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UPDATED SYNTHESIS OF INFORMATION CONTAINED IN THIRD NATIONAL REPORT

Implementation of the Thematic Work Programmes of the Convention

Note by the Executive Secretary

INTRODUCTION

1. This addendum covers a synthesis of information from the third national reports concerning the implementation of the thematic work programmes adopted under the Convention. These are programmes of work on inland waters ecosystems, marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, biological diversity of dry and subhumid lands and biodiversity of mountain ecosystems. The programme of work on island biodiversity is not included because it was adopted only at the eighth meeting of the Conference of the Parties.

INLAND WATER ECOSYSTEMS

2. The Conference of the Parties, in its decision IV/4, adopted a programme of work on biological diversity of inland water ecosystems. The work programme addresses the following areas:

(a) Assessment of the status and trends of the biological diversity of inland water ecosystems and identification of options for conservation and sustainable use;

(b) Provision of scientific advice and further guidance to assist in the national elaboration of Annex I of the Convention;

(c) Review of methodologies for assessment of biological diversity (as pertaining to inland water ecosystems); and

(d) The urgency of needed action on taxonomy.

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3. In the third national report, questions were asked about whether the work programme had been integrated into national biodiversity strategies and action plans (NBSAPs) and relevant sectoral policies, whether priorities had been identified for the implementation of the work programme, whether measures had been taken to promote synergies among related agreements and activities, steps taken to improve related data, and measures taken to promote the application of the guidelines for rapid assessments .

Synthesis of responses and comments

Incorporation of the objectives and relevant activities of the programme of work into NBSAPs, wetland policies and strategies, and other relevant plans

4. Most Parties (97) report that they have incorporated objectives and relevant activities into their NBSAPs. However, most of them (77) have done so partially and not all objectives and activities are implemented. Some Parties (20) have integrated objectives and activities fully and implemented these fully. Only a few Parties provided further relevant details and comments on the objectives and activities incorporated into their NBSAPs.

5. Most Parties (91) report that they have integrated objectives and relevant activities of the work programme in wetland policies and strategies. Only some Parties (31) have referred to specific water policy, strategy, or plan in which objectives and relevant activities related to the work programme were integrated. Among these 31 Parties, some (20) commented on policies, strategies, and plans that are specific to wetlands.

6. Some Parties (20) have mentioned other national environmental policies, strategies, and plans in which the biodiversity of inland waters has been considered. Among these 20 Parties, a few (6) (Bangladesh, Canada, China, El Salvador, Romania and Turkmenistan) have considered inland water biodiversity in policies, strategies, and plans related to fisheries, and a few Parties (3) (Belarus, Colombia, India) have done so in policies, strategies, and plans related to development (e.g., Colombia's National Plan of Development 2002 - 2006 "Towards a Communitarian State").

7. Canada is the only Party to mention activities in urban areas through the New Deal for Cities and Communities 2005 which targets new funding at environmentally sustainable municipal infrastructure, including water and wastewater systems, and through the Green Municipal Fund that offers grants and low-interest loans for sustainable infrastructure initiatives that generate measurable environmental, economic and social benefits.

8. Many Parties (87) report that they have integrated objectives and relevant activities of the work programme into integrated water resources management (IWRM) and water efficiency plans. Many Parties (70) have done so partially and a few (17) fully. However, only a few Parties (8) (Belgium, Brazil, Canada, Lebanon, Malawi, Chile, France and Portugal) explicitly mentioned their IWRM strategies or plans or refer to application of IWRM in projects. It is noteworthy to mention Canada which has been involved in IWRM for many years and which mentioned the implementation of IWRM at several levels (provincial board, river basin level) and in many projects (e.g. Great Lakes Action Plan 2001-2006, Georgia Basin Action Plan, St. Lawrence Action Plan and Vision 2000, Lake Erie Lakewide Management Plan, Fraser Basin Council, Integrated Watershed Modelling of the South Saskatchewan River Basin).

9. Most Parties (92) report that they have incorporated the objectives and relevant activities of the programme of work into enhanced coordination and cooperation between national actors. However, only a few Parties (12) mentioned activities related to the enhancement of coordination and cooperation

between national actors. Among them, a few Parties (7) mentioned a committee, board, or council responsible for coordination. A few Parties mentioned coordination at the local level (county, district, or watershed committee) and in other settings. For example, Ethiopia has conducted an institutional and legal review through the involvement of key national stakeholders of wetland and inland water ecosystems in order to produce a workable institutional set-up for efficient conservation and wise use of inland water ecosystems. Lebanon mentioned the MedWetCoast Project which developed many local, national and international partnerships and collaborations. A few Parties also mentioned cooperation with the private sector.

10. Some Parties (29) have referred to a legislative framework, whether a water law, act, or code. Among these, a number of EU member states mentioned the Water Framework Directive as incorporating objectives and activities of the Inland Water programme of work. Noteworthy examples include the following two cases: i) Israel amended its Water Law in 2004 to include the allocation of water for nature and landscapes assets, i.e., for the conservation and rehabilitation of natural assets and landscapes including rivers, springs, and wetlands; and ii) China implemented in 2003 a spring fishing ban in the Yangtze River in order to maintain and use reasonably the aquatic biological resources of the Yangtze River and ensure the sustainable fishery development in that river.

Identification of priorities for each activity in the programme of work, including timescales, in relation to outcome- oriented targets

11. Some Parties (20) said that they had both identified priority activities and developed outcome-oriented targets. Among these parties, 7 mentioned that they had done so through a specific water and/or wetland policy or plan (e.g., the Water Framework Directive for the European Community, or the Wetland Sector Strategic Plan of Uganda), whereas 2 said they had done so through other policies or plans not specifically related to inland waters (e.g., the poverty reduction strategy of Benin). Two Parties have both identified outcome-oriented targets and priority activities through their NBSAPs.

12. India was the only Party which mentioned the organization of consultative workshops in different regions of the country to identify key issues of wetlands which would be addressed through integrated conservation and development plans.

13. Some Parties (16) said that outcome-oriented targets had been developed but priority activities were not developed. Among these Parties, 4 (Canada, Mauritania, Sweden, Viet Nam) mentioned water policies or plans to refer to the targets (e.g., the action plan on protection and sustainable development of wetlands 2004-2010 in Viet Nam), and 2 Parties (Japan and Belarus) mentioned the outcome-oriented targets in relation to the Ramsar Convention.

14. Some Parties (25) have developed priority activities but not outcome-oriented targets. Among these Parties, 2 Parties (Brazil and Denmark) referred to water policies/plans whereas 5 Parties mentioned more general policies or plans (e.g., Hungary's National Nature Conservation Master Plan; the Medium Term Philippine Development Plan). A few Parties (4) (Czech Republic, Indonesia, Poland and Republic of Moldova) have identified priorities for each activity in the programme of work through their NBSAPs. A few countries mentioned that their NBSAPs help to set general priorities.

Promoting synergies between this programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level

15. Some Parties (25) responded that potential measures were identified for synergy and joint implementation. Despite being a non-Party of the Ramsar Convention, Turkmenistan mentioned that its

NBSAP provides for a range of targets and activities compatible with the principles of the Ramsar Convention and highlights the possible synergies between Ramsar and CBD. Among these 25 Parties, 6 Parties identified synergies and joint implementation in relation to the management of their Ramsar sites, 3 Parties mentioned specific bodies, committees, or ministries to promote the synergies (e.g., Brazil's National Wetlands Committee or Turkey's Ministry of Environment and Forestry) and 2 Parties identified synergies and joint implementation in specific programmes, strategies or plans (e.g., the National Wetlands Diagnosis of Brazil).

16. Many Parties (52) said that some measures were taken for joint implementation. Among these 52 Parties, 14 Parties mentioned a specific body, committee, or ministry in charge of promoting synergies (e.g., National Wetland Committee in Chile, the "Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification" part of the National biodiversity Committee in Morocco, and the Danish Forest and Nature Agency). 11 Parties mentioned synergies through the management of Ramsar sites, and 9 Parties mentioned specific strategies or plans in which synergies and a joint work plan were included.

17. A few Parties (9) have taken comprehensive measures for joint implementation. Three countries mentioned specific projects in relation to comprehensive joint implementation (e.g., habitat restoration including water retention in bog meadows, bog meadow habitat restoration and bog meadow vegetation control in Hungary and the sustainable use, management and rehabilitation of flood plain in the Middle Tisza District in Hungary which started in 2004).

Steps to improve national data on goods and services provided by inland water ecosystems, related socioeconomic variables, basic hydrological aspects of water supply, species at all taxonomic levels, and threats to inland waters ecosystem

18. Many reporting countries (49%) indicated that they had taken steps to improve national data on goods and services provided by inland water ecosystems, while some (29%) are taking steps towards this direction and some (22%) are yet to take any steps.

19. Of all the responding countries, many countries (60 to 65%) indicated that they had taken steps to improve data on the basic hydrological aspects of water supply, on species and all taxonomic levels, and on threats to inland water ecosystems. However, only some countries (38%) indicated that they had taken steps to improve national data on the uses and related socioeconomic variables of goods and services provided by inland water ecosystems.

20. Some Parties (35%) countries provided specific lists of named data sets on inland waters while some Parties (40%) listed general inventories. Some Parties (17%) mentioned work done to explore socio-economic or valuation questions to their inventories and some Parties (15%) elaborated on the state of water quality monitoring schemes.

21. Some Parties (16%) elaborated on threats such as those from urban, industrial and agricultural wastes, and development projects, with a view to addressing them. A few Parties (10%) showed through their descriptions a move towards using an integrated approach at some level within the management of data on inland waters.

Promoting the application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems

22. Most (83) countries reported that the guidelines have not been reviewed. Only some countries (17) said that the guidelines had been reviewed and their application and/or promotion is pending. A few (7) had promoted and applied the guidelines.

23. Three countries reported improvements to their databases (Belgium, Malaysia, Mauritania). Three countries (Estonia and Finland and Rwanda) reported on the improvement of laws or the creation of new legislation to apply the guidelines. Some (16) countries emphasized positive aspects of their rapid response programmes.

24. The European Community reports that the assessment system developed for the Water Framework Directive provides a more comprehensive assessment than that proposed under the CBD rapid assessment guidelines.

25. A few (7) countries reported improvements to their monitoring systems. Chile reported that they are using biodiversity as a secondary norm of quality of inland waters, and Lebanon reports research on the use of macrophytes as bioindicators. In Lesotho, the South African Scoring Standard has been adopted for assessment of rivers. Portugal reports that the valuation of cultural heritage and the use of ecological indicators are being developed (see http://medwetnet.icn.pt). Uganda reports that rapid assessment of inland water ecosystems has been done using selected indicator species such as higher plants, fish, dragonflies and water birds and that the national data is available in the database of its national wetlands programme.

26. Malaysia emphasizes the importance of multi-sectoral participation in remediation and mitigation measures. Finland notes the need to promote sustainable use in water management, and Colombia is beginning to apply the Ecosystem Approach to the implementation of the guidelines.

27. Six countries mentioned some of the problems they encountered in the implementation of the guidelines. Colombia reported that monitoring the status of the biological diversity of continental water ecosystems in the country is done but in a fragmented way and through small sub-regional projects, which affects the general interpretation of the ecosystem status. Three countries mentioned lack of some capacities for applying the guidelines.

Overall assessment of achievements and challenges

28. There is a relatively high degree of incorporation of the objectives and relevant activities of the programme of work on the biological diversity of inland waters, whether partially or fully, through NBSAPs, wetland policies and strategies, Integrated Water Resources Management and water efficiency plans, or enhanced coordination plans. Similarly, there is a high degree of incorporation of the objectives and relevant activities of the programme of work into enhanced coordination and cooperation between national actors. For Parties to both the CBD and Ramsar, most are promoting synergies between the CBD programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level.

29. Only some Parties have identified priority activities or developed outcome-oriented targets. Some Parties, however, have well developed procedures to develop integrated policies and management which lead to the more balanced management approach that inland waters require. Throughout the comments received there is limited mention of the ecosystem approach – although a number of activities

reported (such as integrated water resources management, water framework directives etc.) represent applications of the approach using different terminology.

30. Data generation for inland waters continues to be dominated by technical and biological interests whereas socioeconomic data are clearly still weak. Likewise, data generation on threats is also a weak area. Realisation of this is perhaps one factor contributing to the limited uptake of the guidelines for the rapid assessment of the biological diversity of inland water ecosystems (largely focussed on biological aspects) although a few Parties, mainly developed countries, report they have not used the guidelines because they have more comprehensive guidelines.

31. Main challenges identified by many countries for implementing this work programme include:

- Lack of mainstreaming inland waters ecosystem management into broader relevant policy frameworks;
- Limited capacities for inland waters ecosystem management;
- Lack of adequate information, monitoring, technical standards and practices for inland waters ecosystem management;
- Lack of financial, human and technical resources;
- Inadequate policy and legislative frameworks and weak enforcement capacities; and
- Lack of inter-sectoral coordination or synergies

MARINE AND COASTAL BIODIVERSITY

Introduction

32. The fourth meeting of the Conference of the Parties adopted decision IV/5 on conservation and sustainable use of marine and coastal biological diversity, including a programme of work. The implementation of the programme of work adopted in decision IV/5 was reviewed by the seventh meeting of the Conference of the Parties. The review resulted in the updating and elaboration of the programme of work, which is now contained in Annex 1 to decision VII/5. The elaborated programme of work aims to assist the implementation of the Jakarta Mandate at the national, regional and global level. It identifies key operational objectives and priority activities within the five key programme elements, namely: implementation of integrated marine and coastal area management, marine and coastal living resources, marine and coastal protected areas, mariculture and alien species and genotypes. It also provides a general element to encompass the coordination role of the Secretariat, the collaborative linkages required and the effective use of experts, as well as an element on enabling activities.

33. In the third national report, Parties were asked to answer eight questions, covering the above-mentioned five elements of the programme of work, with one question focusing on the general implementation of the programme of work on marine and coastal biodiversity within the framework of national strategies and action plans.

Synthesis of responses and comments

Marine and Coastal Biodiversity in Country Strategies and Action Plans

34. Many Parties indicated that they have included in their strategies and actions plans the following key elements for marine and coastal biodiversity conservation and sustainable use: (1) the development

of new marine and coastal protected areas (75%); (2) improving the management of existing marine and coastal protected areas (74%); (3) building capacity within the country for management of marine and coastal resources (71%); (4) instituting improved integrated marine and coastal area management in order to reduce sediment and nutrient loads into the marine environment (62%); (5) protection of areas important for reproduction (71%); (6) improving sewage and other waste treatment (66%); and (7) controlling excessive fishing and destructive fishing practices (74%).

35. Different levels and types of progress have been reported with regard to establishment or expansion of the marine and coastal protected areas (MPAs). For example, Governments of different levels in Australia work together to establish a national representative system of marine protected areas (MPAs). Canada has announced an MPA strategy for a federal network of marine protected areas in all three of bordering oceans and established several MPAs, including British Columbia's Endeavour Hydrothermal Vents (2003), the Gully off Nova Scotia as the largest marine canyon in the western North Atlantic (2004), and 3 new Atlantic MPAs (2005). By 2004, China had established 90 marine nature reserves, among which 24 are at national level. As a contribution to Natura 2000 network, Germany established ten MPAs in its Exclusive Economic Zone of the North Sea and Baltic Sea. Indonesia established a target to gazette 10 million ha of its waters as MPA by 2010. South Africa is also preparing a programme to expand the number and extent of MPAs, with a target of 20% of the coastline by 2010.

36. Capacity building is in most cases an integral part of respective marine and coastal resources management programs. For example, Brazil reported on cooperative learning programmes for environmental education at coastal areas using the information technology, aiming at the continuous training of primary school teachers. India also reported various training and educational initiatives, including periodic training programmes for school and college teachers, forest officers and research scholars on estimation of bioresources in the critical habitats like mangrove and coral reefs, as well as an annual training programme on mangrove biodiversity assessments. Israel conducted professional training courses for inspectors as well as oil pollution exercises and drills. In Niue, education programs are closely linked to community-based fisheries management program.

37. Institutional strengthening for integrated marine and coastal area management, which involves the efforts for reducing sediment and nutrient loads into the marine environment and improving sewage and other waste treatment, was reported by many Parties. Noteworthy examples include: Australia's national water quality management strategy (NWQMS, 1992) and development of NWQMS national guidelines for water recycling and its Coastal Catchments Initiatives developing programs to achieve target reductions in pollution from sources such as heavy metals, sewage, excess nutrients, waste oil and chemicals, transport emissions and toxic air pollutants; and China's Blue Sea Action Plan in Bohai Sea and the control system for the total amount of land-based pollutants.

38. To control excessive fishing and destructive fishing practices, Australia prepared a draft National Plan of Action for reducing incidental catch of seabirds in longline fisheries (NPOA-Seabirds). Many parties highlighted the difficulties associated with the enforcement of existing policies and programs for fisheries resources management and protection.

39. Some progresses were also reported with regard to the development of a comprehensive ocean policy as well as incorporation of local and traditional knowledge into management of marine and coastal resources.

Implementation of Integrated Marine and Coastal Area Management (IMCAM)

(a) Institutional Arrangements for IMCAM

40. A wide range of responses was provided with regard to establishment and/or strengthening of institutional, administrative, and legislative arrangements for the development of integrated management of marine and coastal ecosystems. 67 Parties reported that they are in various stages of developing appropriate institutional arrangements, while 28 Parties reported that necessary institutional arrangements are in place.

41. Noteworthy examples include: Australia's National Ocean Office coordinating the implementation of Australia's Oceans Policy and the development of regional marine plans across the relevant agencies and jurisdictions; Bangladesh's multi-ministerial and multi-sectoral program development office and the approval of coastal zone policy (2005); Belgium's coordination center for integrated coastal zone management; Brazil's national coastal management program; Canada's Oceans Act (1997), Canadian Oceans Strategy, and integrated coastal management initiatives on three coasts; China's national zoning of ocean functions; Lebanon's coastal area management program; and the Philippines's Sustainable Archipelagic Development Framework.

(b) Implementation of Ecosystem-based Management

42. Compared to the progress on institutional arrangements for IMCAM, an early stage of progress is observed on the implementation of ecosystem-based management. Only 11 Parties reported that necessary arrangements are in place for the ecosystem-based management of marine and coastal resources, while 74 Parties reported that developments of institutional arrangements for the ecosystem-based management were underway in different stages.

43. Some Parties pointed out that policies and enforcement measures for ecosystem-based management are yet to be developed due to lack of sufficient research and understanding. Successful pilot initiatives were reported by Canada (partnerships among sectors like forestry, agriculture, fisheries, tourism, government, and academics to manage bays and watersheds in New Brunswick), the Philippines (Biodiversity Conservation and Management of the Bohol Island Marine Triangle), and Thailand (Ao Phang Nga Bay Conservation and Restoration Project: 2004-2007).

Marine and Coastal Living Resources

(a) Critical Component of Marine and Coastal Ecosystems and Key Threats

44. Some significant progress was observed with regard to the following inter-linked processes for the management of critical components of marine and coastal ecosystems: (1) establishment of plans for a comprehensive assessment of marine and coastal ecosystems (20%). For example, Kenya initiated the assessment of the state of coastal resources, involving the sensitivity mapping, programmes for sea turtles conservation, coral reefs monitoring and mangrove conservation policy; (2) comprehensive assessment in progress (22%). For example, Brazil conducted mapping of environmental sensitivity to oil in the coastal and marine zone and is preparing an atlas of coastal erosion and progradation of the Brazilian coastline, and China initiated a program for monitoring national offshore marine ecology in 2004, establishing 15 ecological monitoring areas; (3) identification of critical ecosystem components and the development of management plans (31%). For example, Australia took initiatives for the development of pilot "Sea Country" plans involving indigenous custodians in identifying management priorities and actions, including cultural heritage and values of marine and coastal ecosystems. Germany prepared Red

Lists of endangered animal and plant species and biotope types for the marine and coastal areas of the German North Seas and Baltic Sea regions. This list is to be revised by 2008. India has completed the assessment of critical habitats of the country and developed databases to manage these critical habitats; (4) management plans for important components of marine and coastal ecosystems are in place (16%). Israel has identified two rare and threatened ecosystems, including aquatic ecosystems and the sand and kurkar rocks along the Mediterranean shoreline, and prepared policy document for their preservation. Lebanon carried out an assessment of marine and coastal biodiversity thorough Biodiversity Country Study. Malaysia has completed an assessment and monitoring of mangrove ecosystems using remote sensing and global information systems (GIS), and launched the national mangrove replanting programme.

45. The comments from many reports indicate most of them are in the process of identifying and managing critical components of marine and coastal ecosystems to address the key threats to their sustainability. The exceptions are 15 Parties that indicated no progress.

(b) Implementation of the Convention's Work Plan on Coral Reef

46. A considerable number of Parties responded that they are currently implementing various activities related to the conservation of coral reefs, as identified in the Convention's work plan. Ecological assessment and monitoring of reefs were reported by 43 Parties. Some examples include the coral reefs monitoring pilot project of Brazil, which is to establish the baselines for the implementation of national monitoring program, and connect to Global Coral Reef Monitoring Network (GCRMN); and Japan's efforts to establish an international coral reef research and monitoring centre in 2000, to develop long-term national coral monitoring program, and to conduct national survey of coral coverage every 5 years.

47. Thirty-three Parties reported the conduct of socio-economic assessment and monitoring of communities and stakeholders, and 22 Parties confirmed their initiatives on identification and implementation of additional and alternative measures for securing livelihoods of people who directly depend on coral reef services. In the case of Australia, socio-economic assessment and monitoring of communities and stakeholders were undertaken as part of the Great Barrier Reef Marine Park Authority (GBRMPA)'s Climate Change Response Program, which also included identification and implementation of adaptation strategies. Through COREMAP (Coral Reef Rehabilitation and Management Program), Indonesia conducted socio-economic assessment and monitoring of communities and stakeholders in 10 provinces and made inter-ministerial collaborative efforts on the identification and implementation of alternative livelihoods of people directly dependent on coral reef services. India provides alternative livelihoods programs for communities directly dependent on coral reefs under the "Techno-socio-economic program" as well as through CORIDO (Coral Reef Degradation in the Indian Ocean Programme).

48. Management of coral reefs through integrated coastal management and protected areas was reported by 34 Parties. Brazil prepared an atlas of coral reefs in the Brazilian conservation units, which is under the Directorate of protected areas, and took initiatives to establish Coral Reef Protection Network. Saint Lucia reported that 26 marine reserves were identified and governed by Soufriere Marine Management Authority. Viet Nam highlighted that their efforts on coral reefs protection are closely linked to integrated coastal management projects. The Philippines emphasized their efforts on conservation of Tubbataha Reef National Marine Park and World Heritage Site.

49. Forty Parties reported that stakeholder partnerships, community participation programmes and public education campaigns for coral reef conservation are in place, while 25 countries confirmed on the

provision of training and career opportunities for marine taxonomists and ecologists. CORIDO in India as well as other various initiatives in Kenya including those of CORIDO, IUCN/WWF, KWS, KMFRI, and CDA include the component on public outreach and awareness building activities.

50. Twenty-seven Parties informed their efforts on restoration and rehabilitation of degraded coral reef habitats. For example, Japan launched coral reef rehabilitation project in 2005, and published manuals for restoration and remediation of coral reefs. Malaysia's State Committee for inland and coastal water assessed the need for coral rehabilitation including artificial reef development.

51. Development of early warning system for coral bleaching as well as a rapid response capability to document coral bleaching and mortality was identified in many Parties as priority, but implementation is yet to be made. Only 11 to 13 Parties reported the current implementation of such warning and response system. For example, Australia reported that a coral bleaching response program was established by the Great Barrier Reef Marine Park Authority (GBRMPA), which included early warning system and rapid response capability as well as building partnerships with various stakeholders. Likewise, Brazil described its project on global climate change and coral bleaching, which aims to assess the effects of the increase in seawater temperature, related to global change, on the photosymbiotic organisms in corals. Monitoring of coral bleaching is also underway in Saint Lucia.

Marine and Coastal Protected Areas

52. Significant level of progress is reported on the establishment of (68%) and the development (56%) of management plans for marine and coastal protected areas. Many countries (42) also reported that effective management of these marine and protected areas was put in place with enforcement and monitoring, and that a national system or network of marine and coastal protected areas is under development (49%). Many Parties (38%) also responded that their national system of marine and coastal protected areas include areas excluding extractive uses. Further progress with regard to the national system or network of marine and coastal protected areas is reported by some Parties, with 28% having the system in place and 31% having the system surrounded by sustainable management practices.

53. Key examples showing different levels of progress include: Australia's efforts to establish national representative system of marine protected areas (MPAs); creation and implementation of Ponta do Tubarao State Sustainable Development Reserves of Brazil; 5 MPAs in Canada and the preparation for the national system of network of marine and coastal protected areas; 31 MPAs in India; Indonesia's initiatives for formulating policies on MPAs; 500 coastal areas being protected as nature reserves under Nature Conservation Act of Norway; and Viet Nam's preparation of the draft regulation on MPAs.

Mariculture

54. Environmental impact assessment is most widely accepted and implemented tools for minimizing adverse impacts of mariculture on marine and coastal biodiversity (53%). Many parties use native species and subspecies in mariculture (47%) for the same purpose as well as employ selective methods in commercial fishing to avoid or minimize by-catch (42%). To a different extent, some parties apply the following techniques: development and application of effective site selection methods within a framework of Integrated Marine and Coastal Area Management approaches (39%); development of effective methods for effluent and waste control (39%); development of appropriate genetic resource management plans at the hatchery level (23%); development of controlled hatchery and genetically sound reproduction methods in order to avoid seed collection from nature (26%); development of environmentally friendly sound practices for spat collecting operations (23%); implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polypoids (27%);

use of proper methods of breeding and proper places of releasing in order to protect genetic diversity (28%); minimizing the use of antibiotics through better husbandry techniques (31%); and consideration of traditional knowledge as a source to develop sustainable mariculture techniques (27%).

Alien Species and Genotypes

55. Some progress is noted in controlling pathways of introduction of alien species in the marine and coastal environment, with some countries having put in place the following: mechanisms to control potential invasions from ballast water (30%); mechanisms to control potential invasions from aquaculture (30%); and mechanisms to control potential invasions from accidental releases (16%). Only a few parties established mechanisms to control potential invasions from hull fouling (7%).

56. Some examples of progress include the following: Australia has established national introduced marine pests coordination group (NIMPCG) to develop a comprehensive national system for the prevention and management of marine pest incursions; In Canada, control of ballast water is being undertaken in accordance with "Voluntary Guidelines for the Control of Ballast Water Discharges from Ships Proceeding to the St. Lawrence River and Great Lakes"; China and South Africa developed strategic plans of ballast water management through the demonstration projects of GioBallast (GEF/UNDP/IMO global project of ballast water management); and Malaysia conducted a regional workshop, through the initiative of NACA, on alien-species carrying pathogen.

Overall Assessment of Progress and Challenges

57. This review reveals that great efforts have been made for strengthening institutional arrangements and developing policies and plans for integrated marine and coastal area management in which biodiversity conservation is an essential component. Enhanced governance on area-based management of marine and coastal resources has facilitated expansion and new establishment of marine protected areas. Full application of ecosystem-based management is yet to be realized, however, primarily due to limited understanding of the tools and approaches that will enable the operationalization of ecosystem-based management in an appropriate context of local implementation. Moreover, lack of adequate scientific support as well as appropriate managerial, technical, institutional and financial capacities at national and local levels become major obstacles.

58. Other challenges identified by some countries include: low political support and public awareness; limited stakeholders participation; limited integration of biodiversity agenda into socio-economic development planning and other sectoral planning; institutional weakness; limited use of existing scientific and traditional knowledge; lack of economic incentives; little understanding and documentation on biological diversity loss; lack of an adequate mechanism for sharing benefits arising from the use of biodiversity resources; and limited technology transfer.

AGRICULTURAL BIODIVERSITY

Introduction

59. In decision III/11, the Conference of Parties adopted the agricultural biodiversity programme of work with the objectives to promote the positive effects and mitigate the negative impacts of agricultural practices on biological diversity, and promote the conservation and sustainable use of agricultural biodiversity and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. The programme of work contains four key elements: assessment, adaptive management, capacity-building and mainstreaming.

60. In the third national report, Parties were asked to answer 14 questions which cover four programme elements of the programme of work and other activities linked to the programme of work (national strategies, genetic use restriction technologies (GURTS) and Plan of Action on Pollinators).

Programme element 1: Assessment

Synthesis of responses and comments

Specific assessments of components of agricultural biodiversity such as on plant genetic resources, animal genetic resources, pollinators, pest management and nutrient cycling

61. Many countries (67%) are undertaking assessments of various components of agricultural biodiversity. Twenty-one countries indicated that they had completed assessments on agricultural biodiversity. Eighteen countries said that no such assessments were conducted. From detailed comments, some countries assessed fruits, vegetables, cereals and farm animals. Some countries also made assessments on wild relative plant species, traditional and local cultivars and local races and wild relative animal species. A few Parties mentioned assessment of soil biodiversity, including microorganisms important for agro-products, food processing, nitrate use and agriculture. Some Parties mentioned their participation in FAO reports on the state of the world's animal and plant genetic resources as a part of their work to implement Activity 1.1.

62. Some Parties have conducted an assessment of additional components of agricultural biodiversity such as pollinators (20%), pest management (31%) and nutrient cycling (17%) (Activity 1.2). Some Parties have conducted an assessment of pollinator's genetic resource, as well as of taxonomy and restoration and management of specific habitats and species. Kyrgyzstan mentioned that bees increase fruit crop yield by 60-70%, buckwheat yield by 60% and sunflower yield by 80%, pointing out the goods and services pollination provides.

63. Assessments of pest management mentioned included a specific assessment of invertebrate and vertebrate pests (grasshoppers, various lepidopterans pests, weeds) and their management. Pest management practices mentioned included integrated pest management (IPM), beetle banks, mixed and companion cropping, sustainable management of field cropping, biological control and use of biological products (microbial, medicinal plants).

64. A number of Parties have undertaken assessments of nutrient cycling, including specific nutrients (nitrate, phosphorus) and/or specific crops (corn, pineapple, tropical fruits). Denmark mentioned that nitrate washout was reduced by 50% in its agricultural area as a result of the implementation of relevant EU directives.

Assessment of the interactions between agricultural practices and the conservation and sustainable use of the components of biodiversity referred to in Annex I of the Convention

65. Some Parties (23%) have completed assessments of the interactions between agricultural practices and the conservation and sustainable use of ecosystems and habitats, species and communities and genomes and genes of social, scientific or economic importance (Activity 1.4). Only 4 countries had undertaken comprehensive assessments. Forty-six countries indicated that such assessments were under way. Forty countries reported that no such assessments were made.

66. Important ecosystems and habitats assessed include protected areas, forests, hills, river meadows, peat land, wetlands, bush lands and semi-natural grassland. Species and communities mentioned include

birds, mammals, reptiles, invertebrate groups, herbal plants and other plants. One assessment undertaken by Austria finds that herbal plants significantly increased in number in organic plots of winter crops compared to cultivated areas employing conventional practices.

67. Information on genes and genomes was provided by some countries on the genetic characteristics of Bambara groundnut, coriander, date palm, okra, sesame, lupin, roselle, tamarind, watermelon, corn, cotton, soy, landrace animal breed and cattle breeds. These genetic studies were undertaken to assess the potential economic value of these species, as well as the potential to increase the quality of life of farmers through, for example, increases in protein content in certain crops.

68. Few Parties have undertaken socio-economic studies to evaluate the capability of farming systems to provide environmental protection and economic viability. A few countries have assessed organic farming and found that it provides economic benefits to farmers in addition to some protection of birds, mammals, insect groups, plants and soil biodiversity.

69. Some details on the type of tools used for the assessment, the quantification of interactions and the monitoring of the effects of agriculture were provided. For example, some countries used spatial information system for crop growth monitoring and annual agricultural land use.

Assessment of the knowledge, innovations and practices of farmers and indigenous and local communities in sustaining agricultural biodiversity and agroecosystem services for food production and food security

70. Slightly over half of reporting countries are undertaking assessments of the knowledge, innovations and practices of farmers and indigenous and local communities (Activity 1.3). Only 11 countries have completed assessments in this regard. 46 countries have not undertaken such assessments.

71. Assessments of farmers' knowledge, innovations and practices mentioned include agricultural management practices (crops, land manure, pesticide storage and application and water), use of neglected and underutilized crop species, the impact of minor crops on the lives and livelihood of farmers and animal technologies.

72. Some Parties reported also having conducted assessments related to indigenous and traditional knowledge, innovations and practices, such as traditional management practices on water, soil fertility, seed conservation, cropping systems, tillage, fisheries, veterinary and animal husbandry, along with issues related to the production and promotion of ethnic food. A few Parties mentioned having conducted ethno-biological studies on the traditional use of animals and plants, and socio-economic studies on the use of traditional crop varieties. A few Parties have reported positive outcomes related to the promotion of traditional and regional products on the trade market, in media campaigns or in national culinary contests.

Monitoring an overall degradation, status quo or restoration/rehabilitation of agricultural biodiversity since 1993

73. Many Parties (63%) mentioned monitoring the status and trends of agricultural biodiversity (Activity 1.5). A small number of Parties (17) observed no changes in agricultural biodiversity since 1993; some Parties (38) observed an overall degradation, while some countries (21) observed an overall restoration or rehabilitation of agricultural biodiversity. Forty-five countries indicated that they did not monitor changes in agricultural biodiversity.

74. In accordance with some comments provided, the overall degradation of agricultural biodiversity was characterized by a decline in the population of wild plants, endemic species, crop wild relatives, birds and butterflies, as well as a reduction in soil fertility, degradation of water quality, desertification and salinization. A few Parties identified the causes of degradation to be the overexploitation of land and water resources, excessive recreational activities and construction work, overuse of chemicals, introduction of alien species, migration of farmers, war, lack of adequate policies, lack of awareness and climate change.

75. Parties that reported an overall restoration of agricultural biodiversity supported their responses with examples of restored natural sites, grasslands, field margins, meadows, pastures, wetlands, increases in local races and successfully reintroduced species. Successful restoration of agricultural biodiversity was believed to be due in part to national agri-environmental support, use of traditional knowledge, conservation of animal and plant genetic resources in ex-situ and in-situ conservation, and economic incentives.

76. A few Parties mentioned the development of a set of agri-environmental indicators to measure how environmental conditions within agricultural ecosystems were changing over time, and how these changes could be explained to best inform the policy discourse surrounding agri-environmental issues.

Assessment of progress of Programme Element 1

77. Overall, many countries are undertaking various assessments suggested under Programme Element 1. The number of countries having completed all these assessments is relatively small. Some useful results or findings were reported in assessments on various components of agricultural biodiversity; knowledge, innovations and practices of indigenous and local communities; and interactions between agricultural practices and the conservation and sustainable use of agricultural biodiversity.

78. Good progress was also reported in assessments on plant and animal genetic resources, however few Parties reported on assessments of microbial genetic resources and on ecosystems services provided by pollinators, pest management and nutrient cycling. Furthermore, only a few Parties reported on assessments of social and economic aspects related to agricultural biodiversity.

79. Notably many countries are monitoring changes in agricultural biodiversity over years and based on that, some countries have made assessments of status and trends of agricultural biodiversity. However, few Parties reported on the tools used for these assessments and little information was provided on indicators used for monitoring and assessing the status and trends of agricultural biodiversity.

80. Main obstacles reported by Parties in the implementation of the programme element 1 include:

(a) Lack of national programmes for assessment of components of agricultural biodiversity, especially in regard to indigenous plant animal species, microorganisms, pollinators, pest management and nutrient cycle;

(b) Lack of financial, human and technical resources;

(c) Lack of good and widely used agro-environmental indicators;

(d) Lack of economic assessments of the goods and services of agricultural biodiversity;

(e) Loss of traditional knowledge due to decrease of awareness of new generations and modernization.

(f) Lack of coordination among responsible agencies;

(g) Inadequacies in policy, legal and regulatory frameworks; and

(h) Lack of recognition of decision makers of the role and contributions of local agricultural practices in conservation of biodiversity.

Programme element 2: Adaptive management

Synthesis of responses and comments

Identification of management practices, technologies and policies that promote the positive, and mitigate the negative, impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods

81. Most Parties (71%) have identified management practices, technologies and policies that promote the positive, and mitigate the negative, impacts of agriculture on biodiversity and enhance productivity and the capacity to sustain livelihoods (operational objective). Among these countries, only 12 countries have identified comprehensive practices, technologies and policies in this regard. Eighteen countries indicated that identification is under way and 15 countries have not yet identified management practices, technologies, and policies.

82. Management practices identified by some Parties include education and communication, economic incentives, agri-environmental measures, promotion of traditional farming practices and implementation of network. Training of farmers was undertaken on Integrated Pest Management (IPM), organic farming or specific agricultural techniques. Economic incentives such as subsidies or reduction in annual lease fees were offered to farmers that use environmentally safe practices or rare landrace breeds and field crops.

83. Technologies identified by some Parties include genetic tools to improve crop varieties, a system for bio-water purification, biogas production with coconut oil or other plants, and use of a geographic information system for agricultural management. Kenya stated that subsidies were offered to the private sector to develop appropriate technologies that use renewable and sustainable energy sources (solar, wind and biogas).

84. Policies reported by some Parties were mostly related to plant and animal genetic resources, good agricultural practices, use of agrochemicals and manure, irrigation, and the distribution and use of genetically modified organisms. A few member countries of the European Union had implemented the EU regulation on agro-environmental measures.

Assessment of progress of Programme Element 2

85. Some progress is observed on the identification of management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on biodiversity. However, comments provided by Parties did not cover all activities of adaptive management because only one question was asked on this programme element, giving only a scattered overview of activities undertaken by Parties. For example, very few activities were reported on identifying key goods and

services provided by agricultural biodiversity and monitoring and assessing the actual and potential impacts of existing and new agricultural technologies. Moreover, few Parties reported on the dissemination of information on cost-effective practices and technologies, indicating a gap in these areas.

86. Main obstacles reported by Parties in the implementation of the programme element 2 include:

(a) Lack of technical, financial and human resources;

(b) Lack of programmes for diffusing management practices and technologies;

(c) Slow progress in implementation of policies; and

(d) Factors such as climatic changes which restrained identification of management practices, technologies and policies.

Programme element 3: Capacity-building

Synthesis of responses and comments

Increasing the capacity of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable agricultural biodiversity and to develop strategies and methodologies for in-situ conservation, sustainable use and management of agricultural biological diversity

87. Most Parties (71%) reported that the capacity of indigenous and local communities to develop strategies and methodologies for *in situ* conservation, sustainable use and management of agricultural biological diversity had been enhanced (Activity 3.2).

88. Many Parties cited agricultural biodiversity management (animal and plant genetic resources, water, land, vegetation), conversion to organic farming, public awareness, and agro-forestry and traditional practices, as examples of areas or components with increased capacity. Moreover, many countries also indicated that the capacities of target groups, such as crop and livestock farmers, indigenous and local communities, farmers' organizations, rural women, farming technicians, relevant stakeholders and food industries had been strengthened.

89. Specific strategies and methodologies developed by some Parties were related to training, promotion and diffusion activities, implementation of policies and economic incentives. Examples of training topics included organic farming practices, IPM and integrated crop management (ICR), agricultural management, application of new technologies, use of traditional knowledge for *in situ* conservation, women's role in relation to *in situ* conservation and use of geographic information system (GIS). Activities undertaken to promote and disseminate information include the publication of books, newsletters, leaflets and scientific papers, media campaigns, creation of farmers' associations and networks.

90. A few Parties also reported on the success of specific capacity-building activities. Mexico highlighted implementation of Article 8(j) through increased participation of indigenous communities in regional workshops on biodiversity. Ethiopia cited the successful training of 3,883 farmers on the conservation of plant genetic resources, of which 16% of trainees were women. The United Kingdom, which offers payments to farmers for environmental management and conservation and enhancement of

biodiversity, indicated that 10% of farmed land is managed under this scheme and that it aims to cover 60% of farmed land by 2007.

Operational mechanisms for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity

91. Some Parties (33%) reported that operational mechanisms were in place for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity (operational objective). Sixteen percent of reporting countries are developing such mechanisms and 21% are identifying such mechanisms. Twenty-nine percent of reporting countries had not done so yet.

Improving the policy environment, including benefit-sharing arrangements and incentive measures, to support local-level management of agricultural biodiversity

92. Less than one third of reporting Parties (29%) reported they had improved the policy environment, including benefit-sharing arrangements and incentive measures, to support local-level management of agricultural biodiversity (Activity 3.4). Fifteen percent are developing relevant measures and arrangements and 26% identifying such measures. Thirty percent said that no such measures had been identified or developed.

93. Measures and arrangements for improving the policy environment include conservation of plant and animal genetic resources, indigenous peoples' right, agro-forestry, management agreements to sustain grassland birds, conservation of small-scale landscape elements, environmentally-favourable extensification of farming, management of low-intensity pasture systems, integrated farm management and organic agriculture, preservation of landscape and historical features such as hedgerows, ditches and woods, and conservation of high-value habitats and their associated biodiversity.

94. A small number of Parties established access to benefit-sharing activities and provided economic incentives to farmers to support local-level management of agricultural biodiversity. Economic incentives were provided to farmers for conservation and cultivation of fruits and medicinal plants, conservation of soil, planting or enhancing native buffer strips, establishment of improved grazing systems and wildlife shelterbelt, and for conversion of environmentally-sensitive land to perennial cover. Australia indicated using the Bonn Guidelines on access to genetic resources and benefit-sharing.

Assessment of progress of Programme Element 3

95. Some progress was observed in capacity-building activities, particularly in increasing the capacities of farmers, indigenous and local communities and their organizations and other stakeholders to sustainably manage agricultural biodiversity and to develop strategies and methodologies for *in-situ* conservation, sustainable use and management of agricultural biological diversity.

96. However, improving the policy environment to support local-level management of agricultural biodiversity was not well implemented. One major obstacle to improving the policy environment is the difficulty in implementing benefit-sharing arrangements. Very few Parties reported on access to benefit-sharing and economic incentives.

97. Main obstacles reported by Parties in the implementation of the programme element 3 include:

(a) Lack of adequate financial resources;

(b) Lack of an effective national regime on access and benefit-sharing;

(c) Slow progress in implementing policies;

(d) Difficulties in integrating policies across different sectors;

(e) Inadequacies in policy, legal and regulatory frameworks; and

(f) Illegal cropping.

Programme element 4: Mainstreaming

Synthesis of responses and comments

Mainstreaming or integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes

98. Many Parties (59%) reported having mainstreamed or integrated national plans or strategies for the conservation and sustainable use of agricultural biodiversity into relevant sectoral and cross-sectoral plans and programmes (operational objective). Twenty-one countries are identifying potential frameworks and mechanisms. Eleven countries are reviewing relevant plans and programmes and 16 countries have not done so yet.

99. Many Parties cited specific sectoral and cross-sectoral plans and programmes addressing, for example, rural development and poverty reduction, desertification, protected areas, fresh and marine water, science and technology, sport and tourism, soil conservation and air and atmosphere. National plans and strategies for conservation and have been mainstreamed or integrated into some broader strategies and plans, including environmental strategy, sustainable development strategy, and rural and agricultural development plan.

Supporting the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans, and its Most Parties

100. (80%) reported that they had supported the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans, and its integration into wider strategies and action plans for biodiversity (Activity 4.1).

101. Fifty-three countries reported supporting institutions in undertaking relevant assessments, such as agricultural research stations, agricultural college, universities and the private sector.

102. Forty-eight countries also reported developing policy and plans, including those on rural development, organic farming and IPM, conservation and management of animal genetic resources, plant genetic resources and medicinal plants, as well as guidelines on bioprospecting and management of agrochemicals.

103. Twenty-seven countries have developed training materials for the conservation and sustainable use of plant and animal genetic resources, medicinal plants and pollinators, organic farming and IPM, and for appropriate animal keeping.

104. Thirty-five countries reported on capacity-building at policy, technical and local levels, including by discussion groups and networks on plant and animal genetic resources, promotion of specific products or policy by the media, as well as the development of technical tools.

105. Thirty-nine countries reported on the promotion of synergy in the implementation of agreed plans of action and between ongoing assessments and intergovernmental processes. Examples include establishment of interdepartmental and intergovernmental committee on agricultural health and food safety or agri-environmental measures, collaboration between governments, research stations, local public authorities, farmers, stakeholders and the private sector, and synergy between industry and community organizations through information networks.

106. A few Parties (12%) also reported an increase in awareness of farmers and citizens following implementation of relevant policies or networks, as well as an increase in collaboration with the private sector, productivity and food security, and technical tools.

Promoting activities for the conservation, on farm, in-situ, and ex-situ, of the variability of genetic resources for food and agriculture, including their wild relatives

107. Most Parties (72%) reported having promoted activities for the conservation, on farm, *in-situ*, and *ex-situ*, in particular in the centres of origin, of the variability of genetic resources for food and agriculture, including their wild relatives.

108. Many Parties reported implementing activities on *ex-situ* conservation through establishment of gene and seed banks, germplasm collection and documentation and evaluation of genetic resources. A number of Parties reported participation in the Millennium Seed Project (and Nordic Gene Bank. Cooperation was reported in some industrialized countries, especially among the Northern European countries, with participation in the Genebank Committee of the European Association for Research in Plant Breeding (EUCARPIA) and in the European Cooperative Programme for Crop Genetic Resources Networks (ECP/GR).

109. A considerable number of Parties reported activities in *in-situ* conservation, including on-farm conservation (wild rice, wild wheat, fruit, wild coffee, millet, peas, sorghum, tea, medicinal plant, wild crop relatives, chicken, cattle, horse, sheep) and in protected areas. A few countries said that conservation of wild habitats and ecosystems has been effective in conserving wild crop relatives and fruit trees. A few Parties also reported that farmers had been able to secure financial support for the maintenance of rare plant and animal varieties with high cultural and genetic importance.

110. A few Parties also reported on awareness-raising activities for the *ex-situ* and *in-situ* conservation of variability of genetic resources for food and agriculture, which included the creation of networks, catalogues of old crop varieties, publication of a booklet and the conduct of a national contest on the quality of agricultural products, livestock and pets.

111. Progress is observed in the mainstreaming or integration of national plans or strategies for the conservation and sustainable use of agricultural biodiversity into relevant sectoral and cross-sectoral plans and programmes. However few activities were carried out to support the development or adaptation of relevant systems of information, early warning and communication to enable effective assessment of the state of agricultural biodiversity and threats to it, in support of national strategies and action plans, and to promote public awareness of the goods and services provided by agricultural biodiversity, and the value and importance of such diversity for agriculture and for society in general.

112. Progress is observed in establishing the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans. However, few activities were carried out within countries to improve consultation, coordination, and information-sharing among focal points, lead institutions, relevant technical committees and coordinating bodies.

113. Progress is also observed in the promotion of activities for *in-situ* and *ex-situ* conservation of the variability of genetic resources, however, little information was provided on wild relative species and species of centres of origin.

114. Main obstacles reported by Parties in the implementation of the programme element 4 include:

(a) lack of coordination amongst relevant sectors;

(b) lack of synergy between legislation on plant protection , seeds legislation and legislation on genetically modified organisms;

(c) lack of a long-term vision within government agencies;

(d) lack of adequate financial resources; and

(e) market demands, which hinder ex-situ conservation.

Synthesis and analysis of other content in the third national report related to the Programme of Work

National Strategies

Development of national strategies, programmes and plans that ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components

115. Most Parties (76%) have developed national strategies, programmes and plans, including national biodiversity strategies and action plans (NBSAPs), which ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components. Among these countries, only 19 countries have developed comprehensive strategies, programmes and plans. Twenty-two countries are developing such strategies, programmes and plans. Only a few countries have not done so yet.

116. Many Parties have implemented national strategies related to assessments, conservation and protection of agrobiodiversity, establishment of a national database, environmental research station or national gene bank, control and regulation of genetic engineering and microbial activities, rural and agricultural development, and biosafety management.

117. Many countries have also implemented programmes to conserve animals and plants. These programmes relate to management, breeding and benefit-sharing of genetic resources, reintroduction of local varieties, public awareness, combating desertification, integrated pest management, organic farming and poverty reduction. Australia reported success with its national programme which stimulated the adoption of better farming practices, with approximately 70% of participating farmers reporting an improvement in the condition of their resources. On-farm and off-farm physical benefits have been observed following implementation of these practices, including reduced soil erosion and improved water quality in streams.

118. A considerable number of Parties have implemented plans to ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components. These plans relate to rural development, farm genetic resources, organic farming, management of watersheds and public education.

Genetic Use Restriction Technologies (GURTS)

Identification of ways and means to address the potential impacts of genetic use restriction technologies on the In-situ and ex-situ conservation and sustainable use, including food security, or agricultural biological diversity

119. Some Parties (28%) reported that they had identified ways and means to address the potential impacts of GURTS on the *in-situ* and *ex-situ* conservation and sustainable use, including food security, of agricultural biodiversity. Thirty-two countries are identifying such ways and means and 49 countries have not done so yet.

120. Some Parties reported ways and means to address the potential impacts of GURTS, including development of relevant laws and policies, establishment of Biosafety committee, establishment of facilities for research on GURTS and implementation of environmental impact assessment. Examples of legal and policy frameworks in this regard include regulations on GURTS-related research, the release of GURTS into the field in pilot studies or for commercial use, and on export or import of GURTS.

121. A few Parties reported on potential impacts of GURTS and on their country position on use of genetically modified organisms (GMOs). These Parties considered GURTS as GMOs, with high risks for human health and the environment. Furthermore GMOs and GURTS are not allowed in a few countries citing their potential impacts on health and the environment.

Pollinators

122. A bit over one third of Parties reported that some actions had been undertaken to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.

123. Actions undertaken included monitoring of the status and trends of pollinators, identification of causes of negative impacts on pollinators (vegetation loss, bee illness, pesticides), conservation activities, identification of management tools that could reduce negative impacts on pollinators (reduction of chemicals, introduction of bee species, use of movable frame hive technology, 'bee safe' label on pesticides), and assessment of goods and services of pollinators.

124. A few Parties have integrated conservation of pollinators into their NBSAPs, undertaken international collaboration and promoted awareness projects on pollinators. For example, Canada is undertaking discussion with the United States and Mexico on the conservation of pollinators in North America, and there are discussions within Canada about the formation of a network for the conservation of pollinators led by academic associations. Awareness-raising projects in the form of training and promotion of beekeeping and best management practices to benefit pollinators have been undertaken. In Ethiopia, 873 extension staff and over 50,000 farmers have been offered training to increase their knowledge in beekeeping, and develop skills to improve bee culture and increase the production of honey and beeswax.

125. Main obstacles reported by Parties in the implementation of the Plan of Action include:

(a) Lack of adequate financial and technical resources;

(b) Lack of coordinated monitoring of status and trends of pollinators;

(c) Lack of long-term vision within government agencies; and

(d) Lack of awareness of the goods and services of pollinators.

Overall assessment of progress and challenges for the implementation of the whole programme of work

126. Some progress was observed in all programme elements of the programme of work, particularly in the assessments of different components of agrobiodiversity and in mainstreaming. However, only a small number of Parties indicated that assessments had been completed, comprehensive practices identified or strategies put in place.

127. Capacity-building activities were less widely implemented. Enhancement of capacity-building activities is required, particularly on:

(a) Putting in place operational mechanisms for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity; and

(b) Improving the policy environment, particularly benefit-sharing arrangements and incentive measures.

128. Many countries reported that the successful implementation of some activities of the programme of work on agricultural biodiversity was made possible through the implementation of national programmes, laws and policies, through cooperation between farmers and government, natural museums, industries, research institutions, non-governmental organizations (NGOs), and extension officers and through the cooperation and financial support of relevant international organizations, such as the Food and Agriculture Organization (FAO), the Consultative Group on International Agricultural Research (CGIAR), the United Nations Program for Development (UNDP), the Organization for Economic Cooperation and Development (OECD), the International Development Research Center (IDRC), the German Agency for Technical Cooperation (GTZ), the World Bank and the Global Environmental Facility (GEF).

129. The most commonly identified constraints include lack of adequate financial resources, poor collaboration and knowledge-sharing, and lack of political will to implement the programme of work. Other constraints include:

(a) Lack of adequate monitoring and assessments (lack of national programme, economic assessment of the goods and services, good and widely-used agro-environmental indicators, coordinated monitoring of status and trends of agricultural biodiversity);

(b) Capacity constraints (lack of institutional and technical capacity, inadequacies in policy, legal and regulatory frameworks, lack of coordination amongst responsible agencies);

(c) Inadequate mainstreaming (lack of synergy within legislation, lack of long-term vision, slow progress in implementation of policies, difficulties in integrating policies across different sectors); and

(d) Other constraints (illegal cropping, absence of an effective national regime on access and benefit-sharing in conservation, lack of incentives for stakeholders, limited access to environmentally-

sound technology, difficulties in transfer of technology, experience and knowledge, lack of consideration of traditional knowledge).

FOREST BIODIVERSITY

Introduction

130. The sixth meeting of the Conference of the Parties, in its decision VI/22, adopted the expanded programme of work on forest biological diversity, which builds on a work programme adopted at the fourth meeting of the Conference of the Parties. The expanded work programme constitutes a broad set of goals, objectives and activities aimed at achieving the three objectives of the Convention. Specifically it consists of three programme elements. The first covers largely biophysical aspects that corresponds with three objectives of the Convention, such as the reduction of threats to forest biodiversity through restoration, agroforestry, watershed management, the establishment of protected areas and the application of the ecosystem approach. The second element deals with the institutional and socio-economic environment. The third element covers assessment and monitoring, to improve assessment, knowledge on methods and infrastructure.

131. The questions included in the third national report on the expanded work programme were formulated as suggested by the expert group on review of implementation of the expanded programme of work and covered only key goals and objectives under each programme element due to the limited size of the report.

132. The synthesis below will follow the structure of the questionnaire in the third national report, namely general issues and programme elements. In addition to synthesizing the information concerning implementation of each programme element, there will be a brief, overall assessment of implementation of each programme element. This will contribute to an overall assessment of the whole programme of work at the end of this synthesis.

Synthesis of responses and comments

General Issues

Incorporation of the work programme into NBSAPs and national forest programme:

133. The majority of the Parties reported that they had incorporated relevant elements, objectives and activities of the work programme into their NBSAPs and national forest programmes (NFP). The elements of the programme of work on forest biological diversity most frequently referred to include:

(a) The integration of the Ecosystem Approach (or some of its aspects or principles) into NBSAPs or NFPs (corresponding to Goal 1 of Programme Element 1);

(b) The protection and restoration of forest areas (corresponding to Goal 3 of Programme Element 1);

(c) The establishment or improvement of monitoring activities (corresponding to Objective 4 of Goal 4, Programme Element 1);

(d) Raising awareness of the importance of forest genetic resources (corresponding to Goal 5 of Programme Element 1); and

(e) Mainstreaming relevant elements of the forest programme of work into relevant national and regional plans (corresponding to Objective 2 of Goal 1, Programme Element 2).

134. Other general issues covered in the third national report, such as capacity building, participation of local and indigenous communities and tools for implementing and assessing the work programme, are also covered in relevant programme elements. Therefore relevant detailed information, if any, can be found in the synthesis below.

Programme Element 1 Conservation, sustainable use and benefit-sharing

Synthesis of responses and comments

Goal 1: To apply the ecosystem approach to the management of all types of forests

135. Close to half of the Parties indicated that they are applying the ecosystem approach to manage all types of forests. Thirty-five percent of reporting countries said that they are identifying potential measures for applying the ecosystem approach. Eighteen countries have not started the application of the ecosystem approach. A few Parties reported that applying the ecosystem approach was incorporated into the frameworks of obtaining forest certificates, such as those provided by the Forest Stewardship Council and the Pan European Forest Council. Some countries provided detailed information on the application of the ecosystem approach, ranging from experience in integrating the ecosystem approach into relevant national and local policies and strategies to scientific findings related to habitats.

Goal 2: To reduce the threats and mitigate the impacts of threatening process on forest biological diversity:

136. Nearly all countries (90%) have identified major threats. Main threats identified by some countries include invasive alien species, pollution, land use change and fragmentation, climate change, deforestation, forest fires, urbanization and population pressure. Many countries have taken various measures to achieve this goal. To deal with threats from alien species, some countries have developed relevant programmes and mechanisms. For example, Canada has developed a national strategy to address alien species, a key threat to health of Canadian forest ecosystems. This national strategy has identified four strategic goals, namely prevention, early detection, rapid response and eradication, containment and control. It also outlines roles and responsibilities, implementing strategies and criteria associated with each of these goals. Some countries highlighted various measures taken to prevent and mitigate the adverse effects of forest fires and fire suppression, including developing effective legal and policy frameworks. A number of countries indicated that fire prevention had been integrated into their biodiversity action plans which include specific measures for combating forest fires. Some countries, in particular countries from Africa and the Central and Eastern Europe, reported on various measures taken to address land use change and fragmentation which are driven by agricultural expansion, use of fuel wood, and lack of awareness. These measures include creating private reserves or community forests, increasing public awareness and education, strengthening institutional capacities and implementing good forest management practices such as leaving dead trees in forest stands. A few countries also mentioned about measures taken to abate impacts of various pollutants, including toxic substances, on forests, but few countries described specific measures to address threats from climate change. A number of countries indicated that their NBSAPs or equivalent instruments had contained objectives and actions to address threats to forest biodiversity or those processes or activities that have negative impacts on forest ecosystems.

Goal 3: To protect, recover and restore forest biological diversity:

137. Nearly all Parties (94%) indicated that they had taken measures to protect, recover and restore forest biological diversity. One measure taken by many countries is the establishment of adequate protected forest area networks. A few countries, in particular those from Western Europe, reported on projects implemented to establish such networks, as a part of their efforts to implement relevant regional directives such as the EU Habitat Directive and Birds Directive, and to establish the NATURA 2000 networks. Other major measures include afforestation, reforestation, and reintroduction. Some countries indicated that these measures had been integrated into their relevant strategies, plans, programmes and laws, including NBSAPs, sustainable forest management plan and the forest code of conduct. In accordance with some reports, the ecosystem approach was also employed in relevant restoration activities, in particular in watershed management and restoration of agricultural lands. A considerable number of countries reported on specific projects for restoration. Some countries also mentioned measures to address threats from alien species, chemicals and environmental pollution.

Goal 4: To promote the sustainable use of forest biological diversity:

138. Most Parties (88%) indicated that they had undertaken measures for promoting the sustainable use of forest biological diversity. Many countries mentioned that the concept of sustainable use had been incorporated in relevant laws, policies and codes of conduct of relevant sectors. Some countries cited eco-tourism or sustainable tourism as a good example of sustainable use of forest biodiversity. Some countries mentioned both market and policy-based mechanisms for promoting the sustainable use of forest resources. On the market-based mechanisms, including some incentives, a few countries reported on the positive role of forest certification, in particular in relation to state-owned forests. On the policy-based mechanisms, some countries indicated that they had developed related laws and regulations, primarily for curbing illegal activities and ensuring measures in place for sustainable use, such as the Environment Protection Act, Hunting Law and Logging Regulation. A few countries also said that sustainable forest programmes contributed to mainstreaming the sustainable use of forest resources. On objective 1 (Promote sustainable use of forest resources to enhance the conservation of forest biodiversity), one main measure taken by some Parties is the establishment of protected areas. On objective 2 (Prevent losses caused by unsustainable harvesting of timber and non-timber forest resources), a number of countries had adopted licensing or permit systems for using or harvesting forest resources. In the meanwhile a few countries noted that illegal activities were one main obstacle to implementation. A few countries indicated that they had put in place a monitoring system to prevent unsustainable use.

Goal 5: Access and benefit-sharing of forest genetic resources:

139. Fifty-seven percent of reporting countries indicated that they had implemented measures relating to access and benefit sharing (ABS) of forest genetic resources, however, little additional information was provided to support these responses. Activities implemented by some countries have focused on *ex-situ* conservation and establishment of gene banks and collections. A few countries also indicated that they were reviewing the established policy frameworks to see how ABS could be integrated to forest biodiversity conservation and sustainable use. A few countries had developed policy or legal frameworks to address *ex-situ* conservation and ABS-related issues. Some countries were using the Bonn Guidelines while examining and developing their relevant legal and policy frameworks. A number of developing countries indicated that they were taking measures to prevent and control bio-piracy and ensure equitable use of forest genetic resources. Zimbabwe reported that benefit-sharing mechanism helped create employment opportunities and increase ownership of forest genetic resources, thus

promoting the sustainable use of forest biodiversity. In Kenya, the ABS scheme for forest resources is promoting gender-based development.

Overall assessment of implementation of Programme Element 1

140. Goal 1 may be the least implemented amongst all the goals, however, it is encouraging to note that the ecosystem approach is being applied in many countries, and mainstreamed by some countries into their NBSAPs and relevant sectoral plans and strategies.

141. Goal 2 may be the one where some obvious progress is observed. Overall, many countries have taken various measures to address main threats to forest biodiversity. These measures include those taken to prevent and mitigate the adverse effects of forest fires and fire suppression, losses due to fragmentation and conversion to other land uses as well as threats from invasive alien species to forest biodiversity. However, mitigation of impacts of climate change on forest biodiversity was given a low priority. Main obstacles identified by many countries include high costs of monitoring and satellite systems, domestic land tenure systems, pressure to expand agricultural land, illegal logging, overgrazing, inadequate institutions or technologies, financial and institutional barriers such as political will, lack of resources and awareness.

142. It appears that Goal 3 may be the most widely implemented of the entire expanded programme of work. Among the three objectives under this goal, restoration activities are widely implemented in many countries, however, few activities were carried out for promoting forest management practices that further enhance the conservation of forest biological diversity. Main obstacles include difficulty in implementing measures with private forest owners due to their limitations in resources or socio-economic circumstances, lack of assessments, especially relating to endangered species, and political pressure**.**

143. After Goal 3, Goal 4 may be the second best implemented of the whole work programme with many countries reporting having developed measures for promoting sustainable use and put in place both market and policy-based mechanisms for implementation. As this goal has 4 objectives and 26 activities there was variation in the level of implementation of different activities but the majority of comments covered activities related to the sustainable use of forest resources and the prevention of losses caused by unsustainable use. Major obstacles include lack of capacities, policy or law enforcement and the changing dynamics of local communities, which is a major constraint to the implementation of community-led sustainable forest management.

144. Limited progress is made in the implementation of Goal 5. Main obstacles include unclear forest ownership and tenure systems, lack of legal and policy frameworks and market mechanisms such as certification system, low-level awareness of local communities and unclear definition of traditional knowledge of local and indigenous communities.

Programme Element 2: Institutional and socio-economic enabling environment

Synthesis of responses and comments

Goal 1: Enhance the institutional enabling environment

145. Eighty-two percent of reporting Parties indicated that they had implemented measures to enhance the institutional enabling environment for the conservation and sustainable use of forest biological diversity. On Objective 1 (Improve the understanding of various causes of forest biodiversity losses), a few countries indicated that they had established institutions to research the causes of forest biodiversity

losses. On integrating conservation and sustainable use into forest and other sector policies (Objective 2), many countries listed relevant policies, laws, plans and programmes for conservation and sustainable use of forest biodiversity, including NBSAPs, sustainable forest management programmes, and forest code or guidelines. Integration into other sectors is occurring in many countries, in particular in those sectors related to forest biodiversity, such as tourism, agriculture and rural development. On development of good governance (Objective 3), some countries indicated that relevant processes were ongoing to strengthen governance and law enforcement. Some developed countries mentioned about collaborations among federal, provincial, local governments and indigenous communities. A number of countries and regions reported on some activities undertaken to strengthen forest law enforcement. For example, the EU has developed an Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT). Many developing countries focused on capacity building for officers and institutions to regulate bioprospecting, and measures to discourage illegal use of biological resources. In developing policy and legal frameworks, some countries used indicators and programmes developed by some international organizations such as the International Tropical Timber Organization (ITTO). A few countries indicated that taxation laws had been introduced to promote forest law enforcement and the cross-sectoral approach.

Goal 2: Address socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity

146. Many countries (67%) said that they are taking measures to address the socio-economic failures and distortions leading to decisions that result in loss of forest biological diversity, however little additional information was provided. Among measures taken by some countries, raising awareness was frequently mentioned. A considerable number of Parties implemented awareness activities, aimed at officials and local residents, to foster a deeper understanding of economic incentive measures, clarification of the linkages between agricultural activities and forest biological diversity; and family planning to ease population pressure on forest resources.

147. To alleviate the pressures on forested land, some countries, both developing and developed, had developed various measures such as developing reforestation programmes on farmland or supplying subsidies to agricultural organizations that discourage further forest conversion. Some countries had put in place a fee system for timber use and non-timber forest products.

148. Some countries indicated that they had introduced certification systems to address socio-economic failures as they incorporate environmental costs into the market price of forest products in order to ensure that forest resources are sustainably used or managed.

Goal 3: Increase public education, participation, and awareness

149. Most countries (89%) reported that they had been implementing activities to increase public education, participation and awareness. The targeted audiences were mixed, ranging from the general public to practicing resource managers and policy makers. First, Parties have implemented a number of awareness-raising activities on forest biological diversity and general environmental issues through different modalities and media. There are face-to-face activities organized by museums, forest schools, and workshops or awards for the best forest management. Some Parties held competition-style events, such as a competition of general environmental knowledge. A number of Parties organized their activities on important biodiversity-related dates, i.e. the International Biodiversity Day, Mountain Day (Nepal), Bird-Loving Week (China), Flora and Fauna Day (Indonesia), National Tree Week (Ireland**)** and National Arbor Day (Japan). The public is invited to participate in tree planting and other forest management activities on these dates. Secondly, technology-related activities were also implemented,

including various nursery practices, ecotourism, and deepening the understanding between fisheries and forestry. The third major group of activities concern training for policy makers.

Overall assessment of implementation of Programme Element 2

150. For the implementation of Goal 1, the expanded programme of work on forest biodiversity has been effective in promoting activities in two main areas: the establishment of scientific programmes and institutions, and the strengthening of forest law enforcement.

151. The major obstacles identified to implementation of Goal 1 include the limited application of the cross-sectoral approach or the ecosystem approach to forest management; lack of institutional communications across different governmental and regional organizations; and lack of available resources, mostly for developing countries. Other important constraints include inadequate capacities to identify the underlying causes of forest biological diversity losses, and lack of effective implementation of relevant policies and legal frameworks.

152. For Goal 2, main achievements for many Parties lie in the establishment of some incentive measures including taxation system and forest certification systems, and undertaking awareness-raising activities. Main obstacles for implementing Goal 2 include the difficulty of developing methodologies to assess the economic values of forest biological diversity, lack of incorporating ecosystem services in taxes, policy development and conservation activities, illegal trade in wildlife and poverty in local communities.

153. After Goals 3 and 4 of Programme Element 1, Goal 3 of Programme Element 2 may be one of the most widely implemented. Many countries have undertaken various activities or measures to increase public awareness and education for conservation and sustainable use of forest biodiversity. One main obstacle is inadequate resources available for undertaking these activities.

Programme Element 3: Knowledge, assessment and monitoring

Synthesis of responses and comments

Goal 1: To characterize and to analyze from forest ecosystem to global scale and develop general classification of forests on various scales in order to improve the assessment of status and trends of forest biological diversity

154. Most countries (74%) reported that they had undertaken some activities to characterize forest ecosystems and to develop a general classification of forests on various scales. Detailed comments in this regard were largely focused on scientific assessments undertaken at national level. A few countries referred to assessments undertaken at international level, such as the Forest Resources Assessment (FRA) carried out by the FAO. The assessments and classifications have been conducted at ecosystem, species and genetic levels. The ecosystem, habitat or forest stand level assessments are largely based on existing sources of information. For ecosystem and species-level assessments, both Geographic Information System (GIS) and ground base data are used as main methods for collecting and analyzing information. Several Parties reported on the digitalization of their assessment data. In addition to these assessments and classifications, a few Parties have developed their own set of national criteria and indicators and are evaluating their monitoring techniques of forest ecosystems. In many countries, assessments are usually conducted as a part of work to establish national forest inventories and mainly monitor growing stock and changes. In addition, some countries managed and disseminated relevant information and data through

their national CHM and used them for public educational purposes. A few countries also mentioned training of staff and experts in the field and development and improvement of relevant databases.

Goal 2: Improve knowledge on and methods for the assessment of the status and trends of forest biological diversity, based on available information

155. Most Parties (81%) implemented measures to improve knowledge on and methods for assessment. Most comments were general in nature and related to other goals in Programme Element 3. Many Parties made some progress in the development of national criteria and indicators. Furthermore, there is a trend towards the harmonization and development of indicators and criteria at the regional level, especially in Western Europe and in the Central and Eastern Europe. Two most frequently mentioned processes in this regard, which provide the frameworks for the development of national criteria and indicators, have been the Ministerial Conference on the Protection of Forests in Europe (MCPEF) and The Montreal Process. A few Parties have developed their national frameworks in collaboration with some international institutions or organizations in this field, such as the Centre for International Forestry Research (CIFOR) and the International Tropical Timber Organization (ITTO). Finland also underlined the contribution of the development process of the criteria and indicators to awareness-raising and capacity building, by building national consensus concerning the concept and content of sustainable forest management.

156. A few Parties discussed the development of experimental indicators for forest biological diversity and forest ecosystems. Other Parties undertook scientific studies, including geographical studies, genetic resource analysis, species quantification, and taxonomic studies to identify indicators for forest biological diversity. Some criteria and indicators identified are condition and productivity of biodiversity, ecosystems, soil and water, carbon sequestration, role of forests in global ecological cycles, and their economic and social benefits.

Goal 3: Improve understanding of the role of forest biodiversity and ecosystem functioning

157. Most Parties (83%) indicated that they are undertaking measures to improve their understanding of the role of forest biodiversity and ecosystem functioning. The comments provided focused on international cooperation, the establishment of institutions at national level, and awareness-raising activities. With regards to this goal three areas of achievements are particularly visible. First, many research activities have been conducted at national level. Second, many countries have been undertaking bilateral and multi-lateral cooperation in this field. Third, research activities are increasingly being linked to awareness-raising and outreach activities.

158. Research activities undertaken by some countries range from examinations of the general status of forest ecosystems to more specific researches on forest ecosystems and ecological functioning. Some countries listed some research topics, including critical limits of forest biodiversity degradation and its effect on forest ecosystem; endangered endemic species; habitats for key species, including forest canopy; evaluating damage to forests; changes in condition of forest soil; the relationship between external and internal factors damaging forests; and changes in forest biocoenosis and its effect on sites, habitats, and pests.

Goal 4: Improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biological diversity

159. Most Parties (71%) reported that they had implemented some measures to improve the infrastructure for data and information management. These measures include establishing a national

network of databases, involving relevant stakeholders and working with relevant international processes. Some Parties are harmonizing their national data and information management as suggested by relevant regional and international processes, such as integrating assessments of deadwood suggested by the MCPFE. Furthermore, some Parties are developing their own indicators for assessments, such as those for biodiversity conservation, ecological stability and the status of regeneration.

160. Canada has developed the Canadian Biodiversity Information Network or CBIN, which serves as an open-ended resource for users. The participatory or interactive design of this database improves the infrastructure for data and information-sharing on forest biological diversity. In some other countries, there is an increasing trend of using these forms of interactive and participative databases.

Overall assessment of implementation of Programme Element 3

161. When asked to report on the measures undertaken to accomplish Goal 1 most Parties responded positively. However given that the implemented activities are largely based on existing national inventories and international assessments, so streamlining the flow of information seem to be the next key issue. In addition, further research is needed on the complexity of forest ecosystems.

162. Obstacles for implementing Goal 1 include lack of knowledge of forest ecosystem functions for assessments and classifications, inadequate application of the ecosystem approach, lack of streamlining of international assessments, and inadequate information dissemination.

163. Goal 2 has achieved some progress. Indicative of this is the development of national criteria and indicators for assessing the status and trends of forest biodiversity. Main difficulties lie in monitoring activities outside the boundaries of state-owned forest areas, inclusion of non-state-owned forests in sustainable management, involvement of the private sector and other forest owners, and inclusion of herbal, medicinal and aromatic plants in the assessments due to technical complexities.

164. With 83% of responding Parties indicating that they have undertaken activities related to Goal 3, it would appear that this goal has achieved some progress relative to other programme goals. Obstacles for implementing Goal 3 include **l**imited resources, integrating multi-faceted landscape elements in research activities, inadequate sharing of knowledge among related stakeholders, and lack of common criteria for understanding critical thresholds of forest biodiversity.

165. There are certain differences in the progress in implementing Goal 4 between developing countries and developed countries. Developed countries did not report on any obstacles to the implementation of Goal 4. However, for developing countries, obstacles to implementing Goal 4 include difficulties in implementing national forest inventories, and insufficient financial and human capacities for the establishment of good infrastructure.

Overall assessment of achievements and challenges for the implementation of the whole programme of work

166. From the above, it appears that some obvious progress is observed in implementing several goals of the work programme. Specifically:

(a) Goals 2, 3 and 4 of Programme Element 1 are relatively more widely implemented, with many activities undertaken to achieve these goals.

(b) Program Element 3 has progressed, with exhibiting positive trends exhibited in implementing Goals 2 & 3. While advancements have been made in implementing these goals, there is considerable variation in the implementation of different objectives associated with these goals.

167. Relatively moderate progress has been made in implementing Goals 1 and 3 of Programme Element 2 and Goal 1 of Program Element 3. Goal 1 of Program Element 2 has been effective in establishing scientific programs and institutions related to forest biological diversity as well as strengthening forest law enforcement.

168. Goals 1 and 5 of Programme Element 1, Goal 2 of Program Element 2, and Goal 4 of Program Element 3 have been relatively the least implemented.

169. Main obstacles to implementation include lack of political support, inadequate resources and lack of awareness or recognition of relevant issues. Additional constraints highlighted by some countries include:

(a) Inadequate institutional mechanisms and capacities for assessment;

(b) Weak linkages between science and legal framework;

(c) Inadequate transfer of environmentally sound technologies;

(d) Conflicts between long-term and short-term goals and interests;

(e) Inadequate forest assessment capabilities; and

(f) Difficulty in implementing measures with private forest owners due to their limitations in resources or socio-economic circumstances.

BIOLOGICAL DIVERSITY OF DRY AND SUB-HUMID LANDS

Introduction

170. At its fifth meeting, in May 2000, the Conference of the Parties adopted the programme of work on dryland, Mediterranean, arid, semi-arid, grassland, and savannah ecosystems, also referred to as programme of work on "dry and sub-humid lands", as contained in decision V/23.

171. The programme of work on biodiversity of dry and sub-humid lands is divided into two parts, 'assessments' and 'targeted actions in response to identified needs', to be implemented in parallel. Under assessments, six activities are identified, all concerning assessments in dry and sub-humid lands. Under targeted actions, three clusters of activities are identified:

- Promotion of specific measures for the conservation and sustainable use of biological diversity, through for example, use and establishment of additional protected areas, appropriate management and sustainable use of water resources, and management of invasive alien species.
- Promotion of responsible resource management, at appropriate levels, applying the ecosystem approach, through an enabling policy environment.
- Support for sustainable livelihoods, through diversifying sources of income, promotion of sustainable harvesting including of wildlife; exploring innovative sustainable use of biological diversity.

172. In the third national report Parties were asked to report on implementation of some decisions of Conference of the Parties related to the implementation of the work programme as well as some activities contained in the work programme.

Synthesis of responses and comments

Supporting scientifically, technically and financially, at the national and regional levels, the activities identified in the programme of work

173. Many (62%) Parties reported on provision of financial and technical support for implementing the activities of the work programme at various levels. The rest of countries have not yet provided such support.

174. Specific activities to support the activities of the programme of work vary from community-based natural resource management (e.g. Canada, Chile and Zimbabwe), to the establishment of expert scientific committees (e.g. China and Jordan).

175. In providing detailed comments, some Parties indicated that activities identified in the programme of work are largely implemented within the national framework of implementation of the United Nations Convention to Combat Desertification (UNCCD), in particular national programme of action to combat desertification.

Integrating actions under the programme of work of dry and sub-humid lands into its national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD

176. Sixty-five percent of responding countries have integrated dry and sub-humid lands biodiversity into their NBSAPs or national action programmes to combat desertification (NAPs). The rest have not done so yet.

177. In detailed comments, 15% of Parties reported that relevant activities are included in both NBSAPs and NAPs. Of the remaining Parties, the split is almost equal between those who integrated actions into their NBSAPs and those who have incorporated actions into their NAPs.

Measures undertaken to ensure synergistic/collaborative implementation of the programme of work between the national UNCCD process and other processes under related environmental conventions

178. Sixty-nine percent of responding Parties reported on synergistic implementation of the programme of work. Of these, only a few Parties reported that extensive measures have been taken.

179. The types of synergies implemented range from coordination on a specific project or programme (e.g. Benin and Mauritania) to regular coordination meetings between the national focal points of the CBD and the UNCCD (e.g. Cameroon and Japan). In terms of synergies with other related conventions, the United Nations Framework Convention on Climate Change (UNFCCC) is most often mentioned.

Assessment and analysis of information on the state of dryland biological diversity and the pressures on it, dissemination of existing knowledge and best practices, and filling knowledge gaps in order to determine adequate activities

180. Forty-seven percent of responding countries reported on assessments, analysis, dissemination of existing knowledge and best practices and activities to fill knowledge gaps. Of these, only a few

countries reported on comprehensive activities. An additional 11 Parties reported that assessments are ongoing. Forty-three countries indicated that no such assessments were made.

181. Parties generally reported on three types of analysis, assessment and knowledge generation and dissemination:

(i) research / studies conducted for specific projects or to develop specific products (e.g. Austrian Dry Grasslands Atlas – Austria, Millennium Ecosystem Assessment - Netherlands)

(ii) research / studies conducted within the framework of national plans or inventories (e.g. Inventories Nationaux – France, UNCCD planning and reporting – Democratic Republic of the Congo)

(iii) research / studies conducted through established research networks (e.g. Department of Agriculture information systems – South Africa, Long Term Ecological Research Network - Israel)

182. The in-depth review of implementation of Programme Part A (assessment) indicates that at national level, activity 1 (assessment of status and trends) is the most commonly implemented activity within the programme of work. However, activities 5 and 6 (compilation of benefits derived from biological diversity and best management practices) have been very poorly implemented. The in-depth review of implementation of the activities in Part A also revealed that:

(a) There are good examples of successful targeted research programmes amongst agencies such as the Consultative Group on International Agricultural Research (CGIAR) centres. Nevertheless, serious gaps remain, particularly for the assessment of status and trends, the valuation of areas of particular value, and the identification and dissemination of case-studies including consideration of traditional knowledge.

(b) Many of the actions in support of activities 5 (benefits from biodiversity) and 6 (best-management practices), in particular, approach biodiversity conservation from a multidisciplinary and cross-sector angle. However, there has been little indication that this multidisciplinary approach is being mainstreamed into multi-sector national planning.

(c) The dissemination of information in support of the implementation of Part A has taken place through: (i) the publication of reports, and (ii) participation in workshops. Capacity-building has been sporadic with most successes revealed through participation in regional and global collaborative partnerships such as, inter alia, the Mediterranean Action Plan, and the Millennium Ecosystem Assessment (MA) sub-regional assessments for Southern Africa.

Measures taken to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences

183. Fifty-nine percent reported on some measures for the implementation of Part B of the programme of work. Of the Parties reporting on relevant measures, only six countries reported on the implementation of many measures. Forty-one countries indicated that such measures had not been developed or taken.

184. Many Parties referred, in their comments, to the implementation of measures at the community level. Ghana, for example, reported on collaboration between Government agencies and civil society organizations to enhance community participation in biodiversity conservation and sustainable use in dry and sub-humid lands. Lebanon, through a five-year reforestation plan, is also engaging local communities, specifically in monitoring and evaluation.

185. Overall, an in-depth review of implementation of Programme Part B (targeted actions) shows that 70 Parties reported some activities in support of activity 7 of the programme of work while more than fifteen countries reporting on the implementation of:

- Activity 7a: protected areas management;
- Activity 7b: rehabilitation and/or restoration of degraded habitat;
- Activity 7d: sustainable management of production systems;
- Activity 7i: training, education and public awareness;
- Activity 7k: promotion of research and development programmes; and
- Activity 7m: cooperation with relevant conventions.

186. Also, many Parties reported activities in support of the implementation of activity 8 (Promotion of responsible resource management, and applying the ecosystem approach through an enabling environment) at the national level. Some Parties also reported on the implementation of Activities 8d (encouraging bilateral and subregional cooperation to address transboundary issues) and 8e (harmonizing sectoral policies and instruments).

187. Finally, more than 22 Parties indicated that they have implemented Activity 9 (support for sustainable livelihoods) at the national level, focusing on Activity 9d (developing markets for products derived from the sustainable use of biodiversity dry and subhumid lands).

Measures taken to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work

188. Many Parties (58%) reported on some measures to strengthen capacities to enhance implementation of the programme of work. Of these Parties, 11% reported on the implementation of comprehensive measures. Forty-six countries indicated that such measures had not been taken.

189. The comments submitted by Parties revealed a number of different approaches to capacity building including:

(i) training programmes (e.g. Algeria, Syrian Arab Republic and Indonesia);

(ii) field visits (e.g. Nepal);

(iii) strengthening local institutions (e.g. Jordan and Bangladesh); and

(iv) National Capacity Needs Self-assessments (e.g. Kenya, Philippines and Viet Nam)

Overall assessment of progress and challenges for the whole programme of work

190. Obvious progress is observed in implementing a number of activities in the work programme, in particular assessment of status and trends, integrating the work programme into NBSAPs and relevant sectoral strategies and plans and measures in place for capacity building.

191. The analysis of comments submitted by those country Parties that have implemented the activities of the work programme highlights the importance of:

- Strong commitment from the national Government;
- An appropriate incentive framework;
- Adequate information and knowledge;
- Involvement, whenever possible, of local and indigenous communities and relevant stakeholders;
- Provision of financial support and technical assistance to developing countries;
- Participation in partnerships and collaborative agreements; and
- Awareness of biodiversity – poverty alleviation linkages.

192. Key barriers to the full implementation of the programme of work identified by Parties include:

- Conflicts related to resource access and use rights;
- Lack of financial, human and technical resources;
- Weak institutional frameworks;
- Lack of effective partnerships;
- Perverse incentive frameworks;
- Knowledge gaps regarding biodiversity linkages with threatening processes; and
- Limited political support at all levels.

BIODIVERSITY OF MOUNTAIN ECOSYSTEMS

Introduction

193. At its seventh meeting, the Conference of the Parties adopted the programme of work on mountain ecosystems (in decision VII/27). The overall objective of the programme of work is the significant reduction of mountain biodiversity loss by 2010 at global, regional and national levels. The programme of work consists of three interlinked elements to be mutually reinforcing and cross cutting in their implementation, with specific goals and targets in three programme elements which cover direct actions, means of implementation and supporting actions for conservation, sustainable use and benefit-sharing.

194. In the third national reports, due to the size limit, questions were raised only on key goals under each programme element. The synthesis below will be organized along programme elements.

Synthesis of responses and comments

Programme element 1. Direct actions for conservation, sustainable use and benefit sharing

Measures taken to prevent and mitigate negative impacts of threats

195. Seventy-three percent of the responding countries have taken measures to prevent and mitigate the negative impacts of key threats to mountain biodiversity. Amongst key threats listed are: climate change, mining activities and/or mining speculation, deforestation and soil erosion, air pollution, tourism development, agricultural expansion and migration.

Measures taken to prevent and mitigate those threats

196. Measures reported establishment of protected areas, anti-erosion measures, reforestation, prevention systems against forest fire, sustainable management of natural resources in buffer zones around protected areas, climate change mitigation and adaptation measures, spatial planning, and legal frameworks.

Measures taken to protect, recover and restore mountain biodiversity

197. Seventy-eight percent of responding countries have taken measures to protect, recover and restore mountain biodiversity. Measures taken include: reforestation, establishment of protected areas, treatment of small watersheds, *ex-situ* conservation, restoration activities, sustainable management plans, reintroduction of species, and prohibition of illegal hunting.

Measures taken to promote sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems

198. Sixty-seven percent of responding countries have taken measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems. Measures taken include: establishment of networks of protected areas, range management schemes, promotion of indigenous species, re-introduction of species, establishment of a genetic bank, banning or regulating illegal hunting and logging, promoting local community involvement in management of protected areas and employing an ecosystem-based approach to management. A few countries have also developed strategies, programmes and projects for promoting sustainable use of mountain biological resources, such as national mountain development programme or strategy, national forestry programme and an integrated program for soil and watershed management. A few European countries mentioned about their efforts in this regard for implementing the Alpine Convention and its protocols.

Measures taken for benefit sharing and maintenance of traditional knowledge

199. Thirty-five percent of responding countries have taken measures for benefit sharing from the utilization of mountain genetic resources, including preservation and maintenance of traditional knowledge. Twenty-seven countries indicated that such measures are under development and 37 countries that no such measures had not been taken. Measures taken include: traditional medicine surveys and studies, *ex-situ* conservation, traditional knowledge inventory, policy and legal frameworks, incentives for organic farming. A number of countries have developed strategies, laws, programmes or mechanisms for sharing benefits arising from use of genetic resources, including those from mountain ecosystems, or protection of traditional knowledge associated with use of mountain genetic resources.

For example, Brazil requires that contracts be agreed for access to genetic resources and benefit-sharing from their use, including those of mountain ecosystems.

Programme element 2: Means of implementation for conservation, sustainable use and benefit-sharing

Legal, policy and institutional framework

200. Fifty-three percent of responding countries have developed legal, policy and institutional frameworks for the conservation and sustainable use of mountain biodiversity and for implementing this programme of work. From detailed comments, it seems that only a few responding countries have developed strategies, programmes or laws for conservation and sustainable use of mountain ecosystems. The majority of countries with such policy and legal frameworks in place have included mountainous areas in broader or relevant sectoral policy frameworks such as national biodiversity strategies and action plans, water, forest, soil conservation, watershed management as well as grazing and range management policies and programmes.

Regional/transboundary cooperative agreements

201. Thirty-nine percent of responding countries have been involved in regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity. Meanwhile about one fourth of reporting countries indicated that such cooperative agreements or frameworks are being considered. In terms of forms of cooperation, many countries are involved in regional cooperation. For example, many European countries are involved in collaborative activities under the Alpine Convention and the Carpathian Convention. Networks of protected areas and local communities have been established under the Alpine Convention. Many countries have also concluded bilateral agreements or put in place such collaborative mechanisms with their neighbouring countries or those countries sharing mountain ecosystems. Examples of such collaboration are many. For example, Poland has concluded many bilateral agreements with a number of its neighbouring countries to protect mountain ecosystems shared by them.

Programme element 3. Supporting actions for conservation, sustainable use and benefit-sharing

Measures taken to identify, monitor and assess mountain biodiversity

202. Sixty-two percent of responding countries have taken measures to identify, monitor and assess mountain biodiversity. Reported efforts are often part of broader initiatives to assess and monitor biodiversity at a national scale. Location-specific assessments were also reported. A few countries have made such assessments as a part of their efforts to develop flora and fauna inventories or a part of their biodiversity country studies. A few countries have established networks to monitor and assess mountain ecosystems, mostly as a part of their efforts to monitor other related ecosystems such as forests.

Measures taken to improve research, technical and scientific cooperation and capacity-building

203. Sixty-one percent of responding countries have taken measures or developed programmes to improve research, technical and scientific cooperation and capacity-building. A few Parties mentioned North-South collaboration. A few European countries reported on such collaborative activities under the framework of the Alpine Convention such as “Mountain Partnership” and those under the Carpathian Convention. Sweden mentioned about a large research programme called MountainMISTRA, which is supported by MISTRA, an environmental research funding body. Nepal and the Netherlands reported on

activities undertaken in this field by the International Centre on Integrated Mountain Development (ICIMOD).

Measures taken to develop, promote, validate and transfer technology

204. Sixty-three percent of the responding Parties have not taken any measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems. Those indicating that such measures are in place provided a few examples. A few European countries, including the European Community, mentioned the funding instrument Financial Instrument for the Environment (LIFE), which provides financial and technical support to programmes for conservation and sustainable use of mountain ecosystems. Germany reported on a number of networks established for the implementation of the Alpine Convention, which promotes exchange of information and technology transfer.

Overall assessment of achievements and challenges

205. It appears that some countries, in particular those with mountain ecosystems, have taken measures, including development of relevant strategies, policies and programmes, for conservation and sustainable use of mountain ecosystems. However, most measures taken aim not only at mountain ecosystems, but also at other relevant ecosystems such as forest and rangeland. In other words, it seems that few measures taken aim directly at conservation and sustainable use of mountain ecosystems. Notably, many countries have initiated some transboundary or regional or subregional cooperation with those countries sharing mountain ecosystems. In particular some countries sharing the same mountain ecosystems have concluded the regional conventions such as the Alpine Convention and the Carpathian Convention. Bilateral cooperation in this field is also encouraging. Overall, the implementation of the programme of work on mountain ecosystems is just starting. More strategies, policies and programmes are yet to be developed and implemented in many countries to directly address threats to mountain ecosystems.

206. Main challenges identified by many countries include:

- Institutional weakness or lack of capacity of local communities and of their participation;
- Inadequate information, policies and regulations;
- Loss of traditional knowledge and practices to address threats to mountain ecosystems;
- Lack of mainstreaming or integrated approaches;
- Lack of financial, human and technical resources and economic incentives; and
- Unsustainable use of natural resources.