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Item 3.1 of the provisional agenda*

IN-DEPTH REVIEW OF THE APPLICATION OF THE ECOSYSTEM APPROACH

Examples of the application of the ecosystem approach in the programmes of work of the Convention

Note by the Executive Secretary

I. INTRODUCTION

1. In decision VIII/11, the Conference of the Parties, in the refined multi-year programme of work (annex II), decided to undertake the in-depth review of the ecosystem approach at its ninth meeting and in decision VIII/15 (annex III) provided guidelines for the review of the programmes of work of the Convention.

2. In response to this decision, the Executive Secretary has prepared this document to provide examples of the application of the ecosystem approach in the programmes of work and cross-cutting issues of the Convention. Further information on this subject is provided by biome or programme of work in documents UNEP/CBD/SBSTTA/INF/6 (the ecosystem approach sourcebook and case study database); UNEP/CBD/SBSTTA/INF/5 (barriers to the application of the ecosystem approach) and UNEP/CBD/SBSTTA/INF/1 (review of information in the third national reports). This document provides additional background information in support of document UNEP/CBD/SBSTTA/12/2.

II. APPLICATION OF THE ECOSYSTEM APPROACH IN THE PROGRAMMES OF WORK

Marine and coastal biodiversity

3. Guidance for ecosystem-based management of marine and coastal biodiversity is contained in recommendation VIII/3 and document UNEP/CBD/SBSTTA/8/INF/11. The Government of the Netherlands, with, e.g., the Global Plan of Action for the Protection of the Marine Environment from Land-based Activities, Wetlands International, and the Ramsar Convention, are currently producing guidance, which will fully integrate existing IMCAM guidance and the objectives of the CBD, particularly applying the ecosystem approach.

* UNEP/CBD/SBSTTA/12/1.

4. A number of international and regional organizations promote the ecosystem approach for the sustainable use of marine and coastal living resources, e.g., the FAO conducted the Reykjavik meeting on responsible fisheries and marine ecosystems (<http://www.fao.org/docrep/meeting/004/Y2211e.htm>); and the World Fish Centre (ICLARM; <http://www.worldfishcenter.org/>) is developing an "Integrated Fisheries Management Framework", which promotes the ecosystem approach. The Helsinki Commission (HELCOM) provides a regional example for the approach (<http://www.helcom.fi/>). The IOC is currently reviewing the OSLR programme to be compatible with the ecosystem approach. The WSSD Plan of Implementation (para 29(a)) calls for the application of the ecosystem approach for the management of marine resources by the year 2010.

5. In Decision VIII/22, the Conference of the Parties requested the Executive Secretary, in collaboration with Parties, relevant organizations and indigenous and local communities, to compile and analyse case-studies on successful and unsuccessful implementation of integrated marine and coastal area management (IMCAM), and to provide lessons learned for the consideration of the Subsidiary Body on Scientific, Technical and Technological Advice before the tenth meeting of the Conference of the Parties. In response to this decision, the Executive Secretary is engaged synthesising IMCAM experiences by compiling relevant case studies as a precursor to providing a synthesis report on the implementation of IMCAM. Further examples of the implementation of IMCAM are provided in document UNEP/CBD/SBSTTA/12/INF/2.

6. In Decision VII/5, paragraph 7, the Conference of the Parties agreed that further technical advice is required to support the implementation of the programme elements related to sustainable use and to support the work of developing countries in achieving sustainable use of their marine and coastal areas, including in relation to tourism and fishing, and requested the Executive Secretary to work with the Food and Agriculture Organization of the United Nations (FAO) and other relevant organizations to develop that advice and support. In response to that decision the Executive Secretary is organising a Joint Workshop in collaboration with the FAO, the Global Plan of Action for the Protection of the Marine Environment from Land Based activities, the Barcelona Convention, and the PEMSEA Network of Coastal Cities for Sustainable Coastal Development. The workshop will involve experts and local leaders in coastal cities of developing states to compile on-ground experiences of implementing sustainable use, identify the effectiveness of available guidelines and tools, analyze key barriers and constraints, and recommend strategies for strengthening existing technical guidelines and tools.

Forest biological diversity

7. In general, there has been progress in the application of the ecosystem approach in the regional policies of Europe, in the development of guideline publications from the Food and Agriculture Organization of the United Nations (FAO), the Internet site of the World Conservation Union (IUCN) and in the implementation of specific local projects. The main challenge towards improvement lies in increasing the understanding of the ecosystem approach and connecting it with government policies.

8. Three members of the Collaborative Partnership on Forests (CPF) worked in conjunction with five African governments, a scientific body and local communities to apply the ecosystem approach in restoring West African drylands and improving rural livelihoods by, *inter alia*, building the capacity of rural communities to plan their own sustainable land-use and to train five national teams in the characterization of land degradation and in monitoring interventions for conservation¹.

¹ United Nations. Economic and Social Council. United Nations Forum on Forests. Collaborative Partnership on Forests Framework 2005: Information Document. New York: UNFF, 2005. [E/CN.18/2005/INF/1]

9. The FAO has published several documents on sustainable forest management and the ecosystem approach including:
- (a) “Sustainable Forest Management and the Ecosystem Approach: Two Concepts, One Goal,” which outlines parallels between the two concepts with the aims of fully integrating them and improving policy and field management practices²; and
 - (b) The proceedings of the Satellite Event on the Occasion of the Ninth Regular Session of the Commission on Genetic Resources for Food and Agriculture Rome 12-13 October 2002 entitled “Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries”.
10. The IUCN Commission on Ecosystem Management has an internet site describing the ecosystem approach following the 12 principles outlined in decision VII/11. This site also details how to implement the approach as well as presents four in-progress case studies: Panama, Niger-Nigeria border, Indonesia, and Viet Nam³.
11. The Ministerial Conference on the Protection of Forests in Europe (MCPFE), at its fourth conference in Vienna held in April 2003, adopted several key objectives of the expanded programme of work on forest biological diversity into their framework as part of the Vienna resolutions and commitments. The MCPFE’s publication “Sustainable Forest Management and the Ecosystem Approach” goes into much greater detail on the implementation of this objective⁴.
12. The publication “Satellite Event on Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries as part of the Ninth Regular Session of the Commission on Genetic Resources for Food and Agriculture in Rome” presents case studies on the integration of the ecosystem approach applied to all types of production systems including one on mahogany conservation in the forest ecosystems of Mexico⁵.
13. In an effort to close the gap between policy and the scientific understanding of ecological dynamics, three methods are proposed in a legal journal that can be adapted to environmental law: the precautionary principle, adaptive management and the ecosystem approach⁶. In terms of the ecosystem approach, the article stresses the importance of this approach in maintaining ecosystem health, integrity, or sustainability and its ability to connect both social and ecological issues. Furthermore, it suggests that the ecosystem approach could be used to explore the interface between ecology and economics.
14. In Decision VI/22, the Conference of the Parties recognized the role of international and regional organizations and processes in supporting Parties in implementing the expanded programme of work on forest biological diversity. Further in paragraph 38 of that decision, the Conference of the Parties invited the members of the Collaborative Partnership on Forests to support the implementation of the expanded programme of work on forest biological diversity. In response to this decision, in 2004, a voluntary

² Food and Agriculture Organization of the United Nations. Forestry Department. Forest Management Working Paper: Sustainable Forest Management and the Ecosystem Approach: Two Concepts, One Goal. Rome: FAO, 2003.

³ Ecosystem Management: Our Work: What is the Ecosystem Approach? 1995-2006. Commission on Ecosystem Management of the World Conservation Union. 13 June 2006. <<http://www.iucn.org/themes/cem/ourwork/ecapproach/index.html>>.

⁴ Ministerial Conference on the Protection of Forests in Europe. Sustainable Management and the Ecosystem Approach: Outcome of the MCPFE and EFe/PEBLDS ad hoc Working Group on Development of the Pan-European Understanding of the linkage between the Ecosystem Approach and Sustainable Forest Management Session held in Krakow, Poland, 19-21 April, 2004. Warsaw: MCPFE, 2005.

⁵ Food and Agriculture Organization of the United Nations. Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries: Satellite Event on the occasion of the Ninth Regular Session of the Commission on Genetic Resources for Food and Agriculture, Rome 12-13 October 2002: Proceedings. Rome: FAO, 2003.

⁶ Manno, Jack. “The ecological dynamics of environmental law and policy.” Boston College Environmental Affairs Law Review. 31.3 (2004): 607-616.

survey was sent by the Secretariat to CPF members. This survey was composed of three questions one of which requested organizations to report on the constraints encountered while undertaking any actions aimed at assisting Parties to implement the work programme. Five organizations (FAO, the International Tropical Timber Organization - ITTO, the United Nations Forum on Forests-UNFF, the International Union of Forest Research Organizations - IUFRO and the World Agroforestry Centre (International Council for Research in Agroforestry) - ICRAF) responded to this questionnaire. Several CPF members indicated that the major constraint related to limited financial capacity and human resources. Other constraints identified included:

- (a) Inadequate institutional mechanisms for assessing progress in implementation;
- (b) Weak linkages between science and legal framework;
- (c) Inadequate transfer of environmentally sound technologies (such as water and soil management and knowledge of the multi-sectoral approach);
- (d) Trade-offs between long-term and short-term gains; and
- (e) Uncertainty and inadequate forest assessment capabilities.

15. Due to the limited information on the activities carried out by the Parties, it is difficult to assess the concreteness with which the ecosystem approach has been applied to the management of all types of forests. Assessing the progress on this goal was also problematic as:

- (a) The interpretations of the ecosystem approach varied between Parties;
- (b) The term “all forest types” was understood differently. For example Parties used different criteria, such as ownership (private versus public) or biological characteristics (temperate versus tropical) to distinguish between forest types; and
- (c) Generally the functional linkages between forest biological diversity and other sectors, such as agriculture, were not examined preventing the development of practices that could improve the relationship between forest management and other land uses.

16. The Ad-Hoc Technical Expert Group on the in-depth review of the programme of work on forest biodiversity is to consider these gaps, fill them and/or identify resources and information that could be used to address them.

17. In paragraph 19 (a) of Decision VI/22, the Conference of the Parties requested the Executive Secretary to carry out a comparative study to clarify the conceptual basis of the ecosystem approach in relation to the concept of sustainable forest management with adequate consideration for regional conditions and undertake a synthesis of case-studies on the ecosystem approach provided to the Convention on Biological Diversity by Parties. In response to this request, the Secretariat published the “Ecosystem Approach: Further Elaboration, Guidelines for Implementation and Relationship with Sustainable Forest Management”⁷.

Dry and sub-humid lands

18. With financial support from the Government of the Netherlands and initiative has been started between the CBD and UNCCD Secretariats, in collaboration with other relevant agencies, to hold regional workshops on synergies, amongst other, sharing lessons-learned from the implementation of activity 8 of the PoW. The first workshop was held in Gaborone, Botswana in 2004 for the Africa Region. A second workshop for Latin America and the Caribbean was held in Antigua and Barbuda in 2006.

⁷ Secretariat of the Convention on Biological Diversity (2003). Ecosystem Approach: Further Elaboration, Guidelines for Implementation and Relationship with Sustainable Forest Management, Montreal, Canada.

19. The Secretariat is compiling case studies on capacity building and partnership development for implementation of the PoW, including the application of the ecosystem approach. The case studies will be made available through the clearinghouse mechanism. The IUCN published a documentation of case-studies on application of ecosystem approaches, including in drylands <http://www.iucn.org/themes/wetlands/ecosystemmanagement.html>. Additional case studies are currently being documented. The World Resources Institute published a paper "An ecosystem approach to drylands: building support for new development policies" (http://forests.wri.org/pubs_description.cfm?PubID=3154).

20. International guidelines for cooperation, e.g. of UNDP, the GEF, the World Bank, all contain reference to the ecosystem approach, esp. in view of combating desertification (UNDP:<http://www.unccd.int/cop/reports/un/2000/undp-eng.pdf>; World Bank:

[http://lnweb18.worldbank.org/ESSD/essdext.nsf/48DocByUnid/A2328AA047E52F8C85256B7900563351/\\$FILE/ConservingandManagingBiodiversityiDryland.pdf](http://lnweb18.worldbank.org/ESSD/essdext.nsf/48DocByUnid/A2328AA047E52F8C85256B7900563351/$FILE/ConservingandManagingBiodiversityiDryland.pdf); and UNDP/GEF operational guidelines http://www.undp.org/gef/undp-gef_publications/publications/land_degradation_guidelines.doc).

Mountain biological diversity

21. The UNESCO report "Using ecosystem approach to implement the CBD: a global synthesis report drawing lessons from three regional pathfinder workshops" (<http://www.unesco.org/mab/docs/Report.pdf>), specifically makes reference to mountains. Reports of the German Government (Ministerial Division for Conservation) on the implementation of the ecosystem approach include explicit case-studies on mountains (e.g., <http://www.bfn.de/09/skript78.pdf>). The Global Mountain Biodiversity Assessment of DIVERSITAS collated much information from its network partners on linking mountain biodiversity to sustainable development and poverty alleviation, including ecosystem approach. This information is accessible at <http://gmba.unibas.ch/publications/publications.htm>. The FAO, under the aegis of International Mountain Day 2006 compiled a number of case studies on successful mountain biodiversity management. These case studies are available at www.fao.org/mnts/intl_mountain_case_en.asp.

Biological diversity of inland water ecosystems

22. Notification 2005-099 requested case studies related to community involvement in river basin or water resources management; planning procedures and mechanisms; monitoring and research; policies and legal instruments; management interventions; transboundary/international cooperation; and institutional arrangements. Notification 2005-21 sought information and lessons learned from the application of national and regional policies, plans and best practices, from the application of water frameworks, including specific examples of successful policy interventions to conserve and sustainably use inland waters. Notification 2005-014 sought information on mountain ecosystems and their role as water suppliers and examples of transferable technologies relevant to the implementation of the revised programme of work on inland water biodiversity. Case studies received have been incorporated into CBD case study database. Those received on water frameworks were summarised in document UNEP/CBD/COP/8/INF/20 and for mountains and their role as water suppliers in document UNEP/CBD/COP/8/INF/19.

23. The River Basin Initiative is now operational (www.riverbasin.org). Through its Integrated Water Resources Management ToolBox, it provides a mechanism for submission of case studies, including critical analysis, lessons learned and positive experiences that might be considered for replication, in the context of implementing ecosystem approaches.

24. The Ramsar Convention has compared its "wise-use" concept for wetlands with the ecosystem approach and found the two concepts compatible. Ramsar STRP, through its working groups on wise use and water resource management, are integrating the CBD ecosystem approach principles into their work.

25. UNESCO has published a report "Using the ecosystem approach to implement the CBD: a global synthesis report drawing lessons from three regional pathfinder workshops", including examples on inland waters <http://www.unesco.org/mab/docs/Report.pdf>. A series of reports facilitated by the German Government (Ministerial Division for Conservation) deal with the ecosystem approach and present case-studies for ecosystem approach implementation, including on inland waters (see e.g. <http://www.bfn.de/09/skript78.pdf>). The World Economic Forum, in association with the United Nations Environment Programme (UNEP), has launched a Water Initiative to create public-private partnerships to improve the management of watersheds; reference to the implementation of the ecosystem approach (<http://www.weforum.org/site/homepublic.nsf/>). IUCN published a documentation of case-studies on application of ecosystem approaches, including in freshwater systems <http://www.iucn.org/themes/wetlands/ecosystemmanagement.html>.

26. The first World Water Development Report (published in 2003 by UNESCO-WWAP, in partnership with the Secretariat http://www.unesco.org/water/wwap/wwdr1/table_contents/index.shtml) adopted a holistic approach to water issues which incorporates an ecosystem approach. It included 7 detailed case studies from river/lake basins around the world. 16 case studies at river basin and/or national level. The approach has been maintained in the second World Water Development Report (http://www.unesco.org/water/wwap/wwdr2/table_contents.shtml).

27. Agriculture is the main use of water globally and the largest driver of loss of biological diversity of inland water ecosystems. Agricultural use of water has historically been planned and managed from a sector based perspective. The Comprehensive Assessment of Water Management in Agriculture (CA) (<http://www.iwmi.cgiar.org/assessment/>) is an innovative multi-institute process aimed at identifying existing knowledge and stimulating thought on ways to manage water resources to continue meeting the needs of both humans and ecosystems. The CA represents a major paradigm shift towards more holistic ecosystems based approaches. The CA critically evaluates the benefits, costs, and impacts of the past 50 years of water development and challenges to water management currently facing communities. It assesses innovative solutions and explores consequences of potential investment and management decisions. The CA is designed as a learning process, engaging networks of stakeholders to produce knowledge synthesis and methodologies. The main output of the CA is an Assessment report that aims to guide investment and management decisions in the near future considering their impact over the next 50 years in order to enhance food and environmental security to support the achievement of the MDGs. The Secretariat is a partner in the assessment and has contributed in particular to the incorporation of biodiversity issues into the assessment. The ecosystem approach has been incorporated across the board in the assessment and developed in particular in chapters on the Conceptual Framework, Water for Food to Fight Poverty, Policy and Institutional Reform Processes for Sustainable Agricultural Water Management, Agriculture, Water and Ecosystems: Avoiding the Costs of Going Too Far, Inland Fisheries, Aquaculture and Water Productivity, River Basin Development and Management. Overall, the CA has incorporated an "ecosystem services" perspective for the management of water (*sensu* the Millennium Ecosystem Assessment) which has helped consolidate more ecosystem based approaches. The CA synthesis book will be available mid-2007. The Assessment has been invited to present its findings at a side-event at the thirteenth meeting of SBSTTA.

28. The World Water Forum at its fourth meeting (4th WWF), 16-22 March 2006, Mexico City, Mexico, has increasingly recognised the complex ecosystem wide aspects of water issues. For example, the Ministerial declaration (March 22) - reaffirms the critical importance of water, in particular freshwater, for all aspects on sustainable development, including poverty and hunger eradication, water-related disaster reduction, health, agricultural and rural development, hydropower, food security, gender equality as well as the achievement of environmental sustainability and protection; underlines the need to include water and sanitation as priorities in national processes, in particular national sustainable development and poverty reduction strategies; reaffirms the commitment to achieve the internationally agreed goals on integrated water resources management (IWRM), access to safe drinking water and basic

sanitation, agreed upon in Agenda 21, the Millennium Declaration and the Johannesburg Plan of Implementation (JPOI); reiterates the continued and urgent need to achieve these goals and to keep track of progress towards their implementation, including the goal to reduce by half, by the year 2015, the proportion of people unable to reach or afford safe drinking water.

Agricultural biodiversity

29. UNESCO prepared a report "Using the ecosystem approach to implement the CBD: a global synthesis report drawing lessons from three regional pathfinder workshops", also addressing agrobiodiversity (<http://www.unesco.org/mab/docs/Report.pdf>). Reports of the German Government (Ministerial Division for Conservation) include case-studies for ecosystem approach implementation including on agrobiodiversity (e.g. <http://www.bfn.de/09/skript78.pdf>). The GTZ has compiled a series of "source books" "Conservation and sustainable use of Agricultural Biodiversity". This is one example for practicing the ecosystem approach (<http://www.gtz.de/agrobiodiv/english/index.html>).

30. Case-studies on the implementation of the ecosystem approach are published by IPGRI (<http://www.ipgri.cgiar.org/themes/human/gardens.htm>). A workshop on Genetic Resources Management in Ecosystems (GRME) was convened by the CGIAR System-wide Programme on Genetic Resources (SGRP) and organized by CIFOR, ICRAF, and ICRISAT in 2002. It had the objective to examine ecosystem approaches to the management of genetic resources and identify the needs and opportunities for combining strategies for conserving and using genetic resources within the wider natural resources management context (<http://www.cifor.cgiar.org/grme/>).

31. Further details of the application of the ecosystem approach to agriculture are provided in document UNEP/CBD/SBSTTA/INF/2.

Island biodiversity

32. According to Jamaica's NBSAP and its second National report, the Ridge to Reef project (R2RW) implemented priority action 8.1.1 of the PoW (Develop policies, programmes and actions to ensure the capacity of island ecosystems to deliver goods and services are maintained), as a five-year initiative between the Government of Jamaica's National Environment and Planning Agency (NEPA) and USAID, addressing the degradation of watersheds on the island. R2RW works with local-level organizations to promote sustainable environmental management practices for resource users, supports solutions that encourage better enforcement of existing environmental regulations and policy, and enhances the capacity of Jamaican government agencies and private-sector and civil society organizations to implement effective watershed management programs in Jamaica.

Assessment, monitoring and indicators

33. The Executive Secretary has convened an expert meeting on indicators of biological diversity, 10-12 February 2003, Montreal, Canada. The expert group developed a key set of standard questions and a list of available and potential indicators, covering the ecosystem, species and genetic levels, taking into account the ecosystem approach. The report of the meeting is available as document UNEP/CBD/SBSTTA/9/INF/7.

34. The review of the of guidelines for incorporating biodiversity-related issues into environmental-impact-assessment legislation or processes and in strategic impact assessment has led to the preparation of Voluntary Guidelines on Biodiversity-Inclusive Environmental Impact Assessment (UNEP/CBD/COP/8/27/Add.2) which were endorsed through decision VIII/28 (para. 3) and are contained in the Annex to that decision. The guidelines take the ecosystem approach as the basis for the assessment and include several references to individual principles of the ecosystem approach. The Voluntary Guidelines on Biodiversity-Inclusive Strategic Environmental Assessment are also fully consistent with the ecosystem approach and provide specific approaches to its implementation.

35. Indicator development, and reporting, is largely a matter for each programme of work/cross-cutting issue each of which contributes to the relevant focal area indicators. Indicators are being used in assessing progress towards targets which is largely reported by relevant thematic reviews – and in particular through the global reviews undertaken in the Global Biodiversity Outlook. Document UNEP/CBD/SBSTTA/12/2 notes the opportunity to review the existing indicators in use in relation to the extent to which they reflect the application of the ecosystem approach.

The Global Taxonomy Initiative (GTI)

36. Planned activity 17 of the programme of work (annex to decision VI/8) on the GTI specifically addresses the ecosystem approach through "Support for ecosystem approach and work under the Convention on Biological Diversity on assessment including impact assessments, monitoring and indicators". Explicit actions include: (i) GTI support to the Millennium Ecosystem Assessment, under the caveat of the ecosystem approach, i.e. through the characterization of ecosystems, including better data on key species that comprise ecosystems and their role in maintaining ecosystem processes; (ii) facilitating better knowledge of species and their distributions, (iii) the communication of such knowledge, and (iv) provision of taxonomic overviews. The GTI portal on the CBD webpage, as well as the Bio-Net webpage (<http://www.bionet-intl.org/>), facilitate communication and networking of relevant information.

The Global Strategy for Plant Conservation

37. The Strategy (Decision VI/9) is accepted as a tool to enhance the ecosystem approach to the conservation and sustainable use of biodiversity and focus on the vital role of plants in the structure and functioning of ecological systems and assure provision of the goods and services such systems provide; Section B of the annex describes the rationale, scope and general principles of the GSPC. Paragraph 11(c) refers to the application of the ecosystem approach adopted under the Convention, recognizing the interaction of plants and plant communities, with other components of ecosystems, at all scales, and their role in ecosystem functions and processes. The ecosystem approach also implies, *inter alia*, intersectoral cooperation, decentralization of management to the lowest level appropriate, equitable distribution of benefits, and the use of adaptive management policies that can deal with uncertainties and are modified in the light of experience and changing conditions (para. 11(c) of the Annex). Section C of the annex presents 16 targets including, *inter alia*, Target 3 "Development of models with protocols for plant conservation and sustainable use, based on research and practical experience", which explicitly should be based on the ecosystem approach.

38. The European Strategy for Plant Conservation, adopted in 2002, is in line with the GSPC and the ecosystem approach http://www.plantaeuropa.org/html/plant_conservation_strategy.htm. It also contributes to the Pan European Biological and Landscape Diversity Strategy (PEBLDS), which is a European response to support the implementation of the CBD. In the year 2002, Colombia launched its national strategy for plant conservation: "Estrategia para la conservación de plantas", specifically applying the principles of the ecosystem approach.

Invasive Alien Species

39. In decision V/8, para 8 and Annex I, Guiding principle 3, it is noted, that all relevant partners, including the Global Invasive Species Programme, should give priority attention to geographically and evolutionarily isolated ecosystems, and to use the ecosystem approach and precautionary and biogeographical approaches, as appropriate in their work on invasive alien species. Decision VI/23, para 12d and Annex, underlines the need to incorporate invasive alien species considerations into national biodiversity strategies and action plans and into sectoral and cross-sectoral policies, strategies and plans, taking into account the ecosystem approach. The Annex contains guiding principles for the prevention, introduction and mitigation of impacts of invasive alien species that threaten ecosystems, habitats or species. Guiding principle 3 focuses on the ecosystem approach, stating that measures to deal with

invasive alien species should, as appropriate, be based on the ecosystem approach, as described in decision V/6 of the Conference of the Parties. No activities are elaborated.

40. The GISP tool box addresses the application of the ecosystem approach: <http://www.cabi-bioscience.ch/wwwgis/gt1purp.htm>. Case studies on the relationship between migratory species and the prevention of introduction, eradication or control of invasive alien species, pursuant to decision V/8, and considering the ecosystem approach were called for.

Economics, trade and incentive measures

41. In several decisions, the Conference of the Parties invited Parties, other governments and relevant international organizations to submit pertinent information on incentive measures, including case studies and best practices, to the Executive Secretary, and requested the Executive Secretary to compile and disseminate these submissions through the clearing-house mechanism and through other means (Decision IV/10 A, paragraph 1 (g); Decision V/15, paragraph 3 (a) and (b); Decision VI/15, paragraphs 5 and 6; and Decision VIII/18, paragraph 8 and 9). The submissions that were subsequently received contain a large number of practical examples for implementing incentive measures and undertaking valuation. The submissions were synthesized in a number of reports to SBSTTA and COP (UNEP/CBD/SBSTTA/11/INF/15, UNEP/CBD/SBSTTA/10/INF/8, UNEP/CBD/COP/7/INF/13, UNEP/CBD/COP/6/12/ADD3, UNEP/CBD/COP/5/INF/14, and UNEP/CBD/COP/3/24 and addenda), and are also available in the online database on incentive measures as well as in the toolkit on incentive measures available on CD-Rom.

Traditional knowledge, innovations and practices (Article 8j)

42. A critical statement was made by indigenous groups during COP 6, mentioning that in relation to forest management the rights and abilities of communities in managing forests are not sufficiently addressed. Suggestions for application of the ecosystem approach in a community-forest context were made (<http://www.forestsandcommunities.org/CBD%20CF%20Statement.htm>).

Biological diversity and tourism

43. In response to Decision V/25, paragraph 4b, whereby the Conference of the Parties requested that an assessment of interlinkages between tourism and biological diversity be transmitted to the Commission on Sustainable Development, an assessment was undertaken and forwarded to CSD (see Annex to decision V/25 for the text).

44. The guidelines on tourism (annex to Decision VII/14) emphasise the need for baseline information i.e. to enable impact assessment and decision-making and it is recommended that its compilation follow the ecosystem approach, especially regarding proposals for tourism developments. Guidance in this respect is specified. Additionally, it is noted that the ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning.

45. A report of the German Government (Ministerial Division for Conservation) includes case-studies for ecosystem approach implementation including in relation to tourism: <http://www.bfn.de/09/skript78.pdf>. On November 30, 2006, the Secretariat launched the Biodiversity and Tourism network at the World Tourism Forum in Porto Alegre, Brazil, with the UN World Tourism Organization and UNEP, linking 34 tourism projects and practitioners through an interactive website linked to the World Tourism Forum site (see www.desti-nations.net), to monitor the degree of implementation of the CBD Guidelines on Biodiversity and Tourism.

46. In collaboration with the Secretariat, UNEP developed a publication on biodiversity and tourism (http://www.unep.fr/pc/tourism/library/mapping_tourism.htm) and manuals applying biodiversity-friendly guidelines on tourism in protected areas (http://www.unep.fr/pc/tourism/library/sust_prot_areas.htm) and deserts (see <http://www.unep.fr/pc/tourism/library/Desert%20Guide.htm>). The UN WTO has launched a

project implemented with support from the German government (UNWTO Consulting Unit in Bonn) to apply the CBD Guidelines on Tourism and Biodiversity in the reconstruction of tourism facilities in countries affected by the 2004 tsunami in Asia.

Sustainable use

47. Three regional workshops were organized in order to develop practical principles and operational guidelines. Sustainable use and the ecosystem approach have been dealt with extremely interactively, as the two concepts are closely interlinked. The Regional workshops organized by the Secretariat in Moscow (30 May to 2 June, 2005) and Buenos Aires (13 to 16 September, 2005) applied the Principles and the ecosystem approach to fisheries, agriculture and forestry, whereas the Nairobi workshop (12 to 15 December, 2006) focused on agricultural biodiversity. Case studies presented by Parties on the implementation of the Principles and the ecosystem approach can be found at <http://www.cbd.int/programmes/socio-eco/use/workshops.shtml>.

48. In collaboration with the FAO, the Secretariat will produce recommendations on the sustainable use of agricultural biodiversity (based on the ecosystem approach) as an input to the in-depth review of the agricultural biodiversity programme of work, for consideration of SBSTTA 13.

Access to genetic resources and benefit sharing

49. There are no explicitly ecosystem approach based considerations under access to genetic resources and benefit sharing. The Ad Hoc Open-ended Working Group on Access and Benefit-sharing continues to elaborate and negotiate the international regime in accordance with decision VII/19 D. At this stage of negotiations attempts to promote ecosystem based approaches may not be appropriate.

Biodiversity and climate change

50. During the roundtable meeting on the interlinkages between biodiversity and climate change held in Montreal, Canada from 19 to 20 March, 2007, the ecosystem approach was identified as a possible nexus for synergies. Since the roundtable, activities in support of the application of the ecosystem approach to climate change and biodiversity were presented to the joint liaison group of the Rio Conventions for consideration in the design of relevant activities for the Secretariats, Parties and other relevant organizations.

51. The IUCN has produced a publication on taking an ecosystem approach to climate change adaptation in small island states (<http://www.iucn.org/themes/climate/docs/ecosystapproachadaptation.pdf>) and the International Institute for Development Studies has produced Livelihoods and Climate Change information papers (<http://www.iisd.org/publications/pub.aspx?pno=595>).

Liability and redress (Article 14.2)

52. The European Community directive adopted in 2004 foresees the application of alternative valuation techniques, including monetary valuation, if it is not possible to use the first choice resource-to-resource or service-to-service equivalence approaches. In these cases, the competent authority may prescribe the method to determine the extent of the necessary complementary and compensatory remedial measures.

53. In the United States, under the natural resource damage assessment (NRDA) regulations of the National Oceanic and Atmospheric Administration (NOAA), monetary valuation (the so-called value-to-value approach) is applicable when the injured and restored resources and services are not of the same type, quality, and value, and is used to calculate the value of gains from the proposed restoration actions and the value of the interim losses.

54. In decision VIII/29, on liability and redress, the Conference of the Parties invited Parties and other Governments to submit to the Executive Secretary examples of national/domestic legislation and

case-studies relating to liability and redress for damage to biological diversity, including approaches to valuation and restoration, and requested the Executive Secretary to compile this information and disseminate it through the clearing-house mechanism. It is anticipated that the submission received further to this request may include further implementation examples, including examples of national/domestic legislation and case-studies relating to liability and redress for damage to biological diversity, and approaches to valuation.

Protected areas

55. The Earth Conservation Toolbox project is a collaborative effort between WWF, The Nature Conservancy, the Wildlife Conservation Society, Equilibrium Consultants, the IUCN Commission on Ecosystem Management and the Convention on Biological Diversity. The toolbox reviews available tools and assemble these in a user friendly, web-based database and making them available free of charge to any user as part of the Conservation Commons initiative. The principle aim of the Toolbox is to provide a user-friendly way of accessing practical advice on conservation, but it will hopefully have some additional benefits:

- (a) Encouraging conservation programmes to look beyond protected area networks to the entire land and water mosaic;
- (b) Exposing users to approaches from different sources, including governments, NGOs, development agencies and the private sector;
- (c) Helping to implement the “ecosystem approach”, developed by the Convention on Biological Diversity (CBD); and
- (d) Fostering collaboration between partners, including the development of tools to fill identified gaps and testing and comparing different approaches.

56. The IUCN Commission on Ecosystem Management (IUCN-CEM) organized two workshops: (1) "Training workshop on how to apply Ecosystem Approach in five steps in protected areas in Viet Nam" and (2) "The ecosystem approach: tackling rights issues, biodiversity and livelihoods beyond protected areas. Their reports could be accessed <http://www.iucn.org/themes/ceem/ourwork/ecapproach/publications.html#wshops>. In addition IUCN published "The Ecosystem Approach : Five steps to implementation"⁸ which contains further interesting case studies. Case studies on the application of ecosystem approach in protected areas are available at <http://www.earthtoolbox.net/searchdb.asp>.

Technology transfer and cooperation

57. While the online database on technology transfer and scientific and technical cooperation, available through the clearing house mechanism of the Convention at www.cbd.int, contains pertinent information on technologies that are relevant for the implementation of the Convention, there is no example known of transferred technologies that have been developed in relation to the application of the ecosystem approach.

Support through the Global Environment Facility (GEF)

Guidance from the Conference of the Parties

58. In Decision V/13, further guidance to the financial mechanism, the Conference of the Parties decided to request that the Global Environment Facility, as the institutional structure operating the financial mechanism, should provide support: for projects utilizing the ecosystem approach, without

⁸ Shepherd, Gill. (2004). The Ecosystem Approach: Five Steps to Implementation. IUCN, Gland, Switzerland and Cambridge, UK. vi + 30 pp.

prejudice to differing national needs and priorities which may require the application of approaches such as single-species conservation programmes, in accordance with decision V/6.

59. In Decision VII/20, further guidance to the financial mechanism, the Conference of the Parties, in paragraph 5, invited the Global Environment Facility, in accordance with its mandate, and other funding institutions and development agencies to provide financial support for the implementation of the ecosystem approach, in accordance with decision VII/11.

Operational policies

60. The ecosystem approach is followed in the Operational Programs and identification of driving forces is stressed. In the proposed focal area strategy for biodiversity to be considered by the GEF Council in June 2007, the following reference was made: "The strategy is consistent with the integrated approaches to biodiversity conservation and sustainable use promoted by the ecosystem approach, the primary framework for action under the Convention on Biological Diversity (CBD). Together, these strategic objectives will make a substantial contribution to implementing most of the Millennium Development Goals, particularly environmental sustainability and poverty reduction, while meeting the priorities identified by the COP of the CBD. In addition, GEF support to policy framework development and strengthening institutions should result in favourable changes in country performance as measured by the RAF."

61. With respect to invasive alien species, "during GEF-4, support will be provided to: a) strengthening the enabling policy and institutional environment for cross-sectoral prevention and management of invasions; b) implementing communication and prevention strategies that emphasize a pathways and ecosystem approach to managing invasions; c) developing and implementing appropriate risk analysis procedures for non-native species importations; d) early detection and rapid response procedures for management of nascent infestations; and e) managing priority alien species invasions in pilot sites to ensure conservation and sustainable use of biodiversity."

62. In the focal area of international waters: "While one priority theme will serve as a focus for an international waters operation, there will be opportunities to address interlinked transboundary concerns as part of the ecosystem approach and provide multiple global environment benefits across focal areas through the inter-linkages. Cost-effective approaches of joining forces with other GEF focal areas for multiple benefits will be pursued, and partnerships are to be catalyzed to leverage the billions of dollars necessary to secure the socio-economic benefits that transboundary water systems provide to the communities that depend on them. The cost-effectiveness of such joint operations will be documented to inform GEF operations for future replenishment periods."

63. In the proposed Sustainable Forest Management Framework Strategy for GEF-4, a reference is made to decision VII/11, paragraph 7, in which the Conference of the Parties noted 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."

Project examples

(i) Benin - Forests and Adjacent Lands Management Project (World Bank, 2006):

64. The specific global objectives of the Forests and Adjacent Lands Management (GEF) Project for Benin are: 1) to increase and enhance the carbon storage capacity by enriching degraded gazetted forests and planting trees in forest adjacent lands, 2) to enhance protection of biological diversity within sustainable multiple-use production forests and explore suitable areas and/or species for ecotourism, 3) to prevent land and water degradation in forests and adjacent lands, 4) to preserve genetic diversity within forest species that are collected by rural populations for medicinal and consumptive uses, 5) to improve the use and efficiency of traditional energy by developing and implementing a national fuel-wood master plan, 6) to develop a communication and education strategy in rural and urban areas to raise awareness on

integrated ecosystem approaches and also to reduce national demand for forest-based resources, 7) to develop innovative monitoring and evaluation methods and systems for future use by local communities and national authorities demonstrating changes in ecosystem management patterns. The Project has four main components: Component 1 strengthens the institutional and technical capacity of the forestry administration, the private operators and nongovernmental organizations intervening in the Project; Component 2 ensures viable long term management of forest resources through contractual participatory management plans of the various natural forest types; Component 3 pilots an approach to promoting production and utilization of wood fuel from the sustainably managed forests; and Component 4 ensures proper project management and coordination mechanisms.

(ii) Bhutan - Assessment of Capacity Building Needs and Country Specific Priorities in Biodiversity (UNDP, 2002):

65. A report on anti-poaching of wildlife resources in the protected areas have been completed by NCD and shared with Divisional Forest Officers for comments. An antipoaching strategy was drafted. A 17-day training workshop on predator-prey dynamics was held in May. Seventeen park staff, including Research and Monitoring Wardens from all the parks, attended the training workshop. The training helped the participants to better understand the ecosystem approach to conservation. The project closed in 2004.

(iii) Maldives - Atoll Ecosystem-based Conservation of Globally Significant Biological Diversity in the Maldives' Baa Atoll (UNDP, 2002):

66. This project piloted the ecosystem approach to biodiversity conservation and sustainable development in two atoll ecosystems. A broader, more integrated perspective on conservation and resource management characterizes an ecosystem approach.

(iv) Regional (Europe and Central Asia) - Baltic Sea Regional Project (World Bank, 2003):

67. The development objective of the Baltic Sea Regional Project (Phase One) is to create some preconditions for application of the ecosystem approach in managing the Baltic Sea Large Marine ecosystem in order to achieve and maintain sustainable biological productivity of the Baltic Sea. The project activities takes place in Estonia, Latvia, Lithuania, Poland, and the Russian Federation, along their Baltic coastal areas and in the adjacent coastal and open sea area. There are three main project components. The project finances Large Marine Ecosystem Management activities; Land and Coastal Management activities; and Institutional Strengthening and Regional Capacity Building. Project Management costs cover local and regional project management, contracting procurement services, and costs for the social assessment and required financial audits.

(v) Regional - Sustainable Management of Inland Wetlands in Southern Africa: A Livelihoods and Ecosystem Approach (UNEP, 2004):

68. This MSP aimed to increase capacity for management of wetlands in both government and non-governmental agencies in southern Africa through generation of new knowledge on wetland functioning and development of sustainable land management options for wetlands. For wetland ecosystems in southern Africa, which are increasingly being used for agriculture, this principal objective offers great potential for benefits in terms of environmental protection, integrated land and water management and sustainable development. The new knowledge generated through this project informed GEF policies and guidance. Specifically, the project aimed to: 1) enhance the information available to decision-makers and other stakeholders in Southern Africa on wetland resources attributes, linkages with surrounding catchments and degradation status and potential risk; 2) develop generic guidelines for sustainable land management in wetlands for wetland managers, natural resource planners, and wetland users based on new knowledge of the functions of common wetland types, their processes and linkages with catchments - the guidelines comprise protocols for assessing the likely impacts and limits of a wide spectrum of human activities in wetlands and surrounding catchments; 3) demonstrate innovative interventions for sustainable

land and water management in those wetland types commonly utilized for agriculture and other livelihood-supporting activities; 4) enhance the capacity and awareness of sustainable management of wetlands in the southern Africa region at government, extension and grassroots levels. A regional approach was chosen in addressing these issues primarily because of the widespread dependence of livelihoods on inland wetland ecosystem goods and services in several southern Africa countries. Surveys indicated that while actual use varies from site to site, the use of wetlands in most of the countries is similar and land degradation and other problems related to wetland utilisation are comparable. Furthermore, many of the pressures impacting on wetlands are common to all the eight countries. It is envisaged that some of the work will be conducted at the regional scale (e.g., using remotely sensed data). A regional approach enables production of local as well as generic outputs applicable to all of the countries involved and beyond.

(vi) Global - Conservation & Management of Pollinators for Sustainable Agriculture through an Ecosystem Approach (UNEP):

69. The development goal of the project is to conserve, sustainably use and manage pollinators. The project has three principal objectives: 1) develop and implement tools, methodologies, strategies and best management practices for pollinator conservation and sustainable use; 2) build local, national, regional and global capacities to enable the design, planning and implementation of interventions to mitigate pollinator population declines, and establish sustainable pollinator management practices, and 3) promote the co-ordination and integration of activities related to the conservation and sustainable use of pollinators at the international level to enhance global synergies.
