale:

Ecosystems change, including species composition and population abundance. Hence, management should adapt to the changes. Apart from their inherent dynamics of change, ecosystems are beset by a complex of uncertainties and potential "surprises" in the human, biological and environmental realms. Traditional disturbance regimes may be important for ecosystem structure and functioning, and may need to be maintained or restored. The ecosystem approach must utilize adaptive management in order to anticipate and cater for such changes and events and should be cautious in making any decision that may foreclose options, but, at the same time, consider mitigating actions to cope with long-term changes such as climate change.

Annotations to the rationale:

Change in ecosystems is both natural and inevitable, and therefore management objectives should not be construed as fixed outcomes but rather the maintenance of natural ecological processes. In this regard it should be noted that:

- *Ecosystems change constantly as a result of natural processes. Those changes include shifts in species composition, population abundance, and physical characteristics.*
- *Such changes are not necessarily constant, variable, dynamic and usually difficult to predict at any point in time.*
- *It is therefore difficult to select an appropriate outcome or future state of an ecosystem as a static management goal. Instead, in addressing this and Principle 8, management should focus on maintaining the natural processes, which drive those changes.*
- *This focus on processes requires a management approach that is flexible and adaptive, both as a response to changing circumstances and to take account of new knowledge and understanding. Adaptive management should generate new knowledge and reduce uncertainties, thereby allowing the manager to anticipate and cater for change.*
- *Ecosystem management must therefore involve a learning process that will help to adapt methods and practices to improve the ways in which these systems are being managed and monitored. Flexibility is also needed in policy-making and implementation. Long-term, inflexible decisions are likely to be ineffective or detrimental.*

- 8.4 Monitoring systems should be designed to accommodate the time scale for change in the ecosystem variables selected for monitoring. Alternatively, if the monitoring cannot be adjusted, a more appropriately scaled but still relevant variable should be selected to monitor.
- 8.5 The capacity to monitor and detect long-term, low frequency changes in ecosystem structure and functioning should be strengthened.
- 8.6 To implement long-term management requires stability of institutions, legal and policy frameworks, monitoring programs, and extension and awareness-raising programs.

Implementation guidelines

- 9.1 Adaptive management is needed to respond to changing social and ecological conditions, and to allow management plans and actions to evolve in light of experience.
- 9.2 Natural resource managers must recognise that natural and human-induced change is inevitable and take this into account in their management plans.
- 9.3 Adaptive management should be encouraged when there is a risk degradation or loss of habitats, as it can facilitate taking early actions in response to change.
- 9.4 Monitoring systems, both socio-economic and ecological, are an integral part of adaptive management, and should not be developed in isolation from the goals and objectives of management activities.
- 9.5 Adaptive management must identify and take account of risks and uncertainties.
- 9.6 Where changes occur across national borders, the scale of adaptive management may need to be adjusted.
- 9.7 While ecosystems are inherently dynamic and resilient, special adaptation and mitigation measures are needed for human-induced problems such as climate change that may push ecosystems beyond the limits of natural variation. Capacity-building efforts are needed to address highly vulnerable areas such as small island states and coastal areas.
- 9.8 Capacity-building efforts are needed to address highly vulnerable areas such as small island states and coastal areas.
- 9.9 Traditional knowledge and practice should be used to enable better detection and understanding of ecosystem change, and to develop appropriate adaptation measures.
- 9.10 Adaptive management should recognize the resilient capacity of ecosystems in response to natural disturbances, and should be aimed at maintaining or restoring this capacity so as to reduce the risk of adverse social and economic consequences of natural variability in ecosystems.

- 9.11 Awareness-raising measures are needed to enhance public knowledge that ecosystem change is a natural phenomenon, and to build support and capacity for adaptive management.

Principle 10: The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.

Rationale:

Biological diversity is critical both for its intrinsic value and because of the key role it plays in providing the ecosystem and other services upon which we all ultimately depend. There has been a tendency in the past to manage components of biological diversity either as protected or non-protected. There is a need for a shift to more flexible situations, where conservation and use are seen in context and the full range of measures is applied in a continuum from strictly protected to human-made ecosystems

Annotations to the rationale:

Biological resources play a role in providing the ecosystem goods and services on which humans ultimately depend. In this regard it should be noted that:

- *The ecosystem approach is designed to support the conservation of biodiversity, the sustainable use of its components, and the equitable sharing of benefits derived from the use of biodiversity.*
- *Sustainable use and management depends on also achieving conservation objectives.*
- *Management for conservation and sustainable use are not inherently incompatible, and can be integrated.*
- *Integration can be achieved at various scales and in various ways including both spatial and temporal separation across the landscape as well as through integration within a site.*

Implementation guidelines

- 10.1 Develop integrated natural resource management systems and practices to ensure the appropriate balance between, and integration of, the conservation and use of biological diversity, taking into account long- and short-term, direct and indirect, benefits of protection and sustainable use as well as management scale.
- 10.2 Develop policy, legal, institutional and economic measures that enable the appropriate balance and integration of conservation and use of ecosystems components to be determined.
- 10.3 Promote participatory integrated planning, ensuring that the full range of possible values and use options are considered and evaluated.
- 10.4 Seek innovative mechanisms and develop suitable instruments for achieving balance appropriate to the particular problem and local circumstances.
- 10.5 Manage areas and landscapes in a way that optimises delivery of ecosystem goods and services to meet human requirements, conservation management and environmental quality.
- 10.6 Determine and define sustainable use objectives that can be used to guide policy, management, and planning, with broad stakeholder participation.

Identify solutions which relieve sectoral pressure on existing resources

Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

Rationale:

Information from all sources is critical to arriving at effective ecosystem management strategies. A much better knowledge of ecosystem functions and the impact of human use is desirable. All relevant information from any concerned area should be shared with all stakeholders and actors, taking into account, inter alia, any decision to be taken under Article 8(j) of the Convention on Biological Diversity. Assumptions behind proposed management decisions should be made explicit and checked against available knowledge and views of stakeholders.

Annotations to the rationale:

Ecosystems can be viewed at various scales and from different perspectives, each

Implementation guidelines

- 11.1 Relevant information should be shared with other stakeholders and actors and technical and

yielding unique information and insights. Good management should therefore consider all relevant information. In this regard it should be noted that:

- *The ecosystem approach is designed to accommodate a range of values and associated goals, and the information and perspectives of the communities that hold those values are therefore important in designing and implementing management.*
- *There is no single level of organisation at which one can understand and optimize management of ecosystem functioning. Different information sources will address issues at different levels, providing complementary perspectives to support integrated management.*
- *Good management therefore depends on maximising the information inputs, carefully assessing their accuracy and relevance, and integrating the information into decision-making and management.*
- *The issue of developing new understanding and information (research etc) is missing.*

scientific information be made available in an accessible way (indigenous and local knowledge should be treated with full respect of Article 8(j) and further decisions of the CBD).

- 11.2 Assumptions behind proposed management decisions should be made explicit based on the best available expertise, explicitly regard scenarios of future change and include the knowledge and views of stakeholders.
- 11.3 Appropriate mechanisms should be developed to document and make more widely available the information from all relevant disciplines (including natural and social sciences) and from relevant knowledge systems, particularly those based on local and traditional practices. This guideline should be implemented consistent with any decision to be taken under Article 8(j) of the CBD.
- 11.4 The implications for ecosystem management of different "world views" based on different knowledge systems should be evaluated.

Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Rationale:

Most problems of biological-diversity management are complex, with many interactions, side-effects and implications, and therefore should involve the necessary expertise and stakeholders at the local, national, regional and international level, as appropriate.

Annotations to the rationale:

The complexity of ecosystem management for sustained use and conservation requires integrating the activities and actions of many different stakeholders. In this regard it should be noted that:

- *The activities of all sectors affect biological diversity, and can contribute to, or detract from, the achievement of the objectives of the Convention.*
- *The management of biodiversity, because of its complexity, and the significance of human impacts, requires a wide range of scientific and management skills, including those located in sectors that have not traditionally been involved in biodiversity conservation or management.*

For these reasons the ecosystem approach should provide a framework for fostering greater involvement of all relevant stakeholders and technical expertise in planning and carrying out coordinated activities, sharing management resources, or simply exchanging information.

Implementation guidelines

- 12.1 The integrated management of land, water and living resources requires increased communication and cooperation, (i) between sectors, (ii) at various levels of government (national, provincial, local), and (iii) among governments, civil society and private sector stakeholders. Increased communication among international and regional organisations also.
- 12.2 Further incorporation of the ecosystem approach as an integral part of planning in, among others, the agriculture, fisheries, forestry and other natural resources management sectors potentially affecting biodiversity and ecosystem functioning, should be encouraged, following the example, for instance, of the Code of Conduct for Responsible Fisheries, Sustainable Forest Management or others. Sectors other than the primary production sectors may also have major effects but are often less recognised in this respect.. These include sectors such as the judicial sector, which affects governance, as well as those such as energy and transport, which are managing or affecting resources either directly or indirectly.
- 12.3 Procedures and mechanisms should be established to ensure effective participation of all relevant stakeholders and actors during the consultation processes, decision making on management goals and actions, and, where appropriate, in implementing the ecosystem approach.
- 12.4 The effective implementation of the ecosystem approach may require involving multidisciplinary professional and scientific expertise, including such disciplines as

- economic, social and natural sciences.
- 12.5 When assessing the costs and benefits of conserving, maintaining, using and restoring ecosystems, the interests of all relevant sectors should be taken into account for equitable sharing of the benefits according to national law.

Annex II

**CONSIDERATION OF THE RELATIONSHIP BETWEEN SUSTAINABLE FOREST
MANAGEMENT AND ECOSYSTEM APPROACH, AND REVIEW OF, AND
DEVELOPMENT OF STRATEGIES FOR, THE INTEGRATION OF THE
ECOSYSTEM APPROACH INTO THE PROGRAMMES OF WORK OF
THE CONVENTION**

A. Sustainable forest management

1. Conceptual basis of the ecosystem approach in relation to sustainable forest management

1. In 1992, the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forest of the United Nations Conference on Environment and Development (UNCED), also referred to as “Forest Principles”, defined a new paradigm for forest management, through a set of 15 principles in support to the overall objective of contributing to the management, conservation and sustainable development of forests and their multiple functions and uses. In this regard, the concept of sustainable forest management (SFM) anticipated the ecosystem approach, both of which are based on the tenet of sustainability. SFM incorporates the following key sustainability concepts: (i) stewardship; (ii) enabling environment; (iii) continuous flow of goods and services without undermining the resource base; (iv) maintenance of ecosystem functioning and biodiversity; (v) maintenance of economic, social, and cultural functions; (vi) benefit-sharing; and (vii) stakeholder participation in decision-making.

2. SFM can be considered as a means of applying the ecosystem approach to forests. Although the concept of SFM and the ecosystem approach are not identical, the two are similar in many respects. Both need to be applied as an integrated whole. Both are also rapidly evolving. Both have a non-legally binding nature, allowing for flexibility and experimentation. SFM and the ecosystem approach are overarching frameworks--both with due consideration to societal, ecological, and governance issues--although the former has undergone substantial refinement over the last decade, being primarily an outcome-based approach. The ecosystem approach is still in need of further elaboration to be translated into good operational practice in a particular situation. As far as challenges are concerned, both SFM and the ecosystem approach need to deal with complex issues such as law enforcement, land tenure rights, and the rights of indigenous and local communities. In this regard, implementation of both approaches requires political will, including that of institutions and communities.

3. The broad overlap between the concepts of SFM and the ecosystem approach is encouraging, but there are yet significant opportunities for mutual learning. Lessons learned should flow both ways. Country-level meetings to examine the relationship between SFM and the ecosystem approach would be useful, and should be commended to Parties to the Convention. These meetings should emphasize mutual learning opportunities.

4. As stated above, SFM is relatively more mature than the ecosystem approach in the sense of being more refined from an operational standpoint; thus it can feed on some aspects of the ecosystem approach to this end. Specifically, there is a clear need for the ecosystem approach to adopt processes that are based upon clear statements of visions, objectives, and goals for defined regions or issues, thereby becoming more outcome-oriented. Conceptual development of the ecosystem approach to date has emphasized a description of the content of the principles. Moving from a content-driven approach to an outcome-driven approach would be beneficial. Tools and approaches developed to implement SFM, which are discussed below, may be useful in other productive sectors as they explore ways to apply the ecosystem approach.

2. Proposals for integration of the ecosystem approach and sustainable forest management

5. Even though the ecosystem approach and sustainable forest management are broadly overlapping concepts, more could be done to ensure their integration. Sustainable forest management could gain

insights from the ecosystem approach concepts as **cross-sectoral integration** is largely missing from SFM, reflecting restricted legal mandates mostly within forest sector institutions. Mechanisms for inter-sectoral collaboration could be strengthened within SFM. Agro-forestry integrates the forest and agriculture sectors but other linkages between the forest sector and the agriculture sector (and other sectors such as water management, transport, and conservation) need to be strengthened.

6. Although there is no pre-defined scale, the ecosystem approach can be applicable over large areas (landscape level), while SFM has historically emphasized forest management-unit levels of work at typically small spatial scales. Although the Forest Principles do not indicate that forest management should be integrated with management of adjacent areas, and some larger-scale applications (e.g. landscape restoration initiatives and model forests) have been developed within the last decade, greater emphasis could be placed on SFM within a broader spatial context, including **protected areas**, taking into consideration **conservation issues** in general, and developing stronger links to adjacent land uses and/or complementary approaches, such as extraction of non-timber forest resources, agriculture, watershed management, and ecological restoration.

7. There are areas where further conceptual development is needed in both SFM and the ecosystem approach. Both approaches, for example, should explicitly incorporate a **principle of sustainability**. The inter-generational obligation to sustain the provision of ecosystem goods and services to future generations should be clearly stated. Another area warranting further work is to incorporate issues, in both SFM and the ecosystem approach, of **consideration of risks and threats**. Global climate change creates risks and uncertainties for all sectors involved in applying the ecosystem approach. Concerns in the forest sector include insecure land tenure, increased forest fire incidence, and the spread of forest pests and diseases into higher latitudes.

8. As stated in the previous section, there is a need for the ecosystem approach to adopt a more **outcome-based approach**. As such, lessons learned from implementation of SFM through the application of criteria and indicators would be particularly beneficial. In addition, the experiences of applying the ecosystem approach through Global Environmental Facility projects should be taken into account.

9. In general, **tools and approaches** developed to implement SFM may be useful in other productive sectors as they explore ways to implement the ecosystem approach. The processes of developing and using criteria and indicators for sustainable forest management (including local-level indicators), designing and setting up model forests and demonstration forests, and drawing up national forest programs, action-oriented forest management plans, environmental management systems, and codes of conduct and practice, are all tools with broader potential relevance. For example, codes of practice for sustainable agricultural systems are not as advanced as for SFM. Approaches and tools developed for community forestry and social forestry to achieve broader stakeholder engagement, also have considerable potential for application in other sectors.

10. In particular, the use of **criteria and indicators** is considered a key tool for implementing and monitoring SFM, and the approach is being applied both nationally and at the forest management unit level. Criteria and indicators can be used for setting goals, assessing management outcomes and policy effectiveness, orienting forest certification systems, and for communicating progress to policy makers. Although nine regional and international processes to develop and implement criteria and indicators for sustainable forest management have largely developed independently, to date, 149 countries, encompassing 95% of the world's forests, are in the process of applying the criteria and indicators approach. Criteria and indicators for sustainable forest management represent a detailed expression of the elements of SFM when taken as a integrated whole, and bear many points of similarity to the ecosystem approach. Criteria and indicators can be adapted towards on-the-ground action, as illustrated by the development of local-level indicators applicable at the forest management unit level by ITTO.

11. Local-level indicator work is one of the most interesting developments in the Criteria and Indicators approach. This work helps engage stakeholders in developing a longer-term vision and objectives for defined management areas, generating indicators that are meaningful to local needs. Their

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goal is to provide useful feedback to management, rather than to fulfil national monitoring and reporting requirements. Monitoring systems that can provide on-the-ground feedback and verify sustainability are essential for implementing adaptive management, a central concept within the ecosystem approach. These monitoring systems support the management-feedback process and allow it to evolve through time. **model forests and demonstration forests** (such as the work undertaken by ITTO) are providing further valuable opportunities to test adaptive management concepts and to promote their wider application.

12. While existing efforts in SFM/criteria and indicators are currently focused on the national level and the forest-management unit level, some recent efforts (such as work undertaken by IUCN) are focusing at the landscape level. The development of criteria and indicators for the landscape level should be further pursued. In this context, it is worth noting that restoration actions are starting to be undertaken at the landscape level, and that the ITTO Guidelines for the Restoration, Management and Rehabilitation of Degraded Secondary Tropical Forests have been developed for guiding policy makers on forest restoration at this spatial scale. The assessment through criteria and indicators tools could be used to determine flows of specific ecosystem services (e.g. carbon capture in plantations).

13. In this regard, the potential for application of forest criteria and indicators to the ecosystem approach is high, particularly in regions where forests are an integral part of the resource base being used. In a recent effort at summarizing the state of knowledge of the contribution of criteria and indicators for sustainable forest management, seven thematic areas were identified in which the development of criteria and indicators can suit specific management needs; these areas can easily be applied to many principles of the ecosystem approach. ^{7/}

14. **Forest certification** is another rapidly evolving approach that involves the use of criteria and indicators as primary tools. Globally, about 120 million hectares of forest have been certified. Certification is more limited in scope than SFM as it tends to focus on production forests only, to the exclusion of protected areas and landscape-level considerations as mentioned earlier. However, some certified forests currently exist in protected areas, and some certification schemes require, in turn, that a proportion of the managed forest be set aside for protection. Therefore the potential of forest certification to link with protected areas is high. ^{8/} In this context, forest certification programmes could benefit from moving in the direction of the ecosystem approach being broader in scope.

15. Nevertheless, certification systems have found limited application in some developing countries, notably in the tropics, where enabling conditions to implement these systems are generally lacking. There are various barriers to tropical forest certification, such as limited institutional and technical capacity, and poor development of markets for certified wood. Efforts to overcome these barriers could be a priority for the ecosystem approach. ITTO's efforts to develop a phased approach to tropical forest certification should be noted in this context.

16. In addition, and of direct relevance for the integration of the ecosystem approach with SFM, ITTO has also developed **policy guidelines** for sustainable forest management. The guidelines contain a set of principles and recommended actions and relate to sustainable natural and planted tropical forests; conservation of biological diversity in tropical production forests; fire management in tropical forests; and restoration, management and rehabilitation of degraded secondary tropical forests. ITTO has also been promoting demonstration sites and demonstration watersheds.

17. If SFM were to explicitly examine tools and approaches that could be applied to other sectors - such as criteria and indicators, certification, and Model Forests - it would promote cross-fertilization, and help strengthen cross-sectoral integration. Developing institutional mechanisms to get people from

^{7/} International Conference on the Contribution of criteria and indicators for sustainable forest management: the way forward. Guatemala City, 3-7 February 2003. The common thematic areas are: (1) extent of forest resources; (2) biological diversity; (3) forest health and vitality; (4) productive functions of forest resources; (5) protective functions of forest resources; (6) socio-economic functions; (7) legal, policy and institutional framework.

^{8/} Certification of good forest management and its relationship to protected areas. IUCN Forest case-study number 3. April 2003.

different sectors around the table on an ongoing basis is a challenge in all countries. In addition to wider dissemination of useful tools, cross-sectoral meetings on SFM and the ecosystem approach would help demystify concepts and support mutual recognition, allowing people to use their own vocabulary.

18. The FAO is actively developing tools relevant to implementing SFM and the ecosystem approach. The FAO and World Bank have a support programme for facilitating stakeholder participation in the development of national forest programmes. Increased knowledge sharing is a major focus of FAO's efforts. The FAO Model Code of Forest Harvesting Practices has led to development of regional codes and country codes. The non-legally binding nature of these codes is a key to wider acceptance. Codes for integrated pest management, fire management, and integrated watershed management should also be noted. In addition, the recent FAO initiative, "In Search of Excellence in Forest Management", with its call for nominations of well-managed forests, has generated an excellent response. Multiple use, stakeholder participation, good information and monitoring systems, and good governance are recurring themes in well-managed forests, and they are as well key issues for the ecosystem approach.

19. In summary, in order to achieve greater harmonization of the SFM and ecosystem approach concepts, there is a need for SFM to strengthen cross-sectoral integration, which can be undertaken at least in part through application of SFM tools into other sectors. Developing and implementing biodiversity indicators would also help strengthen the contribution of SFM to biodiversity conservation. The development of criteria and indicators as well as certification programmes within SFM at the landscape level should also be pursued.

20. The ecosystem approach, should, in turn, consider lessons learned from application of SFM tools and approaches, such as criteria and indicators, certification systems, and model and demonstration forests in its effort to move towards an outcome-oriented approach. In addition, both approaches should explicitly incorporate the principle of sustainability.

B. Integration of ecosystem approach into sectors and biomes corresponding to the thematic programmes of work of the Convention

1. Introduction

21. There has been considerable progress in the development of sector-specific approaches incorporating many elements of the ecosystem approach. In particular, relevant tools have been developed in forestry, fisheries management, and watershed management - sectors associated with the Convention's programmes of work on forest biological diversity, marine and coastal areas, and inland water ecosystems, respectively. These sectors have recognized principles that are consistent with the ecosystem approach, and are moving to develop goal- or target-oriented approaches that include stakeholder participation, adaptive management, and monitoring/feedback systems. These sectors also deal with resources that tend to be under communal or public management rather than private management. This may help facilitate the development and implementation of sector-specific tools. The progress to date should be acknowledged, and further elaboration of the ecosystem approach in individual sectors should be encouraged.

2. Marine and coastal biological diversity

22. The 1995 Code of Conduct for Responsible Fisheries includes principles that anticipate many of those in the ecosystem approach. In addition, there has been a movement towards the ecosystem approach in marine fisheries. The World Summit on Sustainable Development referred to the need to incorporate the ecosystem approach in responsible fisheries management, setting a target of 2010 for its achievement. The 2001 Reykjavik Declaration called for "guidelines for best practices with regard to introducing ecosystem considerations into fisheries management". This led FAO in 2003 to update and revise its 1995 Code in the form of a new manual called "Fisheries management: the ecosystem approach to fisheries." The World Wide Fund for Nature (WWF) has also developed a guide to ecosystem-based management for fisheries, and helped launch an effort to develop a certification program for marine fisheries under the Marine Stewardship Council. The Global Environment Facility (GEF) has provided

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financial support to 15 Large Marine Ecosystem (LME) projects involving more than 100 countries around the world. The LME projects build on an ecosystem approach in developing capacity and infrastructure for integrated management of marine and coastal environment and resources. Marine and coastal protected areas (MCPAs) are another significant cross-cutting approach in the context of marine and coastal areas. A CBD ad-hoc technical expert group prepared detailed guidance, in line with the ecosystem approach, on this topic that was discussed at the eighth meeting of SBSTTA (recommendation VIII/3). This guidance reflects the spirit of the ecosystem approach, and is available in document UNEP/CBD/SBSTTA/8/INF/11. Current thinking emphasizes a need to combine integrated marine and coastal area management (IMCAM) with a core network of highly protected areas, which act as baselines and an insurance policy. SBSTTA accepted this notion at its eight meeting, while indicating that the balance between highly protected zones and other areas where extractive uses are allowed is a choice for individual countries. The concept of IMCAM covers both marine areas and coastal portions of the land. These approaches are area-based, and are explained by detailed sets of guidelines such as those developed by Ramsar and FAO, and those under development within the framework of the Convention on Biological Diversity. UNEP is trying to bring together ocean management and river basin management in the project on integrated watershed and coastal area management (IWCAM) in small island developing States of the Caribbean.

3. *Inland water ecosystems biological diversity*

23. The concepts of integrated watershed management and river basin management present multidisciplinary approaches to the management of biophysical, social, and economic issues affecting water resources and their uses, and as such are consistent with the ecosystem approach. The River Basin Initiative operates under the framework of the joint work plan between the Convention on Biological Diversity and the Ramsar Convention, to support implementation of convention decisions related to better management of inland water ecosystems and associated biodiversity, water resources and wetlands. The Ramsar Convention, as the lead partner of the Convention on Biological Diversity in the implementation of activities under the Convention on inland water ecosystems, has developed a tool kit that includes practical guidance for integrated planning and management of river basins and coastal zones. In addition, the Ramsar Convention has developed guidelines for Global Action on Peatlands, and for “allocation and management of water for maintaining the ecological functions of wetlands”. These guidelines make connections between ecological functions, hydrology, economic demands and institutional responses.

4. *Agricultural biological diversity*

24. The programme of work on agricultural biodiversity recognizes the ecosystem approach and addresses many of the twelve principles individually. However, there is a potential deficiency in that the agricultural biodiversity programme of work does not apply the ecosystem approach in an integrated way. Furthermore, there has been less progress in development of relevant tools within the agricultural sector than in other sectors. This may partly reflect the fact that agriculture is practiced largely on lands under private ownership. Participants at the expert meeting suggested that the issue of integrating the ecosystem approach within the agricultural sector be addressed in a comprehensive manner the next time that the programme of work in agricultural biodiversity is reviewed. Consideration might also be given to developing an addendum to the existing programme of work on use of the ecosystem approach.

25. Examples of initiatives and tools include efforts by FAO to codify “good agricultural practices”, and development of a manual on integrated production and protection (IPP) crop management, with specific IPP guidelines for various crops. An information document prepared for the fifth meeting of the Conference of the Parties to the Convention on Biological Diversity entitled “The ecosystem approach: toward its application to agricultural biodiversity” (UNEP/CBD/COP/5/INF/11) discussed approaches or tools that can contribute to ecosystem approach objectives, with a focus on integrated pest management and farmer field schools. An integrated natural resource management (INRM) approach has been adopted throughout the Consultative Group on International Agricultural Research (CGIAR) system. INRM has been conceptually defined as “the responsible and broad-based management of the land, water, forest and biological resource base—including genes—needed to sustain agricultural productivity and avert

degradation of potential productivity.” Research and applications development are under way related to adaptive management, multiple scales and stakeholders, and measurable outcomes. Certification schemes, such as those for organic agriculture, are evolving in directions consistent with the ecosystem approach.

5. *Dry and sub-humid lands biological diversity*

26. The programme of work on dry and sub-humid lands explicitly addresses the twelve principles of the ecosystem approach in an integrated way. An important consideration is the interaction between the Convention on Biological Diversity and the Convention to Combat Desertification (CCD). The CCD does not use the term “ecosystem approach”, but embraces many of the principles, especially participatory aspects. There may be opportunities to bring ecosystem approach concepts into certain CCD-specific initiatives such as those in drought resistance and early warning systems. Considerations related to developing alternative livelihoods, which are conceptually similar to the ecosystem approach, are central to work in drylands. Maintenance of a multi-biome perspective is also important, and therefore existing tools such as integrated river basin management are broadly applicable. A major reason for applying the ecosystem approach is to break down sectoral and institutional barriers.

IX/7. Draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity

The Subsidiary Body on Scientific, Technical and Technological Advice

Recommends that the Conference of the Parties adopt a decision along the following lines:

The Conference of the Parties,

Underlining that the proposals for the application of ways and means to remove or mitigate perverse incentives elaborated by the Workshop on Incentive Measures for the Conservation and Sustainable Use of Components of Biological Diversity, held in Montreal from 3 to 5 June 2003, provide further guidance on the implementation of principle 3 of the draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity,

Stressing that the ecosystem approach is the primary framework for action in the Convention on Biological Diversity and that there is a need to consider the interlinkages between the draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biological Diversity and the ecosystem approach in the conservation and sustainable management of biodiversity,

Noting the ongoing work on impact assessment under the Convention on Biological Diversity,

1. *Adopts* the draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, as contained in annex II to the present recommendation;

2. *Invites* Parties, other Governments and relevant organizations to initiate a process for the implementation of the Addis Ababa Principles and Guidelines at the national and local levels, in line with article 6 and 10(a), taking into account existing frameworks for sustainable use, including the concept of sustainable forest management, e.g., by developing pilot projects, with a view to:

(a) Integrating and mainstreaming the Addis Ababa Principles and Guidelines into a range of measures including policies, programmes, national legislation and other regulations, sectoral and cross-sectoral plans and programmes addressing consumptive and non consumptive use of biodiversity, including plans and programmes addressing the removal or mitigation of perverse incentives that undermine the conservation and sustainable use of biodiversity, as deemed necessary by individual Parties; and

(b) Gathering and disseminating through the Clearing House Mechanism and other means relevant information on experiences and lessons learned for the further improvement of the guidelines;

3. *Requests* the Executive Secretary to collect information and experiences on successful efforts made to implement Article 10 of the Convention and, as they are developed, success stories, best practices and lessons learned in the application of the Addis Ababa Principles and Guidelines, including information and experiences on how sustainable use of biodiversity can contribute to the achievement of the target of significantly reducing the rate of biodiversity loss by 2010 for consideration by SBSTTA prior to the ninth meeting of the Conference of the Parties;

4. *Requests* the Executive Secretary to undertake further work on issues pertaining to use of terms for sustainable use, adaptive management, monitoring and indicators building on the outcome of the Addis Ababa workshop, in particular and in line with Article 7 of the Convention, requests the Executive Secretary to further consolidate the work on the use of terms and on associated instruments based on parts D on "Use of Terms" and "Associated Instruments" together with appendix I of the report of the Addis Ababa Workshop, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice prior to the eighth meeting of the Conference of the Parties;

5. *Invites* Parties and Governments, in collaboration with local stakeholders, including indigenous and local communities, other relevant international organizations and agreements (e.g., IUCN, the Food and Agriculture Organization of the United Nations, the United Nations Educational, Scientific and Cultural Organization, the Convention on International Trade and Endangered Species of Wild Fauna and Flora and the Convention on the Conservation of Migratory Species of Wild Animals) to

undertake further research including, through, *inter alia*, the compilation and analysis of case-studies on sustainable use consistent with practical principle 6:

- (a) The impacts of sustainable use and non-sustainable use on livelihoods, and ecosystems goods and services;
- (b) The role of indigenous and local communities, and women in the sustainable use of components of biodiversity;
- (c) The relationship between resilience of ecosystems and the sustainable use of biodiversity;
- (d) The terms used in the description of sustainable use, taking into account the aspirations of present and future generations in different regions and situations; building on the consensus reached in the Addis Ababa Report (UNEP/CBD/SBSTTA/9/INF/8);
- (e) The elaboration of management plans at time scales appropriate to the life history of species or populations;
- (f) The applicability of the Addis Ababa Principles and Guidelines on the use of components of biological diversity that are subject to multiple jurisdictions, (e.g., a resource shared between different countries, or migratory species moving across national jurisdictions);
- (g) The functional relationships between different components of biological diversity in the context of sustainable use;
- (h) The socio-economic factors that influence pattern and intensity of use of biological resources, economic and social values of goods and services provided by ecosystems;
- (i) Methods and mechanisms to determine sustainability of various intensities of use and participatory methods for determining appropriate levels of sustainable use;
- (j) Ways of enhancing equitable distribution of benefits derived from the sustainable use of components of biodiversity, including genetic resources;

6. *Requests* the Executive Secretary to integrate the work on indicators for monitoring sustainable use referred to in section III of the note by the Executive Secretary on sustainable use (UNEP/CBD/SBSTTA/9/9) (see annex I below) also into the broader work undertaken pursuant to decision IV/7 on the “identification, monitoring, indicators and assessment”. In particular, social, economic and ecological indicators of external disturbances should be identified and developed. Existing indicator frameworks, monitoring systems and inventories of natural resources should be utilized, as appropriate.

7. *Invites* Parties and Governments, in collaboration with other relevant organizations, including the private sector, to develop and transfer technologies and provide financial support to ensure that the use of biological diversity is sustainable.

Annex I

EXTRACT FROM THE NOTE BY THE EXECUTIVE SECRETARY ON SUSTAINABLE USE PREPARED FOR THE NINTH MEETING OF THE SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE (UNEP/CBD/SBSTTA/9/9)

I. INTRODUCTION

1. In recent decades, biodiversity components have been used in a way leading to degradation of habitats, loss of species and erosion of genetic diversity, thus jeopardizing present and future livelihoods. Sustainable use of components of biodiversity, one of the three objectives of the Convention, is a key to achieving the broader goal of sustainable development and is a cross-cutting issue relevant to all thematic issues and areas addressed by the Convention and to all biological resources. It entails the application of methods and processes in the utilization of biodiversity to maintain its potential to meet current and future human needs and aspirations and to prevent its long-term decline.

2. Sustainable use of the components of biological diversity is defined in Article 2 of the Convention as the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations. Provisions relating to sustainable use are given in Article 10, which, *inter alia*, requests Parties to “adopt measures relating to the use of biological diversity to avoid or minimize impacts on biological diversity”. In order to assist Governments in their implementation of Article 10, the Conference of the Parties at its fifth meeting requested the Executive Secretary “to assemble practical principles, operational guidelines and associated instruments, and guidance specific to sectors and biomes, which would assist Parties and Governments to develop ways to achieve the sustainable use of biological diversity, within the framework of the ecosystem approach” (decision V/24).

3. In response to that decision, the Executive Secretary, in collaboration with the Governments of Mozambique, Viet Nam and Ecuador and with financial support from the Government of the Netherlands, convened three regional expert workshops in 2001-2002 designed to develop a set of practical principles and operational guidelines and associated enabling instruments for Parties, resource managers and other stakeholders.

4. The first workshop, held in Maputo in September 2001, focused on key elements relating to the sustainable use of dry-land resources and wildlife utilization in Africa. 9/ The second workshop was held in Hanoi in January 2002 and addressed in particular the uses of forest biological diversity, including timber and non-wood forest products in Asia, with references to agricultural biological diversity. 10/ The third workshop, held in Salinas, Ecuador, in February 2002, focused on marine and freshwater fisheries uses particularly in Latin America and the Caribbean. 11/

5. At its sixth meeting, the Conference of the Parties, in its decision VI/13, called for a fourth open-ended workshop in order to:

- (a) Synthesize the outcomes of the three workshops;
- (b) Integrate different views and regional differences; and
- (c) Develop a set of practical principles and operational guidelines for the sustainable use of biological diversity.

6. The fourth open-ended workshop was organized in Addis Ababa, Ethiopia, from 6 to 8 May 2003. The report of the meeting is available to the ninth meeting of SBSTTA as an information document (UNEP/CBD/SBSTTA/9/INF/8).

7. Information contained in the present note as well as the suggested recommendations are based on the outcome of the aforementioned fourth workshop.

II. OVERVIEW OF THE DRAFT ADDIS ABABA PRINCIPLES AND GUIDELINES FOR THE SUSTAINABLE USE OF BIODIVERSITY

8. The draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity are annexed to the present note. A preamble to the principles gives a list of seven underlying conditions that should be taken into account in government and natural resources planning. This list is followed by the fourteen principles, which provide a framework for advising governments, resource managers and other stakeholders, including indigenous and local communities and the private sector, about how they can ensure that their uses of biodiversity components will not lead to the long-term decline of biological diversity. Each principle is followed by the rationale, a thorough explanation and exemplification of the

9/ The report of the Maputo workshop is contained in document UNEP/CBD/COP/6/INF/24/Add.1.

10/ The report of the Hanoi workshop is contained in document UNEP/CBD/COP/6/INF/24/Add.2.

11/ The report of the Salinas workshop is contained in document UNEP/CBD/COP/6/INF/24/Add.3.

motivation and meaning of the principle, and the operational guidelines, which provide functional advice on the implementation of the principle.

9. The principles are intended to be of general relevance, although not all principles will apply equally to all situations, nor will they apply with equal rigour. Their application will vary according to the biodiversity being used, the conditions under which they are being used, and the institutional and cultural context in which the use is taking place. The practical principles in most instances apply to both consumptive and non-consumptive uses of biodiversity components. They take into account requirements related to:

- (a) Policies, laws, and regulations;
- (b) Management of biological diversity;
- (c) Socio-economic conditions and
- (d) Information, research and education.

III. ASSOCIATED INSTRUMENTS ^{12/}

10. Implementation of the principles and guidelines for the sustainable use of biodiversity will depend on many inter-related factors including, but not limited to, existence of appropriate incentive measures, ability to manage and exchange information and sufficient capacity with which to implement sustainable management plans, and, the capacity to adapt to changing conditions based on monitoring and feedback. In particular, because in ecosystem management, circumstances change and thus uncertainties are inherent in all managed uses of components of biodiversity, adaptive management must be an essential part of any management for sustainable use. The successful application of adaptive management is dependent on monitoring changes in the indicators being uses, which could lead to changes in an array of activities associated with the management system. The issues of adaptive management and monitoring and indicators for sustainable use are addressed below.

3.1. *Adaptive management*

11. Sustainable use is not a fixed state, but rather the consequence of balancing an array of factors, which vary according to the context of the use. In addition, sustainability of uses cannot be expressed with certainty, but rather as a probability that may have to change if the conditions in which management is taking place change. In this context, adaptive management deals with the complex and dynamic nature of ecosystems and their uses and the absence of complete knowledge of their functioning, it is able to respond to uncertainties and it contains elements of “learning-by-doing” or research feedback. Achievement of sustainability is also dependent on institutional capacities to adapt to changing conditions based on monitoring and feedback. Given the uncertainties, sudden changes and different contexts in which the use of biodiversity is taking place, sustainable use entails the adaptive management of biological resources.

12. Briefly, adaptive management is considered the appropriate approach toward the management of biological resources because of its ability to deal with the uncertainty and natural variation, its iterative nature of monitoring biological resource through the management cycles, and the feedback/decision-making mechanisms to alter the management. Adaptive management can be applied at each of the recognized components of biological diversity, where the scale of management (and adaptive-management needs) is determined by the component being used. .

3.2. *Monitoring and indicators*

13. Monitoring is a key component of adaptive management and managers should be accountable and responsible for developing and implementing the monitoring programme. The indicators and benchmarks

^{12/} Information contained in this section is based on information contained in the report of the Fourth Open-ended Workshop on the Sustainable Use of Biological Diversity (Addis Ababa, 6-8 May 2003 (UNEP/CBD/SBSTTA/9/INF/8).

that form part of that monitoring programme should be agreed upon by all relevant stakeholders including governments and scientists.

14. A series of criteria and characteristics should be taken into consideration in developing a monitoring system. For instance, monitoring should be bounded by spatial and temporal scales that are relevant to the potential impact, but should not ignore “downstream”, indirect side effects of management. There are also different levels at which consumptive and non-consumptive uses should be conducted. For instance, harvest efforts should be monitored, in order to determine changes in the yield per unit effort as an index of the impact of the management programme, taking into account improvements in technology and practice relating to the efficiency of harvesting.

15. Monitoring of both consumptive and non-consumptive use should be conducted at the same frequency and by the same agencies, although the combination of monitoring may result in a greater probability that use-related impacts will be detected and that monitoring systems will be maintained in the long term. Monitoring at multiple levels is particularly important in cases where limited information is available about the current status of the component of biological diversity that is being used, or to avoid bias resulting from information derived as the result of use (e.g., harvesting is most often targeted at specific components only). It is also important to consider impacts on a resource other than influence by direct management actions, such as illegal off-takes, and to use all other relevant sources of information to verify conclusions about the trends in resource status and recommendations concerning its management.

16. There is the need to identify/further develop indicators ^{13/} within the context of sustainable use in order to describe; status of a system, change in a system, trends in a system, combinations of the above. Desirable characteristics of indicators should also be identified.

17. Indicators should be developed at various scales. Some will be national in context; some will be management-area indicators. It is important for managers/planners to include in the monitoring system indicators relevant to their specific situation. Managers should be aware that there are many existing sources of information on indicators (e.g., the Food and Agriculture Organization of the United Nations (FAO), Agenda 21, the United Nations System Wide Earth Watch Indicators, the World Bank).

18. For each of the components of biological diversity a set of indicators to measure their decline should be finalized. In this biological context, indicators should be identified for the components of biological diversity that can be subject to use. The assessment of the sustainability of use on a particular component will largely depend on the scale and extent of use. Indicators of sustainability should be applied to the component of biological diversity that approximates the unit of management.

19. The indicators identified should be suitable to demonstrate the impact of use, and only refer to the biological status of each component of biological diversity, as they should be built to detect decline in the status of biodiversity components.

20. Economic indicators will be also essential in indicating status, change and trends of use of biological components of biodiversity in economic terms. Indicators identified should be used to assess sustainability of the use. For example, the degree to which biological resources are priced and reflect true value, being a condition for effective management, may serve as an economic indicator.

21. In addition, social indicators that reflect social values with respect to the sustainable use of biological components. The indicators identified should be suitable examples to demonstrate:

- (a) The incorporation of social values into the use of biological resources;
- (b) How unique needs of individuals and indigenous and local communities are considered in policy-making and management decisions; and
- (c) The extent to which the allocation of resources can be considered to be fair and equitable.

^{13/} See also the note by the Executive Secretary on designing national-level monitoring programmes and indicators (UNEP/CBD/SBSTTA/9/10).

22. All cultures use aspects of biological diversity for the maintenance of their cultures. Using indicators to monitor sustainable use in a cultural context is important to understand the impact of the use upon cultures, and vice versa. Cultures need to be defined beyond indigenous groups; to include beliefs, customs, practices and social behaviour of all people. Some cultural indicators should therefore be identified.

Annex II

DRAFT ADDIS ABABA PRINCIPLES AND GUIDELINES FOR THE SUSTAINABLE USE OF BIODIVERSITY

1. The Addis Ababa Principles and Guidelines for the Sustainable use of Biodiversity consist of fourteen interdependent practical principles, operational guidelines and a few instruments for their implementation that govern the uses of components of biodiversity to ensure the sustainability of such uses. The principles provide a framework for advising Governments, resource managers and other stakeholders, including indigenous and local communities and the private sector, about how they can ensure that their use of biodiversity components will not lead to the long-term decline of biological diversity. The principles are intended to be of general relevance, although not all principles will apply equally to all situations, nor will they apply with equal rigour. Their application will vary according to the biodiversity being used, the conditions under which they are being used, and the institutional and cultural context in which the use is taking place.

2. Sustainable use is a valuable tool to promote conservation of biological diversity, since in many instances it provides incentives for conservation and restoration because of the social, cultural and economic benefits that people derive from that use. In turn, sustainable use cannot be achieved without effective conservation measures. In this context, and as recognized in the Plan of Implementation of the World Summit on Sustainable Development, sustainable use is an effective tool to combat poverty, and, consequently, to achieve sustainable development.

3. The practical principles in most instances apply to both consumptive and non-consumptive uses of biodiversity components. They take into account requirements related to: (i) policies, laws, and regulations; (ii) management of biological diversity; (iii) socio-economic conditions; and (iv) information, research and education.

4. It is a fundamental assumption that the application of the practical principles and operational guidelines is set within the context of the ecosystem approach (decision V/6 of the Conference of the Parties). For the practical principles, footnotes provide cross references to the relevant principle(s) of the ecosystem approach.

5. Progress towards sustainability will require the political will to bring about changes to create the necessary enabling environment at all levels of government and society. The operational guidelines are intended to provide functional advice on the implementation of the principles. These guidelines have been developed taking into account regional and thematic differences and best practices and lessons learned that have been documented in case-studies on the sustainable use of biological diversity in different biomes as well as existing codes of conduct.

6. The operationalization of the principles will require an enabling institutional, legal and administrative structure at all levels of government and society within each Party. Further, to be effective, policies and regulations that are adopted should ensure that the application of the principles is flexible and adaptable to different local realities and adjustable to specific ecosystems. In this context, seven underlying conditions should be taken into account as a framework for the correct implementation of the principles and guidelines, as listed in section A below.

A. Underlying conditions for sustainable use

7. In structuring a sustainable use programme and the attendant policies, laws and regulations to implement such a programme, there are a few underlying conditions that should be taken into account in government and natural resource management planning:

(a) It is possible to use biodiversity components in a manner in which ecological processes, species and genetic variability remain above thresholds needed for long-term viability, and thus all resource managers have the responsibility to ensure that use does not exceed these capacities. It is crucial that the biodiversity in ecosystems is maintained to ensure that those ecosystems are capable to sustain the ecological services on which both biodiversity and people depend;

(b) Ecosystems, ecological processes within them, species variability and genetic variation change over time whether or not they are used. Therefore, governments and resource managers should take into account the need to accommodate change, including stochastic events that may adversely affect biodiversity and influence the sustainability of a use;

(c) In circumstances where the risk of converting natural landscapes to other purposes is high, encouraging sustainable use can provide incentives to maintain habitats and ecosystems, the species within them, and the genetic variability of the species. Also, for particular species, such as crocodiles, sustainable use has provided substantial incentives for conserving a dangerous animal that represents a threat to humans;

(d) The basic necessities of life, such as food, shelter, freshwater and clean air are produced either directly or indirectly from using biological diversity. In addition, biodiversity provides many direct benefits and ecosystem services necessary for life. In many countries, there is complete or substantial dependence on harvested plants and animals by millions of people, often among the poorest, for their livelihoods. Increasingly other uses such as pharmaceuticals for disease prevention and cure are becoming evident and are also met from using biological diversity. Finally, indigenous and local communities and their cultures often depend directly on the uses of biological diversity for their livelihoods. In all of these instances, governments should have adequate policies and capacities in place to ensure that such uses are sustainable;

(e) The supply of biological products and ecological services available for use is limited by intrinsic biological characteristics of both species and ecosystems, including productivity, resilience, and stability. Biological systems, which are dependent on cycling of finite resources, have limits on the goods they can provide and services they can render. Although certain limits can be extended to some degree through technological breakthroughs, there are still limits, and constraints, imposed by the availability and accessibility of endogenous and exogenous resources;

(f) To ameliorate any potential negative long-term effects of uses it is incumbent on all resource users, to apply precaution in their management decisions and to opt for sustainable use management strategies and policies that favour uses that provide increased sustainable benefits while not adversely affecting biodiversity. Likewise, governments should be certain that licensed or authorized sustainable uses of biological diversity are taking such precautions in their management;

(g) In considering individual guidelines provided below, it is necessary to refer to and apply the provisions of Article 8(j), Article 10(c) and other related provisions and their development in relevant decisions of the Conference of the Parties in all matters that relate to indigenous and local communities.

B. *Practical principles, rationale and operational guidelines for the sustainable use of biodiversity*

8. Sustainability of use of biodiversity components will be enhanced if the following practical principles and related operational guidelines are applied:

Practical principle 1: Supportive policies, laws, and institutions are in place at all levels of governance and there are effective linkages between these levels.

Rationale: There is need to have congruence in policies and laws at all levels of governance associated with a particular use. For example, when an international agreement adopts a policy regarding use of biodiversity, national ^{14/} laws must be compatible if sustainability is to be enhanced. There must be clear and effective linkages between different jurisdictional levels to enable a “pathway” to be developed which allows timely and effective response to unsustainable use and allows sustainable use of a resource to

^{14/} It is recognized that, throughout the principles, rationale and operational guidelines, the term “national” may mean either national or, as appropriate in some countries, subnational.

proceed from collection or harvest through to final use without unnecessary impediment. In most cases the primary means for achieving congruence between local and international levels of governance should be through national governments.

Operational guidelines

- Consider local customs and traditions (and customary law where recognized) when drafting new legislation and regulations;
- Identify existing and develop new supportive incentives measures, policies, laws and institutions, as required, within the jurisdiction in which a use will take place, also taking into account Articles 8(j) and 10(c), as appropriate;
- Identify any overlaps, omissions and contradictions in existing laws and policies and initiate concrete actions to resolve them;
- Strengthen and/or create cooperative and supportive linkages between all levels of governance in order to avoid duplication of efforts or inconsistencies.

Practical principle 2: Recognizing the need for a governing framework consistent with international ^{15/} national laws, local users of biodiversity components should be sufficiently empowered and supported by rights to be responsible and accountable for use of the resources concerned. ^{16/}

Rationale:

Uncontrolled access to biodiversity components often leads to over-utilization as people try to maximize their personal benefits from the resource while it is available. Resources for which individuals or communities have use, non-use, or transfer rights are usually used more responsibly because they no longer need to maximise benefits before someone else removes the resources. Therefore sustainability is generally enhanced if Governments recognize and respect the “rights” or “stewardship” authority, responsibility and accountability to the people who use and manage the resource, which may include indigenous and local communities, private landowners, conservation organizations and the business sector. Moreover, to reinforce local rights or stewardship of biological diversity and responsibility for its conservation, resource users should participate in making decisions about the resource use and have the authority to carry out any actions arising from those decisions.

Operational guidelines

- Where possible adopt means that aim toward delegating rights, responsibility, and accountability to those who use and/or manage biological resources;
- Review existing regulations to see if they can be used for delegating rights; amend regulations where needed and possible; and/or draft new regulations where needed. Throughout local customs and traditions (including customary law where recognized) should be considered;
- Refer to the programme of work related to the implementation of Article 8(j) with regard to indigenous and local community issues (decision V/16), implement and integrate tasks relevant for the sustainable use of biodiversity components, in particular element 3, tasks 6, 13 and 14;

^{15/} Where consistency with international law is referred to this recognizes: a) that there are cases where a country will not be a party to a specific international convention and accordingly that law will not apply directly to them; and b) that from time to time countries are not able to achieve full compliance with the conventions to which they are a party and may need assistance.

^{16/} See principle 2 of the ecosystem approach.

- Provide training and extension services to enhance the capacity of people to enter into effective decision-making arrangements as well as in implementation of sustainable use methods;
- Protect and encourage customary use of biological resources that is sustainable, in accordance with traditional and cultural practices (Article 10(c)).

Practical principle 3: *International, national policies, laws and regulations that distort markets which contribute to habitat degradation or otherwise generate perverse incentives that undermine conservation and sustainable use of biodiversity, should be identified and removed or mitigated. 17/*

Rationale: Some policies or practices induce unsustainable behaviours that reduce biodiversity, often as unanticipated side effects as they were initially designed to attain other objectives. For example, some policies that encourage domestic over production often generate perverse incentives that undermine the conservation and sustainable use of biological diversity. Eliminating subsidies that contribute to illegal, unreported and unregulated fishing and to over-capacity, as required by the WSSD Plan of Implementation in order to achieve sustainable fisheries, is a further instance of the recognition of the need to remove perverse incentives.

Operational guidelines

- Identify economic mechanisms, including incentive systems and subsidies at international, national levels that are having a negative impact on the potential sustainability of uses of biological diversity;
- Remove those systems leading to market distortions that result in unsustainable uses of biodiversity components;
- Avoid unnecessary and inadequate regulations of uses of biological diversity because they can increase costs, foreclose opportunities, and encourage unregulated uses thus decreasing the sustainability of the use.

Practical principle 4: *Adaptive management should be practiced, based on:*

(a) Science and traditional and local knowledge;

(b) Iterative, timely and transparent feedback derived from monitoring the use, environmental, socio-economic impacts, and the status of the resource being used; and

(c) Adjusting management based on timely feedback from the monitoring procedures. 18/

Rationale: Biological systems and the economic and social factors that can affect the sustainability of use of biological diversity are highly variable. It is not possible to have knowledge of all aspects of such systems before a use of biological diversity begins. Therefore, it is necessary for the management to monitor the effects of that use and allow adjustment of the use as appropriate, including modification, and if necessary suspension of unsustainable practices. In this context, it is preferable to use all sources of information

17/ See principle 4 of the ecosystem approach.

18/ See principles 9 and 11 of the ecosystem approach.

about a resource when deciding how it can be used. In many societies traditional and local knowledge has led to much use of biological diversity being sustainable over long time-periods without detriment to the environment or the resource. Incorporation of such knowledge into modern use systems can do much to avoid inappropriate use of a resource.

Operational guidelines

- Ensure that for particular uses adaptive management schemes are in place;
- Require adaptive management plans to incorporate systems to generate sustainable revenue, where the benefits go to local stakeholders including indigenous and local communities, to support successful implementation;
- Provide extension assistance in setting up and maintaining monitoring and feedback systems;
- Include clear descriptions of their adaptive management system, which includes means to assess uncertainties;
- Respond quickly to unsustainable practices;
- Design monitoring system on a temporal scale sufficient to ensure that information about the status of the resource and ecosystem is available to inform management decisions to ensure that the resource is conserved;
- When using traditional and local knowledge, ensure that approval of the holder of that knowledge has been obtained.

Practical principle 5: Sustainable use management goals and practices should avoid or minimize adverse impacts on ecosystem services, structure and functions as well as other components of ecosystems. ^{19/}

Rationale: For use of any resource there is a need to take into account the functions that resource may fulfil within the ecosystem in which it occurs, and that use must not adversely affect ecosystem functions. For example, clear felling in a watershed could lead to erosion of soil and impairment of the water filtration function of the ecosystem. Avoidance of this situation would involve setting conservative cutting quotas with appropriate harvesting techniques and monitoring the effects of the harvest as it occurs. As another example, the shrimping industry has developed nets that can separate out juveniles and by-catch and also reduce negative effects on benthic and other associated communities.

Operational guidelines

- Ensure management practices do not impair the capacity of ecosystems to deliver goods and services that may be needed some distance from the site of use. For example, selective cutting of timber in a watershed would help maintain the ecosystem's capacity to prevent soil erosion and provide clean water;
- Ensure that consumptive and non-consumptive use does not impair the long-term sustainability of that use by negatively impacting the ecosystem on which the use depends, e.g., when a tourism operation destroys a coral reef on which it was based;
- Apply a precautionary approach in management decisions in accordance with principle 15 of the Rio Declaration on Environment and Development;

^{19/} See principles 3, 5 and 6 of the ecosystem approach.

- Identify successful experiences of management of biodiversity components in other countries in order to adapt and incorporate this knowledge in their efforts to resolve their own difficulties;
- Where possible consider the aggregate and cumulative impact of activities on the target species or ecosystem in management decisions related to that species or ecosystem;
- Where previous impacts have degraded and reduced biodiversity, support formulation and implementation of remedial action plans (Article 10(d)).
- Where applicable and appropriate, non-consumptive sustainable use strategies should be favored in the case of threatened species.

Practical principle 6: ***Interdisciplinary research into all aspects of the use and conservation of biological diversity should be promoted and supported.***

Rationale: International conventions and national decisions that affect use should always apply the best information on which to base decisions and be aware of the local circumstances where a use is undertaken. In addition, there is need to ensure that research is supported into the biological and ecological requirements of the species to ensure that the use remains within the capacity of the species and ecosystem to sustain that use. Further, to enhance incentives that promote sustainability, there would be value in investing in research to open up new economic opportunities for stakeholders.

Operational guidelines

- Ensure that the results of research inform and guide international, national policies and decisions;
- Invest in research into techniques and technologies of management of biodiversity components that promote sustainability in both consumptive and non-consumptive uses of biodiversity;
- Encourage active collaboration between scientific researchers and people with local and traditional knowledge;
- Encourage international support and technology transfer, relating to both consumptive and non-consumptive uses of biodiversity;
- Develop cooperation between researchers and biodiversity users (private or local communities), in particular, involve indigenous and local communities as research partners and use their expertise to assess management methods and technologies;
- Investigate and develop effective ways to improve environmental education and awareness, to encourage public participation and to stimulate the involvement of stakeholders in biodiversity management and sustainable use of resources;
- Investigate and develop means of ensuring rights of access and methods for helping to ensure that the benefits derived from using components of biodiversity are equitably shared;
- Make research results available in a form which decision makers, users, and other stakeholders can apply;
- Promote exchange programmes in scientific and technical areas.

Practical principle 7: *The spatial and temporal scale of management should be compatible with the ecological and socio-economic scales of the use and its impact. 20/*

Rationale: Management of sustainable use activities should be scaled to the ecological and socio-economic needs of the use. If, for example, fish are harvested from a lake, the owner of the lake should be in charge of, and accountable for, the management of the lake subject to national or, as appropriate, subnational policy and legislation. In case of transboundary resources, it is advisable that appropriate representation from those states participate in the management and decisions about the resources.

Operational guidelines

- Link responsibility and accountability to the spatial and temporal scale of use;
- Define the management objectives for the resource being used;
- Enable full public participation in preparation of management plans to best ensure ecological and socio-economic sustainability.

Practical principle 8: *There should be arrangements for international cooperation where multinational decision-making and coordination are needed.*

Rationale: If a resource is shared between two or more countries then it is advisable to have a bilateral or multilateral agreement between those states to determine how the resource will be used and in what amounts. Absence of such agreements can lead to each state implementing separate management regimes which, when taken together, may mean that the resource is over-utilized.

Operational guidelines

- Make arrangements for international cooperation when the distribution of populations or communities/habitats being used span two or more nations;
- Promote multinational technical committees to prepare recommendations for the sustainable use of shared resources;
- Have bilateral or multilateral agreements between or among the States sharing the resource;
- Spell out the basis for taking decisions governing sustainable use of shared resources in such agreement;
- Establish mechanisms involving the collaborating states to ensure that sustainable use of shared resources does not negatively impact the ecosystem capacity and resilience.

20/ See principles 2 and 7 of the ecosystem approach.

Practical principle 9: *An interdisciplinary, participatory approach should be applied at the appropriate levels of management and governance related to the use.*

Rationale: Sustainability of use depends on biological parameters of the resources being utilized. However, it is recognized that social, cultural, political and economic factors are equally important. It is therefore necessary to take such factors into consideration and involve the stakeholders, including indigenous and local communities and the private sector, and the people experienced in these different fields, at all levels of the decision making process.

Operational guidelines

- Consider providing mechanisms that encourage interdisciplinary cooperation in management of biodiversity components;
- Set standards for resource management activities that promote interdisciplinary consultations;
- Facilitate communication and exchange of information between all levels of decision-making;
- Identify all relevant stakeholders and seek their participation in planning and executing of management activities;
- Take account of socio-economic, political, biological, ecological, institutional, religious and cultural factors that could influence the sustainability of the management;
- Seek guidance from local, traditional and technical specialists in designing the management plan;
- Provide adequate channels of negotiations so that potential conflicts arising from the participatory involvement of all people can be quickly and satisfactorily resolved.

Practical principle 10: *International, national policies should take into account:*

- (a) *Current and potential values derived from the use of biological diversity;*
- (b) *Intrinsic and other non-economic values of biological diversity and*
- (c) *Market forces affecting the values and use.*

Rationale: Recent work in calculating the potential costs of replacing natural systems with man-made alternatives has shown that such natural systems should be valued very highly. It follows that international and national policies that guide trade and development should compare the real value of natural systems against any intended replacement uses before such development is undertaken. For instance, mangroves have the function of fish-spawning and nursery sites, erosion and storm-surge alleviation and carbon sequestration. Coral reefs provide protection for juvenile fish and many species, as well as coastal zone protection.

Operational guidelines

- Promote economic valuation studies of the environmental services of natural ecosystems;
- Incorporate this information in policy and decision making processes, as well as educational applications;
- Consider this principle in relation to land use/habitat conversion tradeoffs. Recognize that market forces are not always sufficient to improve living conditions or increase sustainability in the use of components of biological diversity;

- Encourage governments to take into account biodiversity values in their national accounts;
- Encourage and facilitate capacity building for decision makers about concepts related to economic valuation of biodiversity.

Practical principle 11: *Users of biodiversity components should seek to minimize waste and adverse environmental impact and optimize benefits from uses.*

Rationale: Users should seek to optimize management and to improve selectivity of extractive uses through environmentally friendly techniques, so that waste and environmental impacts are minimized, and socio-economic and ecological benefits from uses are optimized.

Operational guidelines:

- Eliminate perverse incentives and provide economic incentives for resource managers to invest in development and/or use of more environmentally friendly techniques, e.g., tax exemptions, funds available for productive practices, lower loan interest rates, certification for accessing new markets;
- Establish technical cooperation mechanisms in order to guarantee the transfer of improved technologies to communities;
- Endeavour to have an independent review of harvests to ensure that greater efficiencies in harvest or other extractive uses do not have a deleterious impact on the status of the resource being used or its ecosystem;
- Identify inefficiencies and costs in current methods;
- Conduct research and development into improved methods;
- Promote or encourage establishment of agreed industry and third party quality standards of biodiversity component processing and management at the international and national levels;
- Promote more efficient and humane use of biodiversity components and reduce collateral damage to biodiversity.

Practical principle 12: *The needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the equitable distribution of the benefits from the use of those resources.*

Rationale: Local stakeholders, including indigenous and local communities, often shoulder significant costs or forgo benefits of potential use of biological diversity, in order to ensure or enhance benefits accruing to others. Many resources (e.g., timber, fisheries) are over-exploited because regulations are ignored and not enforced. When local people are involved as stakeholders such violations are generally reduced. Management regimes are enhanced when constructive programs that benefit local communities are implemented, such as capacity training that can provide income alternatives, or assistance in diversifying their management capacities.

Operational guidelines:

- Promote economic incentives that will guarantee additional benefits to the local stakeholders, including indigenous and local communities, who are involved in the management of any biodiversity components, e.g., job opportunities for local peoples, equal distribution of returns amongst locals and outside investors/co-management;

- Adopt policies and regulations that ensure that local stakeholders, including indigenous and local communities, who are engaged in the management of a resource for sustainable use receive an equitable share of any benefits derived from that use;
- Ensure that national policies and regulation for sustainable use recognize and account for non-monetary values of natural resources;
- Consider ways to bring uncontrolled use of biological resources into a legal and sustainable use framework, including promoting alternative non-consumptive uses of these resources;
- Ensure that an equitable share of the benefits remain with the local people in those cases where foreign investment is involved;
- Involve local stakeholders, including indigenous and local communities, in the management of any natural resource and provide those involved with equitable compensation for their efforts, taking into account monetary and non-monetary benefits;
- In the event that management dictates a reduction in harvest levels, to the extent practicable assistance should be provided for local stakeholders, including indigenous and local communities, who are directly dependent on the resource to have access to alternatives.

Practical principle 13: *The costs of management and conservation of biological diversity should be internalized within the area of management and reflected in the distribution of the benefits from the use. 21/*

Rationale: The management and conservation of natural resources incurs costs. If these costs are not adequately covered then management will decline and the amount and value of the natural resources may also decline. It is necessary to ensure that some of the benefits from use flow to the local natural resource management authorities so that essential management to sustain the resources is maintained. Such benefits may be direct, such as entrance fees from visitors to a national park paid directly to, and retained by, the park management authority or indirect, such as stumpage tax revenue from timber harvesting paid by loggers that flows through a national treasury to a local forest service. In some cases licence fees for fishing rights are paid directly to the management authority, or to the national treasury.

Operational guidelines

- Ensure that national policies do not provide subsidies that mask true costs of management;
- Ensure that harvest levels and quotas are set according to information provided by the monitoring system, not the economic needs of the management system;
- Provide guidelines for resource managers to calculate and report the real cost of management in their business plans;
- Create other alternative mechanisms to invest revenues from biodiversity management;
- Provide economic incentives for managers who have already internalized environmental costs, e.g., certification to access new markets, waiver or deferral of taxes in lieu of environmental investment, promotion of “green-labelling” for marketing.

Practical principle 14: *Education and public awareness programmes on conservation and sustainable use should be implemented and more effective methods of communications should be developed between and among stakeholders and managers.*

Rationale: To ensure that people are aware of the connectivity between different parts of biological diversity, its relevance to human life, and the effects of uses it is advisable to provide means to engage people in education and awareness of the opportunities and constraints of sustainable use. It is also important to educate people on the relationship of sustainable use and the other two objectives of the Convention. An important way to achieve sustainable use of biological diversity would be to have in place effective means for communications between all stakeholders. Such communications will also facilitate availability of the best (and new) information about the resource.

Operational guidelines

- Plan education and public-awareness activities concerning: management, values of sustainable use, changing consumptive patterns and the value of biodiversity in the lives of people;
- Ensure that public-awareness programmes also inform and guide decision makers;

^{21/} See the operational guidance for the application of the ecosystem approach (decision V/6, annex, section C, para. 11).

- Target all levels of the chain of production and consumption with such communications;
- Report lessons learned about sustainable use activities to the clearing-house mechanism of the Convention on Biological Diversity;
- Encourage and facilitate communication of lessons learned and best practices to other nations;
- Ensure that resource users report to government on their activities in a manner that facilitates broader communications;
- Increase awareness of the contributions of knowledge, practices and innovations of indigenous and local communities for the sustainable use of biological diversity.

IX/8. Management of forest biodiversity, sustainable use to derive products and services and benefit-sharing

The Subsidiary Body on Scientific, Technical and Technological Advice:

Recalling decision VI/22, which, in order to assist Parties with the implementation of the expanded programme of work on forest biological diversity, requested the Executive Secretary to compile a report addressing the management of forest biological diversity, sustainable use to derive products and services, and benefit sharing;

1. *Welcomes* the report on management of forest biodiversity to derive products and services and benefit-sharing (UNEP/CBD/SBSTTA/9/9/Add.1), which contains country experiences, needs and information gaps on sustainable forest management; and

2. *Recommends* that the Conference of the Parties at its seventh meeting consider the information contained in sections I to VII of the report and encourage Parties and other Governments to use the information in their implementation of the expanded programme of work on forest biological diversity under its element 1, goal 4, objective 1 on sustainable use of forest resources.

IX/9. Elaboration of proposals for the application of ways and means to remove or mitigate perverse incentives

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recognizing the need to remove policies or practices that create perverse incentives that lead to the degradation and loss of biological diversity, or to mitigate these perverse incentives, as a crucial element in national and global strategies to halt the degradation and loss of biodiversity,

Stressing that these incentives and mitigation measures should not adversely affect biodiversity and livelihoods of other communities, and should be applied in a manner consistent with international law,

Noting that the draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity also call for the removal or mitigation of policies, laws and regulations that generate perverse incentives,

Underlining the need for further policy guidance on this issue, in particular with regard to the application of ways and means to remove or mitigate perverse incentives,

Recognizing that new policies should also be examined with a view to identifying, and avoiding, potential perverse incentives,

Recalling the programme of work on incentive measures established in decision V/15 of the Conference of the Parties and the recognition by the Conference of the Parties at its sixth meeting that further work needs to be undertaken on the role of positive incentives and their performance as well as on perverse incentives and ways and means for their removal or mitigation, as reflected in decision VI/15,

Recognizing that the development and application of practical methods of assessing trends in the economic and social value of biodiversity and of demonstrating the economic and ecological consequences of biodiversity loss are essential elements in meeting the 2010 target,

Recognizing the important work undertaken by the Organisation for Economic Co-operation and Development and the Millennium Ecosystem Assessment regarding the economic aspects of biodiversity and the assessment of biodiversity values,

Takes note of the proposals for the application of ways and means to remove or mitigate perverse incentives as elaborated by the second workshop on incentive measures, and appreciates its work

Recommends that the Conference of the Parties to the Convention on Biological Diversity:

Proposals for the application of ways and means to remove or mitigate perverse incentives

(a) *Further considers*, with a view to reviewing and endorsing, the proposals for the application of ways and means to remove or mitigate perverse incentives annexed to the present recommendation as a general framework to address the removal or mitigation of perverse incentives in different economic sectors and ecosystems.

(b) *Decides*, after the consideration mentioned in subparagraph (a) above, that the proposals could be integrated into the implementation of the thematic programmes of work of the Convention, and that the experiences gained in the implementation of the thematic programmes of work on the removal or mitigation of perverse incentives should feed into the further elaboration of the proposals;

(c) *Requests* the Executive Secretary, after their adoption by the Conference of Parties, to disseminate the proposals to other relevant international organizations and processes addressing perverse incentives as well as to other biodiversity related conventions, and *invites* these entities to further cooperation with the Convention on Biological Diversity on removing or mitigating perverse incentives;

(d) *Invites* competent international organizations and agencies to provide technical and financial support to the efforts of Parties and Governments to apply these proposals with a view to removing or mitigating perverse incentives;

(e) *Invites* Parties and Governments to use these proposals as guidance in their efforts to identify and remove or mitigate policies or practices that generate perverse incentives, and to extend their efforts to an examination of new policies with a view to identifying, and avoiding, potential perverse incentives;

(f) *Invites* Parties and Governments to use these proposals as further guidance in implementing the draft Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity and, in particular, principles 2 and 3, which address incentive measures;

(g) *Invites* Parties, Governments and relevant organizations to submit any information on the removal or mitigation of perverse incentives, including case-studies and best-practices on the application of ways and means as well as their experiences with the application of the proposals, to the Executive Secretary for dissemination through the clearing-house mechanism;

(h) *Decides* that the progress made by Parties in removing or mitigating perverse incentives should be included in their national reports prepared in accordance with Article 26 of the Convention as appropriate;

Further implementation of the programme of work on incentive measures

(i) *Invites* Parties, Governments and international organizations to submit case-studies, best practices and other information on the use of positive incentive measures for the conservation and sustainable use of biodiversity and on the application of methodologies for the assessment of values of biodiversity and its functions, as well as other tools for prioritization in decision-making, to the Executive Secretary;

(j) *Requests* the Executive Secretary to make this information available through the clearing-house mechanism and other means, if appropriate;

(k) *Requests* the Executive Secretary to prepare, in cooperation with the World Bank Institute, the Organisation for Economic Co-operation and Development and other relevant international organizations, an analysis of existing and new instruments that provide positive incentives, their interaction with other policy measures and their effectiveness, including their requirements for successful application, possible limitations and shortcomings, and to develop proposals on the application of such positive incentive measures and their integration into relevant policies, programmes or strategies, for consideration by the Subsidiary Body for Scientific, Technical and Technological Advice at a meeting prior to the eighth meeting of the Conference of the Parties;

(l) *Requests* the Executive Secretary to explore, in cooperation with the Millennium Ecosystem Assessment, the Organisation for Economic Co-operation and Development and relevant international organizations, existing methodologies for valuation of biodiversity and biodiversity resources and functions, as well as other tools for prioritization in decision-making, by preparing a compilation of existing valuation tools, including non-market methods, that provides an overview of the discussion on their methodological status, if appropriate, as well as an assessment of their applicability in terms of effectiveness and capacity preconditions, and to prepare proposals for the application of such tools. These proposals should include the identification of options to strengthen international collaborative partnerships for assessing biodiversity values, especially for the refinement and advancement of valuation tools.

Annex

PROPOSALS FOR THE APPLICATION OF WAYS AND MEANS TO REMOVE OR MITIGATE PERVERSE INCENTIVES

A. General considerations

1. For the purpose of these indicative guidelines, the term *policy* shall refer to a system of strategies, plans and programmes that spell out, *inter alia*, operational targets, and a related set of legal,

administrative and/or economic tools that are implemented by national, sub-national and local governments to attain a set of underlying objectives. The term *practice* shall refer to any activity undertaken by individuals, communities, companies and organizations that is based on customary law, social norms or cultural traditions.

2. A *perverse incentive* emanates from policies or practices that encourage, either directly or indirectly, resource uses leading to the degradation and loss of biological diversity. The removal of such policies or practices or the mitigation of their perverse effects is therefore an important element in promoting the conservation and sustainable use of biological diversity.

3. Three phases are suggested in the process of removing such policies or practices or in mitigating their perverse effects on biological diversity, all of which should be implemented with stakeholder participation:

- (a) The identification of policies or practices that generate perverse incentives and their impacts;
- (b) The design and implementation of appropriate reforms;
- (c) The monitoring, enforcement and evaluation of these reforms.

4. The following sections provide indicative guidance, corresponding to these three phases on the application of ways and means to remove policies or practices generating perverse incentives.

B. Identification of policies or practices that generate perverse incentives

1. Principles for identifying policies and practices that generate perverse incentives

5. *Review of policies and practices.* Not every single policy measure and, in particular, not every incentive measure, leads to adverse effects for biodiversity. A thorough study, critical review and evaluation of policies and practices potentially contributing to biodiversity loss, including the assessment of their impact on biodiversity as well as their effectiveness and efficiency, is therefore essential to identify properly and comprehensively any specific policies or practices and their interaction that are responsible for such decline. Indicator systems are an important means to inform such an analysis. Parties and governments should engage in the further development of such systems.

6. *Interaction between policies and practices, and with other root causes.* The study should take fully into account that the loss of biodiversity may be caused by a complex interaction of several root factors. Consequently, the identification of perverse incentives resulting from specific policies and practices is often difficult, as their extent may crucially depend on the design and degree of implementation and enforcement of other policies, and on other socio-economic root causes. The removal or mitigation of such policies and practices, although necessary, may not be sufficient to halt the loss of biodiversity if other macro-economic and sectoral policies and key socio-economic reasons remain unchanged.

7. *Identification of perverse practices.* Special analytical care is needed if practices are to be held accountable for any adverse impacts on biological diversity. Such practices are difficult to change as they are rooted in cultural traditions or customary law, which may have wider social values. Furthermore, perverse incentives may be often be explained by an economically rational response to ill-adapted policies. The analysis should determine whether the promotion of cultural adaptation is appropriate or whether the reform of policies, or a combination of both, provides better opportunities for an effective policy intervention.

8. *Scope of perverse incentives.* In some instances, policies and practices may generate perverse incentives only under specific local conditions and socio-economic circumstances, while they may prove to be neutral or even favourable for biological diversity under other conditions and circumstances. The study should therefore seek to identify and quantify, whenever feasible and appropriate, the *scope* and

extent to which such policies and practices adversely affect biodiversity, as this information is important for prioritization and for choosing the appropriate policy response.

9. *Differentiation of policy objectives, operational targets, and tools.* Policies that induce unsustainable behaviour are often designed to attain legitimate objectives. Biodiversity decline usually comes as an un-anticipated side-effect of such policies. In particular, subsidies have often been introduced for good and sound purposes. However, the operational targets of the policy and the tools that are used to attain these targets are not always appropriate to meet the proclaimed objectives. Furthermore, the policy objectives, even while initially good and sound, may no longer be valid. Once a specific policy is identified in generating perverse incentives, further analytical work should therefore differentiate the underlying objectives, operational targets and the specific policy tools used, in order to identify the appropriate entry point for policy reform.

10. *Identification of all relevant costs and benefits and their distribution.* The identification of all relevant costs and benefits from removing or mitigating policies or practices that generate perverse incentive as well as their distribution within society and the economy is key for a well-informed policy choice. Hence, the assessment should not only include the direct, tangible costs and benefits, but also the intangible costs and benefits for society as a whole. The use of appropriate valuation tools should be considered if feasible. Furthermore, when assessing the merits of mitigation policies, the following cost components should also be taken into consideration: compliance costs, monitoring and enforcement costs, administrative costs and costs of change management.

11. *Identification of obstacles for policy reform.* The following elements should also be identified, as they are crucial for the design of implementable policy responses:

(a) Relevant obstacles for the removal of policies and practices generating perverse incentives, such as distributional issues, property rights, entrenched interests, cultural traditions, international considerations;

(b) Relevant obstacles for the implementation of policies that mitigate such perverse incentives, such as international obligations, lack of funds or lack of administrative and/or institutional capacity.

12. *Periodic policy evaluations.* The lack of evaluation of policy efficacy and efficiency contributes to the persistence of policies that create perverse incentives and do not assist in achieving what may still be legitimate policy objectives. Periodic quantitative policy evaluation, which includes biodiversity impacts, is desirable for various reasons: it provides criteria for the selection of the most desirable policy reform interventions, it assists in the identification of relevant stakeholders (winners and losers), creates political and evidentiary support for change of ineffective and perverse incentives, gives an indication of policy alternatives and provides an indication of the cost of removal of the perverse incentives. The establishment of periodic quantitative evaluation of the effectiveness of policy instruments and an assessment of any perverse incentives created by them would enable the development of win-win policy reforms. International organizations are highly requested to cooperate in this effort.

13. *Prioritization.* The analysis should enable prioritization of subsequent reforms to remove or mitigate perverse incentives, that is, it should enable to spell out which reforms to take up first, and which ones to take up later. Such a prioritization exercise should be based on a set of criteria, including the feasibility and ease of policy reform, the importance and extent of biodiversity degradation, and socio-economic concerns.

2. *Ways and means to identify policies and practices that generate perverse incentives*

14. *Strategic environmental assessment.* Elements of strategic environmental assessment (SEA) procedures could be used, if appropriate, as a means to identify policies and practices that generate perverse incentives. In this regard, the Guidelines for Incorporating Biodiversity-related Issues into Environmental Impact Assessment Legislation and/or Processes and in Strategic Environmental Assessment (decision VI/7, annex) could be taken into consideration. While mainly used for *proposed*

policies, SEA procedures provide useful guidance on how to design and conduct research to identify perverse incentives for biodiversity conservation and sustainable use that emanate from *existing* policies. In particular, the following steps emerge as possible means of assessing policies and practices with regard to potential perverse incentives:

- (a) Screening to determine which policies or practices require full or partial study with regard to possible perverse incentives;
- (b) Scoping to identify which potential impacts on biological diversity are relevant to address, and to derive terms of reference for the actual study;
- (c) The actual study to identify the perverse incentives for biodiversity conservation and sustainable use emanating from policies and practices, taking into account those impacts that result from the interaction of different policies and practices;
- (d) The identification of possible action to remove or mitigate perverse incentives;
- (e) The identification of possible reform obstacles;
- (f) Pursuant to the design and implementation of reform policies, monitoring and evaluating the implementation of such reform policies, to ensure that unpredicted outcomes and failed mitigation measures are identified and addressed in a timely fashion.

15. *Stakeholder involvement.* The involvement of all stakeholders is an important element in identifying policies or practices that generate perverse incentives. The direct benefits of policies often go to well organized societal actors, while the costs of these policies, e.g., the loss of ecosystem services due to biodiversity decline, are borne by the wider public or by diffuse and/or powerless groups. Such groups, however, may be able to forward additional important information and to point to possible shortcomings in the conclusions of the assessment. It should therefore be ensured, through appropriate mechanisms of levelling the playing field for all stakeholders, that all groups are fully involved throughout the process. A balanced representation of stakeholders in the consultation will contribute to identifying properly and comprehensively both the benefits of individual policies and their possible shortcomings.

16. *Transparency.* Perverse incentives are often difficult to detect, because the negative impacts on biodiversity are usually an indirect by-product of policies aiming at other goals, and because they may result from an intricate interaction between different policies or practices. Ensuring that the process of assessing policies and practices is conducted in a transparent manner will contribute to ensure that all relevant stakeholders are well-informed about the process and its outcomes. This is an important pre-condition for effective stakeholder involvement.

17. *Capacity-building.* In developing countries and countries with economies in transition, lack of institutional and administrative capacity to design and conduct appropriate assessment studies is often a serious impediment to identifying policies and practices that generate perverse incentives. Capacity-building, supported by relevant national, regional and international organizations, is therefore an important prerequisite in successfully removing or mitigating policies and practices that generate perverse incentives. Funding should be ensured for capacity-building.

C. Design and implementation of appropriate reforms

1. Guidelines for the choice of reforms

18. *Possible political action.* The following is an indicative list of possible political action once specific policies and practices are identified as generating perverse incentives for the conservation and sustainable use of biological diversity, bearing in mind that, in some instances, several such activities need to be undertaken simultaneously, and also recalling that reforms of other macro-economic and

sectoral policies may often be necessary to capture the full benefits of removing or mitigating perverse incentives and to halt the loss of biodiversity:

- (a) Removal of the policy or practice;
- (b) Removal of the policy and its replacement with another policy that attains the same objectives, but without or with fewer perverse impacts on biological diversity (re-instrumentation);
- (c) In those cases where a policy or practice has overall negative impacts but some positive impacts, removal of that policy or practice and introduction of an additional policy that seeks to maintain the positive impacts;
- (d) Removal of the policy or practice, combined with measures to overcome obstacles for policy reform;
- (e) Introduction of policies that mitigate the perverse impacts on biodiversity of policies or practices, possibly including policies that address relevant obstacles.

19. The following paragraphs provide an indicative list of conditions for the selection of political action further to the identification of policies or practices that generate perverse incentives. Some conditions make reference to costs and/or benefits. It is important to note that the policy choice should be based not only on the direct, tangible costs and benefits, but also on an assessment of the intangible costs and benefits, including, for instance, benefits emanating from ecosystems services. Furthermore, the assessment should also include components such as compliance costs, monitoring and enforcement costs, administrative costs and the costs of change management, if appropriate. Maximizing the net social benefit, taking into account distributional objectives and effects at national and global levels, is the criterion for the choice of reform policies.

20. *Removal of policies that generate perverse incentives.* The removal of policies that generate perverse incentives could be considered when the following conditions are met:

- (a) The analysis may reveal that a policy generating perverse incentives was introduced under circumstances that no longer prevail. As a consequence, the policy objectives may no longer be valid. For instance, the objective of providing support to companies whose sector undergoes a period of economic crisis would no longer be valid after the recovery or the successful restructuring of this sector;
- (b) In other cases, the policy objective may still be valid. The analysis may show, however, that perverse incentives would be generated under any policy to attain this objective, that is, under any operational target and policy tool chosen. In such cases, the removal of the policy should be considered if the costs for society of effective mitigation policies would be higher than the net societal benefits foregone when the policy is removed.

21. *Removal of perverse practices.* The removal of practices that generate perverse incentives should be considered if a careful analysis of their interplay with formal policies reveals that such practices are indeed the appropriate target for reform policies. Such practices are difficult and costly to remove, because of the very fact that they are rooted in cultural traditions or customary law. Their removal should be considered if the cost of promoting cultural adaptation, through for instance appropriate awareness-raising and education programmes, is lower than the cost of effective mitigation policies. Furthermore, it has to be recalled that perverse incentives, apparently caused by specific practices, may often be explained by an economically rational response to ill-adapted policies. In those cases, the reform of these policies may often provide better opportunities for an effective policy intervention.

22. *Re-instrumentation.* In many cases, the underlying policy objective may still be valid and legitimate, and the perverse incentives emanating from the policy could be substantially lowered or avoided if other operational targets and tools would be used. In such instances, the removal of the policy

and its replacement by a policy with fewer or no perverse impacts should be considered. Special care should be paid to identifying and implementing those operational targets and related tools that generate the least or no adverse impact on biological diversity.

23. *Removal and introduction of policies that maintain any positive impacts.* In some cases, policies and practices may generate perverse incentives under specific local conditions and socio-economic circumstances, while they may even be favourable for biological diversity under other conditions and circumstances. In these cases, the removal of these policies and practices should still be envisaged if the overall effect on biological diversity is mainly negative. Additional, well-targeted policies could be introduced to maintain the positive impacts.

24. *Removal and overcoming of obstacles.* Substantial obstacles may sometimes hinder the removal of policies and practices. Additional policies to overcome such obstacles could be introduced if the associated costs are lower than the costs of effective mitigation. The choice of the appropriate policy would clearly depend on the relevant obstacle identified:

(a) *Distributional concerns.* In some cases, the removal of policies or practices may have adverse distributional consequences. The impact of reforms on food security and poverty should be of particular concern. A step-by-step approach to the reforms could be considered. Additional well-targeted income policies could also be implemented to compensate these adverse effects;

(b) *Legal issues.* In some cases, the removal of policies may impinge on the property rights of some stakeholders. Compensation of associated losses might be required;

(c) *Entrenched interests.* In most cases, some groups or individuals will lose as a result of the removal of policies or practices. Such groups or individuals will resist such reform. Additional policy measures may be warranted to overcome their resistance. Such measures may include awareness-raising and education programmes as well as measures to increase transparency for the wider public with regard to the adverse impact of policies and practices, thereby shifting the burden of proof to those groups opposing political reform. Compensatory policies for such stakeholders should only be considered as a last resort;

(d) *Lack of capacity.* In developing countries and countries with economies in transition, lack of institutional and administrative capacity is often a serious impediment to removing or mitigating perverse incentives. Capacity-building will be needed in these cases;

(e) *Cultural traditions.* The removal of practices generating perverse incentives is particularly difficult if they are deeply rooted in cultural beliefs, customs and traditions. Awareness-raising and education programmes can be appropriate means to overcome such obstacles;

(f) *International competitiveness.* Unilateral removal of policies that generate perverse incentives may create a risk that domestic industries lose competitiveness. Such risks become more important in a globalized world of increased international trade and capital flows. When evidence for such cases is compelling, international cooperation to remove such policies in a coordinated, synchronized way may be warranted;

(g) *Global benefits of removing perverse incentives.* In many cases, the benefits arising from a removal of policies that generate perverse incentives for the conservation and sustainable use of biodiversity are of a global nature, while the costs of removing such policies accrue at the national level. In such cases, international cooperation, including the extension of the activities of international financial compensatory mechanisms such as the Global Environment Facility (GEF), is warranted to cover the possible incremental national costs of generating global benefits.

25. *Mitigation.* If the removal of policies or practices is not feasible or too costly, the mitigation of their perverse effects on biodiversity, through appropriate means, may be warranted. More specifically, the introduction of such mitigation policies should be considered if:

(a) The cost for society of removing policies and practices, including forgone benefits, would be higher than the cost of effective mitigation policies;

(b) The cost for society of replacing the policy by a policy serving the same objective with less of no perverse impacts would be higher than the cost of effective mitigation policies;

(c) The cost for society of overcoming obstacles to the removal of policies and practices are higher than the cost of effective mitigation policies.

2. *Ways and means to remove or mitigate perverse incentives*

(a) *Important tools for removal and mitigation*

26. *National guidelines.* Guidelines that are adopted by competent national authorities will be an important indirect means to effectively remove or mitigate perverse incentives. Guidelines that are well adapted to national needs and circumstances may serve to structure and inform the national process of identifying as well as removing or mitigating policies and practices that generate perverse incentives. If made publicly available, they may serve as a benchmark against which the general public can gauge the effectiveness of the reform process.

27. *Stakeholder involvement.* The removal of policies or practices that generate perverse incentives is often opposed by influential groups or individuals that profit from these policies or practices. Even when it is not the stated objective of a policy to support such groups or individuals, its removal may be at risk because of their influence. In contrast, the costs of these policies, e.g., the loss of ecosystem services due to biodiversity decline, are borne by the wider public or by diffuse and/or powerless groups. The empowerment and involvement of such groups during the design and implementation phase, through appropriate mechanisms of levelling the playing field for all stakeholders, is therefore another important means to ensure that appropriate policy responses are implemented.

28. *Awareness-raising and education programmes.* The very fact that practices that generate perverse incentives are rooted in customary law, social norms or cultural traditions implies that considerable obstacles exist to their removal, obstacles that are beyond the immediate reach of formal policy-making. The more indirect approach of awareness-raising and education may therefore be a particularly important means in removing such practices. However, awareness-raising and education programmes will also be an important element in successfully removing policies or introducing mitigation policies, to overcome the resistance of powerful groups opposing their removal.

29. *Transparency.* Creating transparency with regard to the intermediate and final outcomes of the assessment study, that is, with regard the objectives, costs, and possible negative impacts of policies and practices will contribute to clarifying the implicit choices and priorities and will expose irresponsible policies and practices to the wider public. Transparency will therefore be an important element of a successful programme to raise awareness of these issues. As a consequence, it will also increase the political costs of irresponsible policies and generate political rewards for appropriate action.

30. *Capacity-building.* In developing countries and countries with economies in transition, lack of institutional and administrative capacity is often a serious impediment to removing or mitigating perverse incentives. While some policies that generate perverse incentives can, in principle, be easily removed, the removal of practices or the implementation of successful mitigation policies may require substantial institutional and administrative capacity. Capacity-building, supported by relevant national, regional and international organizations, is therefore a key precondition in successfully removing or mitigating policies and practices that generate perverse incentives for the conservation and sustainable use of biological diversity. Funding should be ensured for capacity-building.

31. *International cooperation.* International cooperation is a very important element in removing or mitigating perverse incentives as set out in paragraph 24 (f) and (g) above.

(b) *Ways and means for removal*

32. *Re-instrumentation.* In the case of legitimate and valid policy objectives, re-instrumentation, that is, the application of operational targets and related tools that attain the same objective with less or no adverse impacts on biological diversity, may often be a particularly effective way of removing policies that generate perverse incentives for the conservation and sustainable use of biodiversity.

33. *Compensatory policies.* The introduction of additional measures could be considered to compensate stakeholders that are negatively affected by the removal of policies that generate perverse incentives. Provided that funding is ensured, the use of compensatory policies could be considered in following cases:

(a) If the removal of policies will have an adverse effect on distributional objectives, a step-by-step approach to removing such policies could be taken, and additional, well targeted income policies could be implemented;

(b) If the removal of policies negatively affects the property rights of some stakeholders, the compensation of associated losses could also be envisaged;

(c) If the conditions spelled out under (a) and (b) above do not prevail, compensatory policies should only be used as a last resort.

(c) *Ways and means for mitigation*

34. *Regulation.* In some instances, the introduction of additional regulation may be an effective means to mitigate the perverse impacts on biodiversity, provided that a number of preconditions are met. Such preconditions include:

(a) The existence of well defined, comprehensive and measurable performance indicators;

(b) Manageable monitoring and enforcement costs;

(c) Regulations that can be designed in a comprehensive way so as to avoid adaptive behaviour of target groups, leading to secondary adverse effects on biological diversity.

35. *Overcoming obstacles to mitigation through regulation.* It should be borne in mind that the very obstacles that prevent the removal of policies may also impede the effective mitigation of their perverse effects. For instance, the incentive of target groups not to comply with the regulation may be especially high if the policy generating the perverse incentive remains in place unchanged. Therefore, awareness-raising, transparency and stakeholder involvement are important elements of effective regulatory policies to mitigate perverse incentives.

36. *Positive incentive measures.* The introduction of additional positive incentive measures is another possible means to mitigate the perverse impacts of some policies and practices. In addition to the preconditions enumerated in paragraph 34, a number of other caveats should be taken into consideration when using positive incentive measures:

(a) If policies having perverse impacts on biodiversity remain unchanged, the cost of using positive incentives for mitigating these impacts will be especially high, which, in turn, will impair the efficiency of using this instrument. Prior to using positive incentives, such policies should therefore be removed to the extent possible, through the means enumerated above;

(b) As explained in paragraph 23, policies and practices that generate perverse incentives in most circumstances may have a favourable impact on biological diversity in others. In such cases, the use of positive incentive measures could be considered to mitigate the negative effect of removing these policies and practices;

(c) The careful design of the incentive measure, including the proper specification of eligibility conditions, is especially important in the case of positive incentive measures to avoid the generation of secondary adverse effects on biological diversity;

(d) In some cases, the strategic behaviour of rational recipients will impede the long-term effectiveness of positive incentive measures. In such cases, their use should be restricted to a transitional period of time through appropriate legal means such as sunset legislation;

(e) Lack of funds may limit the use of positive incentive measures;

(f) The use of positive incentive measures may have both negative and positive distributional consequences. These consequences need to be taken into consideration when using positive incentive measures.

37. *Negative incentive measures.* The use of negative incentive measures could also be considered to mitigate the perverse impacts of some policies and practices. In addition to the preconditions enumerated in paragraph 34 above, political resistance will often be especially severe if negative incentive measures are to be introduced. Therefore, awareness-raising, transparency and stakeholder involvement are key elements of a successful introduction of negative incentive measures to mitigate perverse incentives.

38. *Guidance on the use of incentive measures.* Further guidance with regard to the design and implementation of incentive measures is given in the proposals for the design and implementation of incentive measures, endorsed by the Conference of the Parties to the Convention on Biological Diversity at its sixth meeting (decision VI/15, annex I).

D. Monitoring, enforcement and evaluation of reforms

39. *Stakeholder involvement.* Even after the design and implementation of reforms, relevant stakeholders should be involved in evaluation to ensure their feedback on unanticipated side-effects, failed mitigation measures and other shortcomings, and to ensure that such shortcomings are addressed in a timely fashion.

40. *Indicators and information systems.* It should be considered to introduce appropriate information systems in order to facilitate the process of monitoring and enforcing reforms. Furthermore, the development and application of sound indicators is a crucial precondition to the useful evaluation of reform policies.

41. *Success criteria for evaluation.* The evaluation of reforms should be based on a set of sound success criteria.

42. *Transparency.* Further dissemination of information can play a key role in building and maintaining public support for the reforms, and can thereby contribute to lower monitoring and

enforcement costs for public authorities. Again, transparency may be a crucial precondition to ensuring effective stakeholder involvement in evaluating reforms.

43. *Capacity-building.* The ultimate success of the chosen reform is contingent upon successful monitoring, enforcement and evaluation of its impact, including unanticipated side-effects, failed mitigation measures and other shortcomings. It therefore depends on sufficient institutional and administrative capacity. Funding should be available for capacity-building.

IX/10. Monitoring and indicators: designing national-level monitoring programmes and indicators

The Subsidiary Body on Scientific, Technical and Technological Advice

1. *Recommends* that the Conference of the Parties:

(a) *Notes* the indicators already in use by Parties as reported in annex I to the note by the Executive Secretary on designing national-level monitoring programmes and indicators prepared for the ninth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (UNEP/CBD/SBSTTA/9/10), and *welcomes* the ongoing efforts on the development of biodiversity indicators within the various thematic programmes and cross-cutting themes of the Convention;

(b) *Also welcomes* the report prepared by the expert meeting on indicators of biological diversity including indicators for rapid assessment of inland water ecosystems (UNEP/CBD/SBSTTA/9/INF/7);

(c) *Expresses its gratitude to* the Government of the United Kingdom of Great Britain and Northern Ireland for its financial support for the expert meeting on indicators of biological diversity, the co-chairs and all the experts for their contributions to the meeting;

(d) *Notes and encourages* the collaboration between the Convention on Biological Diversity and other conventions and organizations in facilitating the development of national level indicators and monitoring programmes that Parties may draw upon if they so wish;

(e) *Recognizes* that regional and national differences and different national priorities on the conservation and sustainable use of biodiversity necessitates a flexible approach at the national level but that there are benefits in promoting a more consistent framework for data gathering, computation and reporting that can contribute to the development of commonly agreed indicators at regional and global levels;

(f) *Urges* all Parties that have not done so to develop a set of biodiversity indicators as part of their national strategies and action plans, taking into account, as appropriate, the targets of the Global Strategy for Plant Conservation and the target to achieve by 2010 a significant reduction in the current rate of biodiversity loss at the global, regional and national level, as well as the guidance, lessons learned and list of indicators provided in the note by the Executive Secretary (UNEP/CBD/SBSTTA/9/10) document, and to report on progress to the Conference of the Parties at its eighth meeting;

(g) *Invites* Parties, other Governments and relevant organizations to make use of biodiversity indicators in their assessment of biodiversity, in particular in their assessment of progress towards the achievement of globally agreed targets such as those of the Global Strategy for Plant Conservation, the Strategic Plan of the Convention, the Plan of Implementation of the World Summit on Sustainable Development and the Millennium Development Goals;

(h) *Agrees* that the framework contained in annex II to note by the Executive Secretary (UNEP/CBD/SBSTTA/9/10) provides useful guidance for the development of national-level biodiversity indicators and monitoring, emphasizing the use of existing national data, indicators and evaluation methods in a participatory and accessible approach;

(i) *Recognizes* that the development and use of indicators, particularly in the development phase, requires a financial and technical commitment from Parties, and therefore *encourages* bi-lateral and multilateral funding agencies to assist developing countries, in particular the least developed and small island developing States among them, and countries with economies in transition through the

provision of financial assistance and training, as required, to develop and implement effective biodiversity indicators;

(j) *Acknowledges* that the GEF-funded project on biodiversity indicators in national use might illustrate how each step proposed in the guidelines for indicator development contained in this document could be carried out in practice and thereby provides lessons on the practical development of biodiversity indicators;

(k) *Encourages* Parties to share experience in the development and use of indicators and monitoring and to cooperate and promote, where useful, harmonized procedures and formats for data acquisition, computation and reporting, especially at subregional and regional levels;

(l) *Requests* the clearing-house mechanism of the Convention to develop an effective system of information sharing on lessons learned on the development of national-level biodiversity indicators and monitoring, including through the presentation of worked examples and case-studies;

(m) *Requests* the Executive Secretary to further develop the identification, development and testing of indicators based on accrued experience and making particular efforts on indicators (i) concerning the fair and equitable sharing of the benefits arising out of the utilization of genetic resources; and (ii) on the status and trends of biodiversity at the genetic level, taking into account the ongoing work of the Food and Agriculture Organization of the United Nations (FAO), the International Plant Genetic Resources Institute (IPGRI), the Organisation for Economic Co-operation and Development (OECD) and other relevant organizations, and *invites* him to report on progress for the ninth meeting of the Conference of the Parties;

(n) *Also requests* the Executive Secretary to identify, and bring to the attention of Parties, areas with potential for better co-ordination and integration, as applicable, between sets of indicators prepared within the various programmes of work and cross-cutting themes of the Convention to avoid duplication of efforts in developing indicators, data-gathering and reporting, particularly at the national level;

(o) *Further requests* the Executive Secretary to update, complete and make available, through the clearing-house mechanism, the indicative list of indicator initiatives and sources of information contained in appendix 2 to annex II to the note by the Executive Secretary (UNEP/CBD/SBSTTA/9/10).

IX/11. Biodiversity and climate change

The Subsidiary Body on Scientific, Technical and Technological Advice

1. *Welcomes* the report of the Ad Hoc Technical Expert Group on Biodiversity and Climate Change (UNEP/CBD/SBSTTA/9/11 and UNEP/CBD/SBSTTA/9/INF/12) and *commends* it to the Conference of the Parties as scientific advice provided in response to paragraphs 11 and 18 of decision V/4, as a basis for future work;
2. *Congratulates* the co-chairs and all the members of the Ad Hoc Technical Expert Group, and other contributors on the preparation of a report that is technically sound and of high quality;
3. *Expresses its appreciation* to the Government of Finland for its financial support for this work, and for hosting two of the meetings of the Ad Hoc Technical Expert Group;
4. *Welcomes* the involvement of climate-change experts in the work of the Ad Hoc Technical Expert Group;
5. *Expresses its appreciation* for the attention given to the work of the Subsidiary Body on Scientific, Technical and Technological Advice on this topic by the Subsidiary Body for Scientific and Technological Advice of the United Nations Framework Convention on Climate Change at its fifteenth and sixteenth sessions, and its encouragement of the involvement of climate-change experts;
6. *Welcomes* the Technical Paper on Climate Change and Biodiversity, prepared by the Intergovernmental Panel on Climate Change (IPCC) as an important component of the wider assessment of the interlinkages between biological diversity and climate change, and *express gratitude* to the authors of the paper, the Intergovernmental Panel, and its bureau and secretariat for this contribution;
7. Takes notes of the reports of the workshops organized by the United Nations Framework Convention on Climate Change in cooperation with other members of the Joint Liaison Group on Synergies among multilateral conventions and agreements (FCCC/SB/2003/1);
8. *Notes that:*
 - (a) There are opportunities to implement climate change mitigation and adaptation activities in ways that are mutually beneficial and synergistic, and that contribute simultaneously to the United Nations Framework Convention on Climate Change and its Kyoto Protocol, the Convention on Biological Diversity, the United Nations Convention to Combat Desertification, Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer, the Ramsar Convention on Wetlands, and other international agreements, all within broader national development objectives;
 - (b) The ecosystem approach provides a framework for the integrated management of land, water and living resources and that its application can facilitate the formulation of climate change mitigation and adaptation projects that also contribute to biodiversity conservation and sustainable use, thereby contributing to the implementation of the “WEHAB” initiative and the Plan of Implementation of the World Summit on Sustainable Development;
 - (c) There are research needs and information gaps arising from the report of the Ad Hoc Technical Expert Group;
 - (d) The primary motivation for cooperation is to promote synergies at the national and local levels, where conventions are implemented. Efforts to promote synergies should be designed in accordance with national circumstances and priorities with a view to achieving sustainable development;
9. *Requests* the Executive Secretary and the Chair of the Subsidiary Body on Scientific, Technical and Technological Advice to contact, respectively, the Secretariat of the United Nations Framework Convention on Climate Change and Chair of the the Subsidiary Body on Scientific and Technological Advice, with a view of bringing the report of the Ad Hoc Technical Expert Group to the attention of the Subsidiary Body on Scientific and Technological Advice of the United Nations

Framework Convention on Climate Change at its nineteenth session, in December 2003, in order that it may consider its contents;

10. *Recommends* that the Conference of the Parties:

(a) *Invite* Parties, other Governments, international organizations and other bodies to make use of the report on climate change and biodiversity prepared by the Ad Hoc Technical Expert Group in order to promote synergy between climate change mitigation and adaptation activities and the conservation and sustainable use of biodiversity;

(b) *Invite* the national focal points for the Convention on Biological Diversity to bring the report to the attention of their counterpart focal points for the United Nations Framework Convention on Climate Change, and for other relevant agreements, in order to promote synergy at national level;

(c) *Facilitate* building capacity related to accessing information and tools, and for enhancing coordination at national level to ensure that climate change mitigation and adaptation projects deliver environmental and social benefits and are consistent with national priorities;

(d) *Call for* case-studies on interlinkages between biodiversity and climate change following a common format to be developed by the Executive Secretary, in collaboration with the Secretariat of the United Nations Framework Convention on Climate Change;

(e) *Invite* Parties, Governments, funding agencies, research bodies and other organizations to address the gaps identified in the Report in order to help to optimize biodiversity conservation and sustainable use within climate change adaptation projects, as well as mitigation projects addressing the adverse effects of human activities over the long term at the national, regional, and global levels;

(f) *Ensure* that the results of the report are incorporated into the ongoing work of the Convention on Biological Diversity, whenever appropriate, and in particular, on forest biodiversity, marine and coastal biodiversity, mountain biodiversity, inland water biodiversity, biodiversity of dry and sub-humid lands, agricultural biodiversity, indicators, impact assessment, and incentive measures, without implying obligations on Parties additional to those under the Convention on Biological Diversity;

(g) *Request* the Subsidiary Body on Scientific, Technical and Technological Advice, as the next stage of its work on the interlinkages between biodiversity and climate change to develop, for the consideration of the Conference of the Parties, advice or guidance for promoting synergy among activities to address climate change, including mitigation and adaptation, activities to combat desertification and land degradation, and activities for the conservation and sustainable use of biodiversity;

(h) *Invite* the Conferences of the Parties to the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification to collaborate with the Convention on Biological Diversity, including through the joint liaison group as appropriate, in the development of advice or guidance to Parties in implementing activities that are mutually supportive of the objectives of the three conventions;

(i) *Invite* the Intergovernmental Panel on Climate Change to continue its work on the relationship between climate change and biodiversity including the detection and attribution to climate change of observed biodiversity losses, taking into account the target adopted by Decision VI/26 to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national levels;

(j) *Examine* the need for support through the financial mechanism and other sources to developing country Parties, in particular the least developed and small island developing States among them, and countries with economies in transition, where appropriate, for:

(i) Country-driven activities aimed at linking mitigation and adaptation projects to global climate change; in particular, projects related to ecosystem conservation, restoration of degraded lands and marine environments and overall ecosystem integrity;

- (ii) Assistance in capacity-building with the aim of increasing the effectiveness in addressing environmental issues through their commitments under the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the United Nations Convention to Combat Desertification;
 - (iii) Assistance in developing synergy-oriented programmes to conserve and sustainably manage all ecosystems, such as forests ,wetlands and marine environments, and contribute to poverty eradication;
- (k) *Request* the Executive Secretary to:
- (i) Transmit the report of the Ad Hoc Technical Expert Group to the Secretariat of the United Nations Framework Convention on Climate Change and through the Secretariat to its bodies, and also to the secretariats of the Convention to Combat Desertification, the Ramsar Convention, the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol, the Intergovernmental Panel on Climate Change, the Millennium Ecosystem Assessment, the Convention on Migratory Species, the United Nations Development Programme, the Global Environment Facility, and the United Nations Forum on Forests, the World Heritage Convention and the Man and the Biosphere programme of UNESCO, as well as relevant organizations and bodies including, *inter alia*, other members of the Collaborative Partnership on Forests, IUCN, and the World Wide Fund for Nature;

- (ii) In preparation for the next stage of the work on climate change and biodiversity by the Subsidiary Body on Scientific, Technical and Technological Advice, gather in collaboration with the Secretariat of the United Nations Framework Convention on Climate Change, the Intergovernmental Panel on Climate Change, and other relevant organizations, relevant material for promoting synergy between climate change mitigation and adaptation activities and the conservation and sustainable use of biodiversity, drawing upon:
- a. Case-studies, contributed by Parties and others, illustrating the potential of biodiversity both to mitigate and adapt to global climate change, and lessons from these experiences, including lessons learned from extreme climate events;
 - b. Existing relevant tools, approaches and processes for designing projects, and evaluating their economic, environmental and social implications, related to mitigating or adapting to climate change within the broader context of sustainable development.

IX/12. Mountain biological diversity

The Subsidiary Body on Scientific, Technical and Technological Advice

1. Welcomes the report of the Ad Hoc Technical Expert Group on Mountain Biodiversity (UNEP/CBD/SBSTTA/9/INF/11);
2. Expresses its gratitude to the Government of Italy for its financial support to the work of the Ad Hoc Technical Expert Group, and to the other Governments and international organizations for the participation of their representatives;
3. Also expresses its gratitude to the Co-Chairs, the experts and the Secretariat of the Convention on Biological Diversity for their work regarding the Ad Hoc Technical Expert Group on Mountain Biodiversity;
4. Recommends that the Conference of the Parties:
 - (a) Adopts the proposed programme of work on mountain biological diversity, annexed to the present recommendation as a set of actions addressing characteristics and problems that are specific to mountain ecosystems;
 - (b) Underlining the sovereign rights and responsibilities of countries over their mountains and mountain biodiversity, notes that Parties should implement the programme of work on mountain biological diversity in the context of their national and sub-national priorities and needs. Inclusion of an activity in a workprogramme does not mean relevance of that activity to all Parties;
 - (c) Invites Parties to identify priority actions among the actions recommended in the proposed programme of work depending on the particular national or local conditions and urges Parties to incorporate them into their national biodiversity strategies and action plans, and implement them taking into account the ecosystem approach so as to contribute to the significant reduction of the rate of mountain biological diversity loss by 2010 and as a contribution to poverty eradication and to the benefit of indigenous and local communities dependent on mountains;
 - (d) Encourages Parties, other Governments and organizations to ensure cross-referencing to, and coherence with, the other thematic and cross-cutting programmes of work, including technology transfer, while implementing this programme of work;
 - (e) Invites Parties to adopt outcome oriented targets for mountain biodiversity, taking into account the Strategic Plan of the Convention, the Global Strategy for Plant Conservation, the Plan of Implementation of the World Summit on Sustainable Development, the Millennium Development Goals and in conjunction with actions 2.1.5 and 3.2.2 of this programme of work;
 - (f) In undertaking the implementation of the programme of work, Parties, Governments, international organizations, civil society organizations and others should take into account the knowledge, innovations and practices of indigenous and local communities and ensure their participation in conservation and sustainable use of mountain biological diversity;
 - (g) Recognizes the need for resources, human, technological and financial capacity, to implement effectively the activities in the proposed programme of work;
 - (h) Invites Parties, other Governments, and relevant organizations to report on implementation of this decision and those parts of the programme of work, which are identified as priorities under national and local conditions pursuant to paragraphs (c) and (e) through, *inter alia*, their reports submitted to the Conference of the Parties;

- (i) Requests the Executive Secretary to:
- (i) Develop in collaboration with Parties and relevant organizations proposals on a small number of global outcome-oriented targets, timeframes in relation to the 2010 target, ways and means for implementation, and indicators at the regional, national and local levels for consideration at a meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to eighth meeting of the Conference of the Parties;
 - (ii) Compile information received from Parties, other Governments and relevant organizations and bodies, on the implementation of the programme of work, and analyse progress made towards the achievement of a significant reduction in the rate of mountain biodiversity loss by 2010;
 - (iii) Assist the Parties in implementing the programme of work through, *inter alia*, the supporting activities defined in the programme of work, and the development, in collaboration with relevant organizations, of proposals for global and, where appropriate, regional targets or expected measurable outputs with timeframes and main actors; and
 - (iv) Regularly gather information on the characteristics and problems that are specific to mountain biological diversity listed in paragraph 6 of the proposed programme of work;

(j) Further requests the Executive Secretary to strengthen collaboration with other organizations, institutions and conventions, as a way to streamline many of the activities contained in the proposed programme of work; promote synergies and avoid unnecessary duplications;

(k) Notes that the notes by the Executive Secretary on status and trends of, and threats to, mountain biological diversity (UNEP/CBD/SBSTTA/8/5), and on measures taken for the conservation and sustainable use of mountain biological diversity (UNEP/CBD/SBSTTA/8/6), can be a basis for the identification of priorities for early action, and recognizes that the relative importance of threats, and their underlying causes will vary by region and country, and, accordingly, requests the Executive Secretary to update this information as part of the reviews of the implementation of the thematic programmes of work in collaboration with Parties and relevant organizations, in particular the Global Mountain Biodiversity Assessment among others, and making use of all available information;

(l) Emphasizes the importance of mountain biodiversity for livelihoods, and therefore requests the Executive Secretary to compile and disseminate information linking mountain biodiversity to sustainable development and poverty alleviation, and examples of successful collaboration between mountain dwellers and communities living in areas adjacent to mountains (as a way to illustrate the “upland-lowland contract”).

Annex

THE PROPOSED PROGRAMME OF WORK ON MOUNTAIN BIODIVERSITY

A. Introduction

1. Mountain areas cover almost one quarter of the Earth’s land surface and host about 12 per cent of its human inhabitants. Additionally, mountains provide vital natural resources for lowland peoples. Mountains are both a unique environment in their own right, and one that incorporates many of the existing thematic programmes under the Convention. For example, forests, inland waters, dry and sub-humid lands and agricultural programme elements can all be found in mountain biological diversity. The present programme of work on mountain biological diversity features goals and activities that are specific to mountain biological diversity, although the existing programmes of work on forests, inland waters, agricultural, and dry and sub-humid land biological diversity also apply to mountain ecosystems.

As a result, the goals and activities contained in the existing programmes of work of each of these thematic areas should also be applied and implemented, whenever appropriate, for their respective areas in mountain ecosystems.

2. Mountain biological diversity is of high importance for a number of ecological functions. The integrity of soils is the prime focus for ecosystem services and human needs. Soil retention and slope stability are closely connected with the extent of above-ground and below-ground vegetation, both essential to ecosystem resilience after disturbance. The high plant functional diversity of mountain ecosystems may also add to their resiliency and, should extreme disturbances occur, often provides effective barriers to high-energy events such as rock falls and avalanches. It also may reduce extensive damage levels at lower elevations. Although it has been to date impossible to provide a thorough definition of mountains with both universal application and acceptance, there are a number of characteristics that are unique to mountain ecosystems. These are referred to in the note by the Executive Secretary on the status and trends of, and threats to, mountain biodiversity prepared for the eighth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) (UNEP/CBD/SBSTTA/8/5).

3. Information and input from international forums may also be taken into account, particular, chapter 13 of Agenda 21, which relates to sustainable mountain development, and the World Summit on Sustainable Development, which also considered mountain ecosystems. Paragraph 42 of the Plan of Implementation of the World Summit, states that:

“Mountain ecosystems support particular livelihoods, and include significant watershed resources, biological diversity and unique flora and fauna. Many are particularly fragile and vulnerable to the adverse effects of climate change and need specific protection.”

The Plan of Implementation proposed a number of specific actions to be undertaken in regard to mountains. The 2002 International Year of the Mountains also provides valuable input. In addition, a number of international agreements and bodies, institutions, and programme initiatives may be considered such as the Convention on Wetlands, (Ramsar, Iran, 1971), the United Nations Convention to Combat Desertification (UNCCD), the United Nations Framework Convention on Climate Change (UNFCCC), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Centre for Integrated Mountain Development (ICIMOD), the International Centre for Agricultural Research in the Dry Areas (ICARDA), the International Partnership for Sustainable Development in Mountain Regions, the International Human Dimensions Programme on Global Environmental Change (IHDP), the Centre for Mountain Studies, the Consorcio para el Desarrollo de la Ecoregion Andina (CONDESAN), the Mountain Research Initiative (MRI), the Global Mountain Biodiversity Assessment (GMBA) of DIVERSITAS, the International Union of Forest Research Organizations (IUFRO), the Alpine Convention, the Carpathian Framework Convention and the World Conservation Monitoring Centre (WCMC).

B. Overall purpose and scope of the programme of work

4. The overall purpose of the programme of work is the significant reduction of mountain biological diversity loss by 2010 at global, regional and national levels, through the implementation of the three main objectives of the Convention on Biological Diversity.

5. The implementation of the programme of work aims at making a significant contribution to poverty alleviation in mountain ecosystems and in lowlands dependent on the goods and services of mountain ecosystems and thereby contribute to the objectives of the Strategic Plan of the Convention on Biological Diversity, the Plan of Implementation of the World Summit on Sustainable Development, and the Millennium Development Goals.

6. The programme of work focuses on addressing characteristics and problems that are specific to mountain biological diversity. These include:

(a) The particularly high concentration of biological diversity hotspots in mountain regions, including high ecosystem diversity, high species richness, high number of endemic and endangered species, and high genetic diversity of crop, livestock, and their wild relatives;

(b) Cultural diversity, and the particularly key role of indigenous and local communities in the conservation and management of mountain biological diversity;

(c) The fragility of mountain ecosystems and species and their vulnerability to human and natural disturbances, in particular to land-use change and global climate change (such as the retreat of glaciers and increased areas of desertification);

(d) The upland-lowland interactions that characterize mountain ecosystems, with special emphasis to the relevance of upland ecosystems for the management of food, water and soil resources.

7. The programme of work also seeks to avoid duplication with existing thematic work programmes and other existing initiatives of the Convention on Biological Diversity. Parties are encouraged to apply, where appropriate, the objectives and activities from these thematic work programmes to the conservation of mountain biological diversity, the sustainable use of mountain biological diversity, and the equitable sharing of benefits arising from the utilization of genetic resources.

8. The programme of work is intended to assist Parties in establishing national programmes of work with targeted goals, objectives, and actions, with specific actors, timeframes, inputs, and expected measurable outputs. Parties may select from, adapt, and/or add to, the goals, objectives 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, sources of finance, and technical cooperation, and to ensure, through appropriate actions, the means to meet the particular challenges and demands of their mountain ecosystems.

C. Programme elements, goals and actions

PROGRAMME ELEMENT 1: DIRECT ACTIONS FOR CONSERVATION, SUSTAINABLE USE AND BENEFIT-SHARING

Goal 1.1: To prevent and mitigate the negative impacts of key threats to mountain biological diversity

Actions

1.1.1. Reduce the impacts of inappropriate land-use practices and changes in urban, forest, inland waters and agricultural areas in mountain ecosystems, including the buffer zones of protected areas using, as appropriate, planning or management mechanisms, such as ecological/economic/ecoregional planning/bioregional/hazardous-areas zoning, so as to ensure the maintenance of biodiversity, in particular ecosystem integrity.

1.1.2. Develop mechanisms and implement measures to reduce human-induced slope instability, adverse effects of natural geological hazards, and to maintain and/or enhance soil stability and ecosystem integrity by way of a diverse and natural vegetation cover that will also promote soil biodiversity function.

1.1.3. Prevent or mitigate the negative impacts of economic development, infrastructure projects and other human-induced disturbances on mountain biological diversity at all levels, taking into consideration the results of environmental and social impact assessment, paying particular attention to cumulative impacts.

- 1.1.4 Develop strategies specific to mountains ecosystems to prevent the introduction of invasive alien species and, when they have been introduced, control and eradicate their negative impacts on mountain biological diversity.
- 1.1.5 Monitor and exchange information on the impacts of global climate change on mountain biological diversity, and identify and implement ways and means to reduce the negative impacts.
- 1.1.6 Implement measures to reduce and prevent key pressures in mountain ecosystems such as deforestation, fragmentation, unsustainable harvesting, inappropriate reforestation or afforestation, and urban expansion that have a negative impact on biodiversity, land degradation, disruption of water flow, and consequent losses of biological diversity (see also decision VI/22).
- 1.1.7 Identify factors responsible for and possible measures to prevent the retreat of glaciers in some mountain systems and implement measures to minimize the impact of this process on biodiversity.
- 1.1.8 Identify local and long-range pollution (air, water and soil), which threaten mountain biodiversity at all levels and take appropriate measures to prevent and mitigate the impacts.
- 1.1.9. Subject to international law, maintain those agricultural and other land-use activities that are known to contribute to the maintenance of biological diversity in mountain ecosystems.

Supporting activities of the Executive Secretary

- 1.1.10. Compile, in collaboration with relevant bodies *and* organizations, and disseminate through the clearing-house mechanism and other means:
 - (a) Information on degraded mountain ecosystems as well as key threats to mountain biodiversity and their ecological and socio-economic impacts;
 - (b) Case-studies, lessons learned and best-practice guidance on ways to prevent and mitigate the negative impacts of key threats to mountain biodiversity.

Goal 1.2: To protect, recover, and restore mountain biological diversity

Actions

- 1.2.1. Develop and implement programmes to restore degraded mountain ecosystems and protect natural dynamic processes and maintain biological diversity in order to enhance the capacity of mountain ecosystems to resist and adapt to climate change, or recover from its negative impacts including, *inter alia*, by establishing corridors, where appropriate, to enable vertical migration of species, ensuring minimal viable population sizes to enable genetic adaptation to changing environmental conditions. These programmes should include socio-economic considerations, especially in relation to indigenous and local communities.
- 1.2.2. Initiate specific activities to facilitate maintenance, protection and conservation of existing levels of endemic species, with a focus on narrowly-distributed taxa.
- 1.2.3. Identify and protect unique, fragile mountain ecosystems, other biological diversity hotspots and their associated species, especially threatened species, giving priority consideration to measures aimed at strict *in situ* protection and/or developing *ex situ* mechanisms whenever feasible.
- 1.2.4. Develop strategies for land-use and water-resource planning at landscape level using the ecosystem approach, taking into account elements of ecological connectivity and

traditional uses of local communities, and to prevent and mitigate losses of mountain biological diversity due to fragmentation and land-use conversion.

- 1.2.5 Establish and strengthen adequate, effective national, regional and international networks of mountain-protected areas, in accordance with decisions of the Conference of the Parties on protected areas, while respecting the rights and full participation of indigenous and local communities.
- 1.2.6 Identify suitable practices for enhancing ecosystem sustainability with particular emphasis on degraded slopes.
- 1.2.7 Address issues related to conflict between humans and other species, especially with regard to coexistence with predators.
- 1.2.8 Examine the representativity and sustainability of existing protected areas and take measures to identify and address gaps and weaknesses, to ensure representativity with a wide ecological range.
- 1.2.9 Develop and implement measures to restore freshwater networks for migratory species, taking into account the physical barriers such as those represented by dams for fish;
- 1.2.10 Establish restoration areas where mountain biological diversity has been degraded significantly and where restoration is needed to complement and buffer the protected-area network;

Supporting action of the Executive Secretary

- 1.2.11 Collaborate with relevant organizations and bodies to compile and disseminate information on:
 - (a) Components of biodiversity important for conservation, in particular, on mountain endemic species, hotspots and their associated species and threatened species;
 - (b) Best practices for their conservation, sustainable use and benefit-sharing.
- 1.2.12 Compile and disseminate case-studies on methods and economic aspects of restoration of degraded mountain ecosystems and recovery of mountain endangered species.

Goal 1.3: To promote the sustainable use of mountain biological resources

Actions

- 1.3.1. Promote sustainable land-use and water resource management practices in relation to human livelihood needs (agriculture, animal husbandry, forestry, aquaculture, inland water fisheries, etc.) in mountain ecosystems, taking into account the Convention principles for sustainable use and the ecosystem approach. ^{22/}
- 1.3.2. Promote sustainable land-use practices, techniques and technologies, including those of indigenous/local communities and community-based management systems, for the conservation and sustainable use (including hunting and fishing) of wild flora and fauna and agro-biodiversity in mountain ecosystems, including biological pest control.
- 1.3.3. Support activities of indigenous and local communities involved in the use of traditional mountain-related knowledge, in particular concerning sustainable management of biodiversity, soil, water resources and slope.

^{22/} The Conference of the Parties will consider the Addis Ababa principles and guidelines on sustainable use at its seventh meeting.

- 1.3.4. Promote partnerships between all stakeholders, including indigenous and local communities, involved in the sustainable use of mountain biological resources. (see also goal 2.3)
- 1.3.5. Develop criteria in the framework of the draft Convention Guidelines on Biodiversity and Tourism Development in accordance with the ecological conditions of mountains ecosystems and promote the use of these guidelines. ^{23/}
- 1.3.6. Through appropriate environmental planning, manage the reduction of the negative impacts of tourism and outdoor activities on mountain ecosystems, as well as the development of associated human settlements and facilities.
- 1.3.7. Strengthen local capacity for sustainable tourism management, in order to ensure that benefits derived from tourism activities are shared by local communities, while preserving natural and cultural heritage values.
- 1.3.8. To promote the sustainable use of economically valuable wild plants and animals, as an income-generating activity for the local inhabitants.
- 1.3.9. Promote integrated watershed management practices at all levels for maintaining ecosystem integrity, soil stability on slopes, upstream-downstream inter-connections and protection against natural hazards.

Goal 1.4: To promote access to, and sharing of benefits arising from the utilization of genetic resources related to mountain biological diversity in accordance with national legislation where it exists

Actions

- 1.4.1. Strengthen the capacity of indigenous people and local communities to engage in equitable benefit-sharing arrangements, taking into account the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization, bearing in mind their voluntary character and that they do not purport to replace national legislation.
- 1.4.2. Develop methods to assess and conserve genetic resources of high economic value for promoting fair and equitable sharing of benefits, respecting national legislation on access to genetic resources.
- 1.4.3. Promote actions that are beneficial for conservation through generating employment and/or income particularly for marginal communities.

Goal 1.5: To maintain genetic diversity in mountain ecosystems in particular through the preservation and maintenance of traditional knowledge and practices

Actions

- 1.5.1. Assess and develop strategies aimed at minimizing the threat of genetic erosion on domesticated biodiversity (crops, animals), paying particular attention to the origin of the genetic resources.
- 1.5.2. Implement provisions contained in Article 8(j) on traditional knowledge and related provisions of the Convention on Biological Diversity, taking into consideration the needs of developing countries.
- 1.5.3. Develop, validate and implement sustainable use practices for plants, animals and microorganisms at the genetic, species, population and community levels.

^{23/} At its eighth meeting in March 2003, SBSTTA recommended that the Conference of the Parties adopt the draft guidelines (recommendation VIII/5, annex). They will be considered at the seventh meeting of the Conference of the Parties.

- 1.5.4. Respect, preserve and maintain indigenous knowledge, practices, processes and technologies to ensure conservation, sustainable use of biodiversity and sharing of benefits.

**PROGRAMME ELEMENT 2: MEANS OF IMPLEMENTATION FOR CONSERVATION,
SUSTAINABLE USE AND BENEFIT-SHARING**

Goal 2.1. To enhance the legal, policy, institutional, and economic framework

Actions

- 2.1.1. Identify and address perverse incentives and/or policies that may impede the implementation of the Convention on Biological Diversity in mountain ecosystems, taking into account the decisions of the Conference of the Parties on incentive measures.
- 2.1.2. Develop and introduce appropriate incentives, market mechanisms and compensation mechanisms, specific for the maintenance of mountain ecosystem goods and services.
- 2.1.3. Promote the diversification of income-generating activities in support of conservation and sustainable use of mountain biological diversity and poverty reduction, including methods to share economic wealth, i.e., within mountain regions through regional development plans and between regions through “upland-lowland contracts”. ^{24/}
- 2.1.4. Improve the science/policy linkages by undertaking national and subnational scientific assessments of the causes of biodiversity loss, including making policy recommendations, in order to reduce the rate of loss of mountain biological diversity by 2010.
- 2.1.5. Develop performance measures and report on the integration of conservation and sustainable use of mountain biological diversity into institutional programmes, including sectoral policies, legal and economic frameworks.
- 2.1.6. Strengthen legal and institutional capacity to implement the work programme on mountain biological diversity, especially through national focal points, institutes and other relevant stakeholder groups and mechanisms allowing for the coordination of sectorial authorities in implementing those activities within their areas of responsibility.
- 2.1.7. Develop and implement legal and policy strategies for land-use planning at the landscape level, taking into account elements of ecological integrity and connectivity, while emphasizing upstream-downstream relations and the prevention of losses of mountain biological diversity due to fragmentation and land-use conversion.
- 2.1.8. Support proactive planning and adaptive measures to reduce the vulnerability to both natural and human-induced hazards adversely impacting on mountain biological diversity, cultural landscapes and local communities.
- 2.1.9. Encourage the implementation of environmental and social impact assessments at sectoral, programme and project levels. Take into account cumulative impacts, to prevent the negative impacts of economic development on mountain biological diversity, by observing decision VI/7 A of the Conference of the Parties on incorporating biodiversity-related issues into environmental-impact-assessment legislation or processes and in strategic impact assessment;

^{24/} The concept was described by Professor Christian Körner, Professor of Botany at the University of Basel and Chairman of the Global Mountain Biodiversity Assessment in his keynote presentation at the eighth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice in March 2003 as follows: The upland-lowland contract concept establishes joint responsibilities between lowlanders and uplanders. Under this concept, uplanders would, for example, be responsible for taking care of the fragile upland mountain landscape to reduce potential impacts on lowlanders. In return, lowlanders may be able to provide uplanders with the products of lowland cultivated areas (food and other resources).

- 2.1.10. Integrate aspects of mountain biological diversity into financial institutions' policies and programmes related to mountain areas;
- 2.1.11. [Promote and empower national economic budgets pertaining to mountain conservation with sufficient budget lines to achieve active implementation of the programme of work.]

Supporting activities of the Executive Secretary

- 2.1.12. Collate and disseminate, e.g., through the clearing-house mechanism and other appropriate means, case-studies of best practice of international and national efforts to enhance the legal, policy, institutional and economic frameworks to conserve and sustainably use mountain biodiversity.

Goal 2.2. To respect, preserve, and maintain knowledge, practices and innovations of indigenous and local communities in mountain regions

Actions

- 2.2.1 Promote the implementation of activities aimed at maintaining existing levels of agrobiodiversity, agro-ecosystems and the goods and services they provide both for meeting local demands and to ensure sources of food security.
- 2.2.2. Respect and understand the traditions and sustainable practices of the indigenous and local communities in mountain regions in ways which accommodate their needs, participation, knowledge and practices for conservation and sustainable use of mountain biodiversity (taking into account Article 8(j) of the Convention and related decisions from the Conference of the Parties and programmes of work).
- 2.2.3 Promote networking, collaborative action and participation of indigenous and local communities in decision-making processes, paying particular attention to the empowerment of women, in order to maintain mountain biodiversity and its sustainable use.
- 2.2.4 Encourage decentralization and enhance access to information for the full participation and involvement of indigenous and local communities in decisions that affect them in relation to mountain ecosystems.
- 2.2.5 Promote the implementation of activities aimed at the improvement of mountain livelihoods, poverty eradication and the maintenance of cultural identity, in order to achieve sustainable use of mountain biological diversity.
- 2.2.6. Develop capacity-building measures and information-sharing to facilitate the involvement of indigenous and local communities, with their prior informed consent, in the management, conservation, and sustainable use of mountain biological diversity.

Goal 2.3. To establish regional and transboundary collaboration and the establishment of cooperative agreements

Actions

- 2.3.1. Promote integrated transboundary cooperation, supported by legislation, where appropriate, and strategies for sustainable activities on mountain ranges. Cooperative arrangements should cover specific thematic issues such as landscape, soil, wetland, watershed, rangeland, mining, protected areas and wildlife management, agriculture, forestry, transportation, energy and tourism.
- 2.3.2. Promote and strengthen regional and transboundary cooperation for research, adaptive management, and exchange of expertise to improve the conservation and management of mountain biodiversity, e.g., Global Mountain Biodiversity Assessment (GMBA) and International Centre for Integrated Mountain Development (ICIMOD).

- 2.3.3. Promote the appreciation and conservation of mountain biological diversity as a means of reducing human conflict, i.e., through peace parks.
- 2.3.4. Strengthen collaboration and synergies between the work programmes of the Convention on Biological Diversity and other global conventions and agreements on climate change, desertification, transboundary pollution, invasive alien species, wetlands and endangered species, with a special focus on mountain systems and their biological diversity, including through joint programmes of work. Also strengthen collaboration with the International Partnership for Sustainable Development in Mountain Regions and regional conventions on mountains.
- 2.3.5. Encourage the development of new methodologies and new mechanisms, such as the upland-lowland contract, to implement cooperative agreements that sustain mountain biodiversity and the provision of goods and services.

PROGRAMME ELEMENT 3: SUPPORTING ACTIONS FOR CONSERVATION, SUSTAINABLE USE AND BENEFIT-SHARING

Goal 3.1. To develop work on identification, monitoring and assessment of mountain biological diversity

Actions

- 3.1.1 Promote the monitoring of susceptible areas subject to climate change.
- 3.1.2 Conduct mountain surveys in priority areas, for conservation and sustainable use of mountain biological diversity. These surveys should consider inventories at genetic, species and ecosystem levels.
- 3.1.3 Apply, whenever appropriate, the programmes of work of the global initiatives such as the Global Taxonomy Initiative, Millennium Ecosystem Assessment and the Global Invasive Species Programme.
- 3.1.4 Support the work of the Global Mountain Biodiversity Assessment.
- 3.1.5 Use national biodiversity strategies and action plans and other national reports to the Convention, for monitoring and assessment of mountain biodiversity.

Goal 3.2. To improve knowledge on and methods for the assessment and monitoring of the status and trends of mountain biological diversity, based on available information.

Actions

- 3.2.1. Develop key abiotic, biotic and socio-economic indicators of status and change of mountain ecosystems.
- 3.2.2. Develop and select international, regional and national criteria and, where appropriate, quantifiable indicators for mountain biological diversity, taking into account the work of the Convention on monitoring and indicators and the knowledge held by indigenous and local communities, together with other experience of sustainable mountain management.
- 3.2.3. Develop methodologies for assigning value to the ecological services provided by land management systems in order to develop economic-incentive mechanisms for compensating the poor and vulnerable mountain communities.
- 3.2.4 Assess and address the changing status of both local and long-range pollution and global climate change issues with special relevance to mountain ecosystems.
- 3.2.5 Assess and address fragmentation and impacts on biodiversity, by changing land-use management practices, e.g., land abandonment, mining.

- 3.2.6 Assess and address the positive and the negative impacts of tourism and outdoor activities in mountain ecosystems.
- 3.2.7. Assess and address natural dynamic processes in mountain ecosystems and the need to preserve areas for natural dynamic processes.
- 3.2.8 Develop monitoring systems based on key national and subnational indicators of changes in mountain ecosystem structure and function taking into account existing monitoring expert knowledge and systems as well as relevant work and processes on indicators.

Goal 3.3. To improve the infrastructure for data and information management for accurate assessment and monitoring of mountain biological diversity and develop associated databases

Actions

- 3.3.1. Enhance and improve the technical capacity at a national level to monitor mountain biological diversity, benefiting from the opportunities offered by the clearing-house mechanism of the Convention on Biological Diversity, including the development of associated databases as required at the global scale to facilitate exchange.
- 3.3.2 Promote open access as Parties consider appropriate, to existing information on biodiversity and related databases and sharing through the clearing-house mechanism of the Convention on Biological Diversity and other appropriate means.
- 3.3.3 Encourage mapping and inventory of biodiversity and of land-use changes, using analogue and digital databases (Remote Sensing Geographic Information System) for scientific purposes and for supporting decision-making.

Supporting activity of the Executive Secretary

- 3.3.4 Enhance the capacity of the clearing-house mechanism to facilitate the implementation of goal 3.3.

Goal 3.4. To improve research, technical and scientific cooperation, and other forms of capacity-building related to mountain biological diversity

Actions

- 3.4.1 Conduct long-term research on species adaptability to changing environmental conditions under climatic or human-induced global change, in relation to mountain biological diversity.
- 3.4.2 Conduct key research on the role and importance of mountain biological diversity and ecosystem functioning, considering ecosystem components, structure, function, processes and services.
- 3.4.3 Develop and support research to assess the role of soil biological diversity and the diversity of protective vegetation cover for the stability and safety of mountain areas and watershed protection, e.g., avoidance of human-induced erosion, landslides and avalanches.
- 3.4.4 Initiate mechanisms and develop collaborative research/scientific programmes of mutual interest among countries with mountains, especially those having common problems and comparable socio-cultural conditions.
- 3.4.5. Foster exchange of experiences and knowledge of sustainable development and ecosystem vulnerability among countries with mountains, taking into account the vulnerability of social-cultural systems and communities.
- 3.4.6 Conduct interdisciplinary, key research programmes on mountain biological diversity, and its relationship to ecosystem structure and functions, including communities-based

management, with special reference to transitional zones linking upland-lowland ecosystems such as ecotones, hotspots, buffer areas and corridors.

- 3.4.7 Develop capacity and enhance opportunities for community-based research and monitoring to conserve mountain biodiversity and provide greater benefits to mountain communities.
- 3.4.8 Develop scientific and technical coordination mechanisms at national level for identification of research priorities and for optimising the efficient utilization of research results;

Supporting activity of the Executive Secretary

- 3.4.9 Explore and quantify the benefits of a diverse, intact vegetation cover in catchments for water and hydroelectric yield.

Goal 3.5. To increase public education, participation and awareness in relation to mountain biological diversity

Actions

- 3.5.1. Promote educational and capacity-building systems tailored to the specific conditions of mountain ecosystems, such as workshops, courses, study tours, community exchanges, communications from the Convention on Biological Diversity, education and publications efforts, in line with the Global Initiative on Communication, Education and Public Awareness (Decision VI/19 of the Conference of the Parties).
- 3.5.2. Increase awareness of the actual and potential contribution of knowledge, practices and innovations of indigenous and local communities to conserve and sustainably use mountain biological diversity, i.e., biodiversity documentation, inventories by community and other appropriate levels.
- 3.5.3. Encourage the implementation of sustainable tourism activities aimed at increasing awareness, respect and knowledge for mountain biological diversity, including knowledge of the local, natural and cultural landscapes.
- 3.5.4. Increase dissemination of knowledge on upland-lowland interactions.
- 3.5.5. Further promote the education of women and their role in the conservation and dissemination of traditional knowledge.
- 3.5.6. Enhance awareness among policy makers and planners on the importance and contribution of mountain ecosystems in poverty eradication programmes;
- 3.5.7. Increase broad-based awareness of the values of mountain biological diversity through, *inter alia*, national and local public awareness campaign.

Goal 3.6. To promote the development, validation, and transfer of appropriate technologies for mountain ecosystems, including indigenous technologies in accordance with Article 8(j) of the Convention on Biological Diversity and related provisions

Action

- 3.6.1 Implement the programme of work on technology transfer, 5/ giving particular attention to matters relating to the conservation and sustainable use of mountain biodiversity.

Supporting activities of the Executive Secretary

- 3.6.2 Document best-practices and appropriate technologies and innovative approaches to managing biodiversity.

5/ To be considered by the Conference of the Parties at its seventh meeting.

- 3.6.3 In collaboration with relevant organizations, provide Parties with access to appropriate and latest technologies and innovations relating to mountain biodiversity.

IX/13. Integration of outcome-oriented targets into the programmes of work of the Convention, taking into account the 2010 biodiversity target, the Global Strategy for Plant Conservation, and relevant targets set by the World Summit on Sustainable Development

The Subsidiary Body on Scientific, Technical and Technological Advice,

Recalling decisions VI/26, on the Strategic Plan of the Convention, and VI/9, on the Global Strategy for Plant Conservation, of the Conference of the Parties and taking into account recommendations 1, on analysis of the outcome of the World Summit on Sustainable Development, and 2, on implementation of the Convention and the Strategic Plan, of the Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010 and recommendations VIII/2, on the programme of work on the biodiversity of inland waters ecosystems and VIII/3, on marine and coastal biodiversity, of the Subsidiary Body on Scientific, Technical and Technological Advice,

Welcoming the report of the London meeting “2010 – the Global Biodiversity Challenge” (UNEP/CBD/SBSTTA/9/INF/9),

Noting that for the purpose of monitoring progress towards the 2010 target, and building upon the outcome of the London Meeting, biodiversity loss can be defined as “the long-term reduction of abundance and/or distribution of species; ecosystems; genes; and/or the ecosystem goods and services they provide”,

Welcoming the initiatives taken under the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat and the Convention on the Conservation of Migratory Species of Wild Animals that contribute to promoting and assessing progress towards the 2010 target,

Noting the linkages between the 2010 biodiversity target and the Millennium Development Goals,
The 2010 target and the Millennium Development Goals

1. *Recommends* that the Conference of the Parties at its seventh meeting requests the Executive Secretary:

(a) To work closely with the United Nations Development Programme, the United Nations Environment Programme, the United Nations Educational, Scientific and Cultural Organization, the Millennium Project of the Secretary-General of the United Nations and others to find ways to more effectively communicate the importance of biodiversity in achieving the Millennium Development Goals, and to identify and communicate the relationship between biodiversity and human development targets at all levels;

(b) To explore with the Secretary General of the United Nations, the opportunity to establish the 2010 target as an interim milestone in achieving the Millennium Development Goal 7 of ensuring environmental sustainability by 2015; and

(c) To work closely with the United Nations Development Programme, the United Nations Environment Programme, the Millennium Project of the Secretary General of the United Nations and others to find ways to use the 2010 targets and indicators to help achieve target 9 (to “reverse the loss of environmental resources”) of Millennium Development Goal 7 (to “ensure environmental sustainability”), and other relevant Millennium Development Goals;

Assessing progress towards the 2010 target

2. *Recommends* that the Conference of the Parties at its seventh meeting:

(a) Considers the establishment of a small number of global goals, each with one or two targets, in order to assess progress towards the 2010 global biodiversity target adopted by decision VI/26. Such goals should complement the existing goals of the Strategic Plan and be focused on:

- (i) Reducing the rate of loss of the components of biodiversity, including: (a) biomes, habitats and ecosystems; (b) species and populations and; (c) genetic diversity;
- (ii) Addressing the major threats to biodiversity, including those arising from: invasive alien species; unsustainable use; climate change; pollution; and habitat change;
- (iii) Maintaining and enhancing goods and services provided by biodiversity in ecosystems, including biological resources that support livelihoods, food security and health, and protecting associated traditional knowledge, innovations and practices;
- (iv) Ensuring the fair and equitable sharing of benefits arising out of the use of genetic resources;

(b) In order to assess progress towards the targets, *agrees* that a limited number of trial indicators adapted or derived from the report of the London meeting (UNEP/CBD/SBSTTA/9/INF/9), the note by the Executive Secretary on proposed biodiversity indicators relevant to the 2010 target (UNEP/CBD/SBSTTA/9/INF/26) and the note by the Executive Secretary on using existing processes as building blocks in reporting on the 2010 target (UNEP/CBD/SBSTTA/9/INF/27), for which data are available from existing sources, be developed, tested and reviewed by SBSTTA prior to the eighth meeting of the Conference of the Parties. These global-level indicators should be selected to communicate effectively trends in biodiversity status and the impacts on ecosystem goods and services, and human well-being, during the present decade. As far as is feasible, the targets and indicators that are applicable at the global level should be developed in such a way that the same targets and indicators may be used at the regional, national and local levels as tools for the implementation of national biodiversity strategies and action plans, where so desired by Parties. Indicators for the following should be tested immediately:

- (i) Trends in extent of selected biomes, ecosystems and habitats;
- (ii) Trends in abundance and distribution of selected species;
- (iii) Change in status of threatened species;
- (iv) Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance;
- (v) Coverage of protected areas

Indicators for the following should be developed:

- (vi) Threats to biodiversity;
- (vii) Ecosystem goods and services; and
- (viii) Equitable sharing of benefits arising from the use of genetic resources;

(c) *Emphasizes* that the goals and targets referred to in 2 (a) above should be viewed as a flexible framework within which national and/or regional targets may be developed, according to national priorities and capacities, and taking into account differences in diversity between countries;

(d) *Invites* Parties and Governments to develop national and/or regional goals and targets, and, as appropriate, to incorporate them into relevant plans, programmes and initiatives, including national biodiversity strategies and action plans;

(e) *Emphasizes* the need for capacity-building, especially in developing countries, in particular the least developed countries and the small island developing States among them, and countries

with economies in transition, in order to enable them to implement activities to achieve and monitor progress towards the goals and targets;

(f) *Examines* the need for adequate and timely support from the financial mechanism, and other funding organizations for developing country Parties, in particular the least developed countries and small island developing States among them, and Parties with economies in transition, as appropriate, for the implementation of activities to achieve and monitor progress towards the goals and targets;

(g) *Invites* related conventions, assessment processes and relevant organizations to contribute reports and information that assist the monitoring of progress towards the 2010 targets;

(h) *Requests* the Executive Secretary:

(i) In cooperation with other relevant organizations and agencies, and taking into account further advice to be provided by the Subsidiary Body on Scientific, Technical and Technological Advice at its tenth or eleventh meeting, to make use of these goals, targets and indicators, in reports analysing progress towards the 2010 target, including through periodic issues of the Global Biodiversity Outlook;

(ii) To make full use of the clearing-house mechanism in promoting technical cooperation to achieve the 2010 targets and facilitating information exchange on progress made;

(i) *Invites* the World Conservation Monitoring Centre of the United Nations Environment Programme to support the Secretariat in facilitating and coordinating the compilation of information necessary for reporting on achievement on the 2010 target;

3. *Requests* the Executive Secretary to prepare a background paper to assist the Conference of the Parties in the tasks indicated in paragraphs 2 (a) and (b) of the present decision;

Integration of targets into the programmes of work of the Convention

4. *Welcomes* the approach for integrating targets in the programmes of work outlined in section II C of the note by the Executive Secretary on the integration of outcome-oriented targets into the work of the Convention (UNEP/CBD/SBSTTA/9/14), by which a small number of outcome-oriented targets may be complemented by process-oriented targets, milestones and deadlines, as appropriate, and *commends* this approach for consideration by the Conference of the Parties at its seventh meeting;

5. *Notes* the proposals for the integration of targets in the programmes of work on the biodiversity of inland waters and biodiversity of marine and coastal areas contained in the notes by the Executive Secretary on the subject (UNEP/CBD/SBSTTA/9/14/Add.1 and 3), and *requests* the Executive Secretary to further refine the proposals, for consideration by the Conference of the Parties at its seventh meeting, on the basis of the comments made by Parties at the ninth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, or provided to the Executive Secretary no later than 21 November 2003, taking into account, the following points:

(a) The targets should be challenging but realistic, recognizing the constraints of Parties, especially developing countries, particularly the least developed countries and small island developing States among them, and countries with economies in transition;

(b) The global targets should be considered as a flexible framework, and their achievement will require additional financial and technical resources especially for developing countries, particularly the least developed countries and small island developing States among them, and countries with economies in transition (as set out in paragraphs 2 (c)-(f), above);

(c) The total number of goals and targets should be manageable and developed as part of a strategic and coherent approach for all programmes of the Convention;

(d) The development of goals, targets and subsequent identification of indicators should draw upon existing initiatives and those under development in other conventions and organizations;

(e) Indicators should preferably be outcome oriented and be identified or developed consistent with the approach set out in paragraph 2 (b) above, taking into account the approaches taken and examples provided in the note by the Executive Secretary on designing national-level monitoring programmes and indicators (UNEP/CBD/SBSTTA/9/10), the report of the London meeting (UNEP/CBD/SBSTTA/9/INF/9), the note by the Executive Secretary on proposed biodiversity indicators relevant to the 2010 target (UNEP/CBD/SBSTTA/9/INF/26) and the note by the Executive Secretary on using existing processes as building blocks in reporting on the 2010 target (UNEP/CBD/SBSTTA/9/INF/27), and other relevant sources;

(f) Legal implications in relation to the mandate of the Convention on Biological Diversity and the mandate of other relevant multilateral agreements.

IX/14. Global Strategy for Plant Conservation

The Subsidiary Body on Scientific, Technical and Technological Advice

Recommends that the Conference of the Parties, at its seventh meeting:

- (a) *Notes with satisfaction* the progress achieved in the further development and implementation of the Strategy in line with decision VI/9;
- (b) *Expresses appreciation* to the organizations that are facilitating stakeholder consultations in relation to the various targets of the Strategy, and to Botanic Gardens Conservation International for supporting the process of developing and implementing the Strategy, including through the secondment of a Programme Officer to the Secretariat of the Convention on Biological Diversity;
- (c) *Welcomes* the establishment of the global partnership for plant conservation and encourages the participating organizations to continue to contribute to the implementation of the Strategy, invites other organizations to join the partnership, and encourages Botanic Gardens Conservation International to continue its support for the partnership;
- (d) *Welcomes* the establishment, by the Executive Secretary, of a flexible coordination mechanism for the Strategy, comprising: liaison groups to be convened as necessary according to established procedures; national focal points, as determined by Parties; the Global Partnership for Plant Conservation; and the Secretariat, including the Programme Officer supported by Botanic Gardens Conservation International;
- (e) *Invites* the World Conservation Monitoring Centre of the United Nations Environment Programme to support the Executive Secretary in monitoring implementation of the Strategy, working in collaboration with the Global Partnership for Plant Conservation;
- (f) *Encourages* Parties to nominate focal points for the Strategy, or designate from among existing focal points, in order to:
 - (i) Promote and facilitate implementation and monitoring of the Strategy at national level, including the identification of national targets and their integration in national biodiversity strategies and action plans and sectoral and cross-sectoral plans programmes and activities;
 - (ii) Promote the participation of national stakeholders in the implementation and monitoring of the Strategy at national level; and
 - (iii) Facilitate communication between national stakeholders and the Secretariat and Global Partnership for Plant Conservation;
- (g) *Requests* the Executive Secretary, with the support of members of the global partnership for plant conservation, to elaborate proposals for a toolkit, including a checklist to assist Parties in integrating the targets into their strategies, plans and programmes, for review by the Subsidiary Body on Scientific, Technical and Technological Advice prior to the eighth meeting of the Conference of the Parties;
- (h) *Decides* to integrate the targets of the Strategy into all the thematic and relevant cross-cutting programmes of work of the Convention, and, in particular, to integrate:
 - (i) Target 1 into the Global Taxonomy Initiative;
 - (ii) Targets 4 and 5 into the programme of work on protected areas;
 - (iii) Target 10 into work on invasive alien species;
 - (iv) Targets 11, 12 and 13 in the work on sustainable use;
 - (v) Targets 9 and 13 into work on Article 8(j) and related provisions;

- (vi) Target 14 into the programme for communication, education and public awareness; and
- (vii) Targets 6, 9 and 12 into the thematic programmes for agricultural biodiversity and forest biodiversity;

(i) *Emphasizes* that, in line with paragraphs 3, 4, 6 and 7 of decision VI/9, the Strategy is to be implemented in a flexible way, and with due regard to the need for capacity building in identifying and achieving national targets, particularly in developing countries, especially the least developed and small island States among them, and countries with economies in transition;

(j) *Decides* to integrate the targets of the Strategy into the reporting framework for the third national reports;

(k) *Welcomes* the decisions of the Conference of the Parties and Plants Committee of the Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES) to consider how they can contribute to the implementation of the Strategy, especially regarding target 11 (“No species of wild flora endangered by international trade”);

(l) *Invites* the Commission on Genetic Resources for Food and Agriculture of the Food and Agriculture Organization of the United Nations to consider how the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture contributes to the implementation of the Strategy, in particular target 9 (“70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained”).

IX/15. Invasive alien species

The Subsidiary Body on Scientific, Technical and Technological Advice

Recommends that the Conference of the Parties:

(a) *Welcomes* the collaboration between the Convention on Biological Diversity and other Conventions and organizations, in particular the Ramsar Convention on Wetlands and the International Plant Protection Convention, in developing mechanisms to address the threats posed by invasive alien species;

(b) *Welcomes* progress on the draft International Convention for the Control and Management of Ships' Ballast Water and Sediments under the International Maritime Organization, and recommends that Parties to the Convention on Biological Diversity and other Governments consider ratifying this Convention when it is adopted and opened for signature;

(c) *Recognizes* the need to strengthen further institutional coordination among international organizations and *requests* the Executive Secretary to strengthen collaboration with other relevant partners, and in particular to:

- (i) Promote fuller consideration of issues relating to invasive alien species in other international forums, including through the joint liaison group of the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification, and the Collaborative Partnership on Forests;
- (ii) Further collaborate with relevant organizations and initiatives including the Food and Agricultural Organization of the United Nations and the International Maritime Organization;
- (iii) Further collaborate with relevant conventions including the Convention on International Trade in Endangered Species (CITES);
- (iv) Support closer coordination between national focal points of relevant international instruments, regional institutions and international conventions and programmes;
- (v) Develop a joint work plan with the secretariat of the International Plant Protection Convention;
- (vi) Establish closer linkages with the Office International des Epizooties;
- (vii) Explore options for closer collaboration with the International Civil Aviation Organization (ICAO) in the development of a preventive strategy for invasive alien species through civil-aviation pathways;
- (viii) Cooperate with relevant site-based conventions and other organizations to develop biome-specific practical guidance for site managers;

(d) *Recognizing* the need to strengthen institutional coordination at international, regional and national levels on invasive alien species as a trade-related issue:

- (i) *Invites* the World Trade Organization and its relevant bodies to give consideration to the risks coming from invasive alien species, in their deliberations;
- (ii) *Requests* the Executive Secretary to collaborate, whenever feasible and appropriate, with the Secretariat of the World Trade Organization in its training, capacity-building and information activities, with a view to raising awareness of the issues related to invasive alien species, and promoting enhanced cooperation on this issue;

- (iii) *Requests* the Executive Secretary to renew his application for observer status in the Committee on Sanitary and Phytosanitary Measures (SPS) of the World Trade Organization with a view to enhancing the exchange of information on deliberations and recent development in the respective bodies of relevance to alien invasive species;
 - (iv) *Invites* Parties and Governments to take into consideration, as appropriate, the risks from invasive alien species during the development, expansion and environmental review of bilateral and regional trade arrangements; and
 - (v) *Invites* Parties and Governments to improve communication and cooperation between national environment, plant protection, trade and other relevant authorities with a view to increasing awareness on issues related to the prevention and management of risks from potentially invasive alien species and ensuring consistency of national policies and programmes;
- (e) *Invites* relevant Parties to the Convention on Biological Diversity and other Governments, as well as national, regional and international organizations to:
- (i) Improve the coordination of regional measures to address transboundary issues through the development and implementation of regional standards, regional support for risk analysis and regional cooperation mechanisms;
 - (ii) Support national and regional decision-making and rapid response through the further development of risk analysis, alert lists, diagnostic tools and capacity development;
 - (iii) Incorporate invasive alien species considerations, including monitoring and reporting and notification of new threats, into regional agreements and other instruments, and make information on invasive alien species status and trends available through the clearing-house mechanism and other relevant regional information systems;
 - (iv) Allocate, as appropriate, adequate financial resources and capacity for border control and quarantine measures with a view to improve synergies with policies relating to trade facilitation, food security, human health and environmental protection;
 - (v) Strengthen, as appropriate the cooperation between biodiversity, agriculture, forestry and land management agencies in the application of risk analysis standards and guidance;
 - (vi) Consider the introduction of positive incentive measures for the eradication or control of invasive alien species and the use of native species in land and water management and other programmes;
 - (vii) Proactively engage stakeholder groups in the eradication, and in the prevention and mitigation of impacts, of alien invasive species, including by awareness-raising and training as well as through the design and implementation of appropriate incentive measures;
- (f) *Notes* that specific gaps in the international regulatory framework persist, notably in relation to species that are invasive, but do not qualify as plant pests or animal diseases, and with regard to the following potential pathways:
- (i) The use of non-native organisms in aquaculture and the restocking of marine and inland water systems for commercial and recreational fisheries;
 - (ii) Unintentional or opportunistic introductions (e.g., “hitchhiker organisms”) , including through hull-fouling, packaging material, import consignments, vehicular transport and other means;

- (iii) Unintentional introductions of invasive alien species through international assistance and humanitarian programmes, tourism, military, scientific research, cultural and other activities;
- (iv) Intentional introductions of alien species for non-food purposes, including horticulture and trade in pets and aquarium species;
- (v) Intentional introduction of alien species as biocontrol agents for control or eradication of invasive alien species or pests or weed control;
- (vi) Transnational and national *ex situ* breeding projects with alien species as sources for intentional or unintentional introduction; and
- (vii) Intentional introduction of invasive alien species through international assistance programmes, including conservation and development projects and other activities;

(g) *Notes* that there is potential for the application of existing methodologies for risk assessment and risk analysis, including those established in the contexts of plant and animal health, to a wider range of issues related to invasive alien species;

(h) *Requests* the Subsidiary Body on Scientific, Technical and Technological Advice to establish an ad hoc technical expert group to address gaps and inconsistencies in the international regulatory framework, in particular the specific gaps identified in paragraph (f) above, and, on the basis of the work of the expert group, to make recommendations for the full and effective implementation of Article 8(h) of the Convention, to the Conference of the Parties. The expert group should:

- (i) Further clarify the gaps and inconsistencies in the international regulatory framework that are significantly hindering countries' efforts to manage threats from invasive alien species, focusing this analysis on the known major pathways for the spread of invasive alien species, and taking into account past efforts of relevant organizations and initiatives that have considered the issue;
- (ii) Develop practical options on how to address these gaps and inconsistencies, where possible within the context of existing international frameworks, in order to achieve the full and effective implementation of Article 8(h), taking into account the costs/benefits of options for addressing the gaps and inconsistencies and the need for appropriate capacity-building at the national and regional level, to support this work;

In the event that the Ad Hoc Technical Expert Group identifies the potential need for standards or other measures, it should also identify the appropriate standard-making authority, if any, or other appropriate options, so that the Conference of the Parties can consider referring the issue to the appropriate standard-making authority and/or any other course of action that it considers appropriate;

(i) *Requests* the Executive Secretary together with the Global Invasive Species Programme, and its participating organizations, and with other relevant organizations to address the priorities for practical actions identified in decision VI/23 25/, and in the present decision;

(j) *Considers* the need for sustainable financing for improved prevention, rapid response and management measures to address the threats of invasive alien species.

25/ One representative entered a formal objection during the process leading to the adoption of this decision and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324).

Annex II

**PROVISIONAL AGENDAS FOR THE TENTH AND ELEVENTH MEETINGS OF THE
SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL
ADVICE**

***A. Provisional agenda for the tenth meeting of the Subsidiary Body on Scientific,
Technical and Technological Advice***

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. Progress report on the implementation of the programmes of work of the Convention.
4. Substantive issues:
 - 4.1. In-depth review of programmes of work: Global Taxonomy Initiative;
 - 4.2. New issues: island biodiversity;
 - 4.3. Strategic issues for evaluating progress or supporting implementation: Review of progress in implementation of the Strategic Plan, including the 2010 biodiversity target, and contributions to achievement of the Millennium Development Goals.
5. Preparation for the eleventh meeting of the Subsidiary Body on Scientific, Technical and Technological Advice:
 - 5.1. Draft provisional agenda;
 - 5.2. Date and venue.
6. Other matters.
7. Adoption of the report.
8. Closure of the meeting.

B. Provisional agenda for the eleventh meeting of the Subsidiary Body on Scientific, Technical and Technological Advice

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. Progress report on the implementation of the programmes of work of the Convention.
4. Substantive issues:
 - 4.1. In-depth review of programmes of work:
 - (a) Dry and sub-humid lands biodiversity;
 - (b) Other scientific and technical aspects as determined by the Conference of the Parties and/or the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety; 26/
 - 4.2. Urgent emerging issues;
 - 4.3. Strategic issues for evaluating progress or supporting implementation: Refining mechanisms to support implementation;
5. Preparation for the twelfth and thirteenth meetings of the Subsidiary Body on Scientific, Technical and Technological Advice:
 - 5.1. Draft provisional agendas;
 - 5.2. Dates and venues.
6. Other matters.
7. Adoption of the report.
8. Closure of the meeting.

26/ In the event that the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety decides to utilize the services of SBSTTA pursuant to Article 30, paragraph 1, of the Biosafety Protocol.