

EVALUATION OF THE CARING FOR BIOLOGICAL RESOURCES SUBPROGRAMME

IMPLEMENTED DURING THE 1996-1997 BIENNIUM AND PART OF THE 1998-1999 BIENNIUM

UNITED NATIONS ENVIRONMENT PROGRAMME
EVALUATION AND OVERSIGHT UNIT

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LIST OF ABBREVIATIONS

ACTS	African Centre for Technology Studies
BDM	Biodiversity Data Management
BIN	Biodiversity Information Network
CGIAR	Consultative Group on International Agricultural Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CSD	Commission on Sustainable Development
FAO	Food and Agriculture Organization of the United Nations
GBA	Global Biodiversity Assessment
GBF	Global Biodiversity Forum
GEF	Global Environment Facility
ICGEB	International Centre for Genetic Engineering and Biotechnology
ICIMOD	International Centre for Integrated Mountain Development
ICRI	International Coral Reef Initiative
ICSU	International Council of Scientific Unions
IFF	Intergovernmental Forum on Forests
IISD	International Institute for Sustainable Development
IPF	Intergovernmental Panel on Forests
IPGRI	International Plant Genetic Resources Institute
IRB	International Register on Biosafety
IRRO	Information Resource on the Release of Organisms into the Environment
IUCN	World Conservation Union
IWC	International Whaling Commission
MIRCENs	Microbial Resources Centres
MMAP	Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals
MSDN	Microbial Strain Data Network
NASA	National Aeronautic and Space Administration
OECD	Organization for Economic Cooperation and Development

SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCOPE	Scientific Committee on Problems of the Environment of ICSU
SIDS	Small Island Developing States
STRI	Smithsonian Tropical Research Institute
UNCCD	United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification particularly in Africa
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNECLAC	United Nations Economic Commission of Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WCFSD	World Commission on Forests and Sustainable Development
WCMC	World Conservation Monitoring Centre
WHO	World Health Organization
WRI	World Resources Institute
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

1. The subprogramme on caring for biological resources subprogramme is one of the major programmes of the United Nations Environment Programme (UNEP). The subprogramme serves as a tower of strength for UNEP in mobilizing global, regional and national actions in the conservation and sustainable utilization of biological resources. During the first two decades of existence of UNEP (1972-1992), the main initiatives of the subprogramme entailed provision of assistance to Governments in protecting species and their habitats as well as the preparation of international and regional conservation strategies.
2. The United Nations Conference on Environment and Development (the Earth Summit) which was held in Rio in 1992, reaffirmed UNEP as the United Nations body mandated with the management of the global environment. Thus UNEP was charged with a number of tasks as contained in Chapter 38 of Agenda 21. The organization was further entrusted with the responsibility of promoting the implementation of Chapters 15 and 16 of Agenda 21 on biodiversity conservation and the management of biotechnology, respectively.
3. The Convention on Biological Diversity was also adopted by the Earth Summit. The objectives of the Convention relate to the conservation of biological resources, their sustainable utilization and the equitable sharing of the benefits arising from such utilization. There are similarities between the Convention and the subprogramme under review.
4. The purpose of the current evaluation is to assess the performance of the subprogramme in relation to the overall plans and priorities of UNEP. The report, therefore, presents the appropriateness of the subprogramme to UNEP priorities as well as the efficiency and effectiveness of the programme delivery. The success or failure in achieving the expected outputs, the constraints and lessons learnt are also reviewed in the report. Specific recommendations on how to improve and strengthen biodiversity activities are also suggested.
5. The evaluation involved a scrutiny of various documents as well as the holding of interviews with the relevant programme officers.
6. The subprogramme proposed to support, *inter alia*, the preparation of country studies on the status of biodiversity, the implementation of the forest principles of the United Nations Conference on Environment and Development, the *in situ* and *ex situ* conservation of biodiversity, the strengthening of national capacities and coral reef initiatives, the provision of assistance in the management of wetlands and the establishment of an international register of genetically engineered organisms.
7. The subprogramme consisted of seven subprogramme elements: development of policy instruments, support to subregional programmes, preparation of strategies for protection and sustainable use of marine and freshwater living resources, institutional servicing, promotion of targeted research on biological diversity issues and mobilization of resources from the Global Environment Facility (GEF), support for the implementation of forest principles and promotion of targeted research in critical environmental areas. Numerous activities were undertaken in support of the implementation of various subprogramme elements such as, workshops, conferences, revision of action plans and mobilization of resources from GEF.

8. Outputs generated by the subprogramme included reports, policy documents, publications, databases and guidelines. The outputs were widely distributed to Governments, United Nations bodies and international organizations, among others. The outputs have markedly influenced the policies of Governments, with respect to the conservation and utilization of biological diversity, the integration of environmental concerns in socio-economic policies, the adoption of international and regional conventions and the conservation and sharing of transboundary resources.

9. Some of the most outstanding areas of activity undertaken by the subprogramme were the establishment of the Convention on Biological Diversity, biotechnology and biosafety, capacity-building and coral reef initiatives. The subprogramme steered the formulation and the subsequent establishment of the secretariat of the Convention on Biological Diversity as well as providing technical support to it. Biotechnology and biosafety involved the dissemination of information and offering of training in biotechnology safety as well as the development of technical guidelines on biosafety. The subprogramme was also instrumental in the procurement of resources from GEF to support the Convention on Biological Diversity country Parties for the pilot biosafety-enabling project. The negotiations on a biosafety protocol were launched in 1997.

10. The subprogramme supported the organization of 32 expert group meetings, 100 workshops, seminars and related meetings and three training courses. A considerable amount of resources was spent on capacity-building, a cross cutting issue. It can be concluded that the subprogramme has had an impact on the conservation of biological resources, by strengthening local expertise and their institutions particularly in developing countries.

11. For the effective implementation of this multisectoral and multidisciplinary subprogramme, linkages were established with several units within the UNEP structure, notably the Water Branch, Law Unit, Desertification Control/Programme Activity Centre as well as the regional offices. Various projects were implemented jointly with these units as well as with United Nations agencies, Governments, international institutions and non-governmental organizations.

12. In view of the overall reduction in the Environment Fund, during the 1996-1997 biennium, the subprogramme received 35 per cent less of the resources initially allocated to it by the UNEP Governing Council, so additional resources had to be sought from extra-budgetary sources. In the current biennium, the biodiversity programme received 20 per cent less of the resources initially allocated to it by the UNEP Governing Council. From available information it is clear that most of the projects were implemented on time and satisfactorily with the exception of two which have been discussed in some detail in the report. The subprogramme received cooperation in the implementation of the activities from the United Nations system, Governments and international institutions.

13. There is, however, need to appraise the mechanism for internal coordination in project management between the programme managers and the Fund Programme in view of the delays experienced in the submission of identifiers by some contractors. It is also recommended that the partners of UNEP should shoulder greater responsibility in financing the projects so that the financial burden of UNEP remains catalytic.

14. Although the subprogramme ceased to exist with effect from January 1999, UNEP should continue to provide assistance to Governments in the procurement of resources for biodiversity conservation from the sources

discussed in the report. The report further recommends the need for UNEP to continue to respond positively to the new and emerging environmental challenges, including biodiversity and trade, equitable sharing of benefits from the use of biodiversity resources, biotechnology and biosafety, economic policy instruments and targeted capacity-building.

15. Within the new UNEP structure, efforts will need to be made in the coordination of biodiversity programme development and implementation in order to achieve harmony and coherence within the various programme components.

SECTION ONE: IMPLEMENTATION OF BIODIVERSITY SUBPROGRAMME
DURING THE 1996-1997 BIENNIUM

INTRODUCTION

A. Background

16. The subprogramme on caring for biological resources is one of the major programmes of the United Nations Environment Programme (UNEP) and was established as a follow-up to the United Nations Conference on the Human Environment held in Stockholm in 1972. In 1973, the UNEP Governing Council adopted the conservation of nature, wildlife and genetic resources as its programme of priority. During the period 1972-1992, the main UNEP initiatives included the provision of assistance to Governments in the conservation of species, habitats and ecosystems as well as their genetic resources. Within this context, UNEP supported the preparation of major international conservation initiatives. In addition, UNEP supported the adoption and implementation of international and regional agreements and helped Governments settle their political differences.

17. The United Nations Conference on Environment and Development (the Earth Summit) which was held in Rio de Janeiro, Brazil in 1992 generated five formal documents: the Action Programme, Agenda 21, the Convention on Biological Diversity, the Non-legally Binding Authoritative Statement of Principles for a Global Census on the Management, Conservation and Sustainable Development and the Rio Declaration. The Earth Summit also proposed GEF as a possible interim financial mechanism for the Convention on Biological Diversity and the United Nations Framework Convention on Climate change (UNFCCC).

18. Chapter 38 of Agenda 21 on international institutional arrangements asserts that in order to accomplish the work agreed to at the Earth Summit, existing institutions, particularly UNEP must be strengthened and that national capacity-building for environment and development should be part of this effort. Thus, UNEP was charged with the responsibility of, inter alia, strengthening its catalytic role; promoting international cooperation in the field of environment; developing techniques such as natural resource accounting and environmental economics; environmental monitoring and assessment; raising environmental awareness; developing international environmental law; and promoting subregional and regional cooperation. A further outcome of the Earth Summit was the establishment of the Commission on Sustainable Development (CSD) and the establishment of an intergovernmental negotiating committee for the purpose of elaborating an international Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa in compliance with paragraph 12.40 of Agenda 21.

19. Over the years UNEP has provided substantial support to the Convention on Biological Diversity through synergies and complementarities between the Convention and its work programme. This was the case with the subprogramme on caring for biological resources.

20. The Convention consists of a preamble, 42 articles and two annexes and its primary objectives are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding.

21. Since 1992, the conservation and sustainable use of biodiversity has been a major aspect of the UNEP mission. The subprogramme, therefore, serves as a tower of strength for UNEP in mobilizing global, regional and national action to conserve the environment and promoting the sustainable use of biological resources.

22. Overall, UNEP serves as the secretariat for several international agreements, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Conservation of Migratory Species of Wild Animals (CMS). It also continues to assist national Governments in the formulation of environmental legislation as well as the preparation of national legal instruments needed for the implementation of international agreements.

23. During the biennium under review, the United Nations General Assembly meeting at its nineteenth special session, re-evaluated and appraised the implementation of Agenda 21 since Rio. The sectoral issues addressed by the special session included, fresh water; oceans including ocean pollution and fisheries; climate change; biological diversity; energy production, distribution and use thereof; forests; transport; land degradation and especially desertification; making trade and environment mutually supportive; eradicating poverty and changing consumption and production patterns.

B. Purpose and methodology of evaluation

24. The purpose of this evaluation is to assess the performance of the subprogramme in relation to the overall plans and priorities of UNEP. The evaluation presents the appropriateness of the subprogramme to the UNEP priorities as well as the efficiency and effectiveness of the programme delivery. The success or failure in achieving the expected outputs, the constraints, lessons learnt and other relevant issues pertaining to the programme delivery are also reviewed.

25. The evaluation also proposes specific recommendations to assist UNEP to strengthen and improve the biodiversity activities so as to implement them more efficiently, bearing in mind the launching of the new UNEP structure in the coming biennium.

26. The evaluation involved a careful scrutiny of the following documents:

- (a) Progress and final reports of the subprogramme;
- (b) Project documents and financial statements;
- (c) Self-evaluation fact sheets;
- (d) Publications;
- (e) Reports of implementing agencies; and
- (f) General correspondence in the files.

27. Interviews were also conducted with some programme officers who were involved in the implementation of the subprogramme as well as the programme officer in charge of the Evaluation and Oversight Unit.

28. The activities and outputs of the subprogramme were qualitatively and quantitatively analyzed in order to determine the general trends. Matrices were also prepared in order to understand the relationship between subprogramme element activities and their outputs. This was an in-depth desk evaluation, which covered the biennium 1996-1997 and part of the biennium 1998-1999.

I. PROGRAMME DESIGN AND ACCOMPLISHMENTS

A. Appropriateness of the subprogramme

29. As a follow-up to the Earth Summit, UNEP was reaffirmed as the principal United Nations body in the United Nations system mandated with the management of environment. It was charged with the responsibility of promoting the implementation of various decisions adopted in Chapters 15, and 16 of Agenda 21. The objectives and activities of Chapters 15 and 16 of Agenda 21 support the Convention on Biological Diversity. Chapter 15 stresses the value of biodiversity as a capital asset with the potential of yielding sustainable benefits at the national level, while Chapter 16 emphasizes the importance of biotechnology in development. The subprogramme 1/ is, therefore, multidisciplinary and multisectoral in nature and its main activities centre on the integrated management and sustainable utilization of the biodiversity of oceans and coastal areas, freshwater ecosystems as well as the terrestrial ecosystems. Furthermore, the subprogramme provides support for the implementation of biotechnology and servicing the secretariats and the administration of the trust funds for the implementation of the Convention on Biological Diversity and other relevant international conventions such as CITES and the CMS. Other global conventions dealing largely with biodiversity include the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (also commonly known as the Ramsar Convention), the International Convention for the Regulation of Whaling, serviced by the International Whaling Commission (IWC) and the United Nations Convention on the Law of the Sea. The subprogramme has provided support to the Convention on Biological Diversity secretariat since its establishment, in the form of technical inputs, administrative support, data information services as well as conference services.

30. For the effective implementation of the Convention on Biological Diversity, the subprogramme, in collaboration with the World Conservation Monitoring Centre (WCMC), supported (and will continue to support) the preparation of country studies which provided information and data on the status of biodiversity including needs, management costs and benefits to be derived in the context of articles 6 and 7 of the Convention on Biological Diversity.

31. At present, UNEP is exploring modalities for establishing a synergy arrangement on biodiversity-related conventions such as the UNFCCC for the purpose of promoting programmes of the conventions. Such working relations would address the emerging biodiversity issues in relation to other related

1/ In this review, the words subprogramme and UNEP are used interchangeably.

conventions. These modalities include meetings of biodiversity-related secretariats, meetings of the Ecosystem Conservation Group (ECG) and joint meetings of the subsidiary bodies on scientific technical and technological advice of relevant conventions.

32. In addition, UNEP continues to support the implementation of the United Nations Conference on Environment and Development Forest Principles by providing back-stopping to the activities of the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF). It also carries out policy studies on the environmental implications of international trade agreements related to forest products.

33. Changes in the status of biodiversity require monitoring and assessment at the global, regional and national levels. The subprogramme intensified its assessment and monitoring activities while providing support to WCMC in its various activities.

34. The Global Biodiversity Assessment (GBA), as a priority activity of the subprogramme, addressed a wider audience including international, regional and national environmental organizations and in particular, served as a basis for decision-making to meet the objectives of the Convention on Biological Diversity and Agenda 21. The GBA was, however, integrated into a global Biodiversity Information Network 21 (BIN21) and functioned as an early warning system against threats to biodiversity. The Biodiversity Data Management (BDM) project continued to receive support from UNEP within the context of article 7 of the Convention on Biological Diversity.

35. Assistance from UNEP continued to be given to targeted research to assist in decision-making for environmental management. Priority consideration was given to projects with strong emphasis on the training of researchers, specialists and managers from developing countries.

36. In collaboration with partner agencies, UNEP continued to support in situ and ex situ conservation of plant, animal and microbial genetic resources and the use of these resources for agriculture, industry and forestry within the context of Agenda 21 and the Convention on Biological Diversity. Ecosystems which are particularly vulnerable to biodiversity loss (e.g., Small Island Developing States (SIDS) and lands prone to desertification) received special attention.

37. The promotion of conservation and sustainable use of biodiversity in transboundary settings received support from the subprogramme. In particular, attention was given to the preparation and implementation of strategies and action plans for regional seas, international watersheds and bi- and multi-national reserves.

38. Activities on marine biodiversity, freshwater biodiversity, terrestrial biodiversity and microbial genetic resources received priority consideration. The subprogramme continued to support the Global Plan of Action for Conservation, Management and Utilization of Marine Mammals (MAMP) as well as the International Coral Reef Initiative (ICRI). In collaboration with other partners, UNEP explored the feasibility of carrying out a global assessment of the status of freshwater species as well as implementing a global plan of action for the conservation, management and the sustainability of freshwater and amphibious mammals.

39. Wetlands which constitute important habitats for many animal and plant species are important natural resources for regulating the water regimes of rivers and lakes, and thus received some attention from the subprogramme,

particularly with regard to the presentation of reports on the biological diversity of wetland types and the wildlife resources of wetlands of the Americas.

40. Working in conjunction with the World Commission on Protected Areas, previously the Commission on National Parks and Protected Areas of the World Conservation Union (IUCN), UNEP continued to strengthen national capacities in the management of terrestrial wildlife and protected areas. Within the context of article 9 of the Convention on Biological Diversity, UNEP continued to provide ex situ conservation of genetic resources for sustainable development in agriculture and forestry. And in collaboration with the Food and Agriculture Organization of the United Nations (FAO), UNEP continued to support the conservation of domestic animal genetic resources through national and international actions.

41. Chapter 38 of Agenda 21 calls on UNEP to assist Governments of developing countries in addressing issues of biodiversity and economics in areas such as trade, transfer and development of technology and economic policy instruments.

42. In the area of trade, UNEP work focused, inter alia, on the preparation of a background report on the implication of access and benefit sharing issues in relation to existing patent, royalty, and intellectual property rights as well as an analysis of the valuation of biodiversity and the implications of amended valuation on terms of trade for developing countries. With respect to the latter, the subprogramme gave priority attention to the development and application of economic tools for determining the costs and benefits of biodiversity conservation and its sustainable utilization. Country pilot studies were undertaken to assist countries in applying more effective economic approaches to biodiversity valuation such as the development of natural resource accounts for biodiversity as well as application of economic policy instruments, including economic incentives, tradable quotas and taxes.

43. Biotechnology features prominently in Chapter 16 of Agenda 21. Consequently, UNEP focused on the following themes: building biotechnology capacities in developing countries; conserving microbial resources; disseminating information and offering training in biotechnology safety; developing international technical guidelines on biosafety; and promoting fair and equitable sharing of the benefits of biodiversity utilization. For developing countries to make the transition to sustainable development, they need to build their technological capabilities. Plans are afoot at UNEP to assist such countries to formulate a policy and institutional measures to enable them accumulate technological capabilities and apply them. Research in appropriate biotechnology as well as the training in policy formulation would be carried out at the UNEP supported Microbial Resources Centres (MIRCENS) and other biotechnology institutions in developed countries.

44. On the issue of biotechnology safety, UNEP, in collaboration with other agencies, supported the establishment of an international register on biosafety. In light of the risks associated with the release in the environment of genetically modified organisms, efforts were made to consider the need for a protocol on biosafety under the aegis of the Convention on Biological Diversity. In this regard, UNEP sponsored a meeting of government-designated experts, preceded by regional consultations, to review international technical guidelines for safety in biotechnology.

45. In the area of the fair and equitable sharing of the benefits of biodiversity utilization, UNEP supported policy studies bearing in mind

issues such as access to genetic resources and access to technology and technology transfer as well as knowledge and innovations of indigenous peoples and the rights of farmers. It also documented and disseminated information on case studies and experiences of successful efforts to promote the fair and equitable sharing of the benefits of biodiversity utilization.

46. In cooperation with the secretariat of the Convention on Biological Diversity and other relevant organizations, UNEP sought ways of promoting the participation of the private sector in the implementation of the Convention on Biological Diversity.

47. Capacity-building is a cross-cutting topic found in most parts of the UNEP biodiversity subprogramme. The training of more taxonomists and the promotion of taxonomic research have already been noted in the Global Biodiversity Strategy and other action plans as well as strategy papers. That is why UNEP supported initiatives towards the training of taxonomists from developing and developed countries. It also planned to support the training of taxonomists in the application of technologies from molecular biology including DNA sequencing which can be utilized as a diagnostic tool. Such knowledge would be useful in the identification, *inter alia*, of genetically unique populations that are vulnerable to extinction. In collaboration with other institutions, therefore, UNEP supported initiatives aimed at developing the capacity to train policy analysts in developing countries with a view to building and strengthening human capacity in biodiversity at graduate level.

48. With regard to the raising of public awareness and the dissemination of information, the subprogramme continued to strengthen its activities by integrating biodiversity issues in public awareness and information dissemination, and promoting the use of other technologies such as electronic networks. Some of the activities which UNEP envisages to support in this area include the training of journalists in the coverage of biodiversity related issues, hosting workshops for youth leaders, producing new video tapes and films on biodiversity issues and organizing international photo competitions and mounting a travelling photo exhibition on biodiversity.

B. Efficiency and effectiveness of subprogramme objectives

49. For the 1996-1997 biennium, the subprogramme consisted of seven objectives, listed as follows:

(a) Develop policy instruments for the integrated management of biological resources, including aspects of biosafety in accordance with the Convention on Biological Diversity;

(b) Support regional and subregional programmes for the protection of biological resources, including transboundary ecosystems;

(c) Prepare and implement strategies for the protection and sustainable use of marine and freshwater ecosystems and their living resources;

(d) Service institutionally biological diversity-related conventions;

(e) Promote targeted research on critical issues related to biological diversity and mobilize resources from GEF to develop country studies and plans for integrated management;

(f) Support implementation of forest principles; and

(g) Promote targeted scientific research in critical environmental areas.

50. The subprogramme element on the development of policy instruments for the management of biological resources, including aspects of biosafety, focused its attention on promoting the use of environmental economics and natural resource accounting in view of the fact that the traditional tools used in economic analysis are, by and large, inadequate to deal with environmental issues. Two workshops on the economics of biodiversity loss and the economic valuation of biological diversity were conducted and attended by 40 and 22 experts respectively. The workshop on the economics of biodiversity loss focused its attention on the role of economics valuation and the economic incentives in the development of a framework for biodiversity impact studies. The regional workshop on the economic valuation of biological diversity focused on economic issues related to valuation and the protection of biodiversity.

51. Case studies were also carried out in this subprogramme aimed at the implementation of various articles of the Convention on Biological Diversity within the context of the conservation and sustainable utilization of biodiversity as well as on benefit sharing arrangements of plant genetic resources.

52. In the area of biotechnology, attention focused on building biotechnology capacity in developing countries through the provision of training in biotechnology safety, information dissemination as well as the development of international technical guidelines for safety in biotechnology. The promotion of fair and equitable sharing of the benefits of biodiversity utilization was also undertaken. The major activities included, the hosting of global, regional and subregional consultations and meetings, ad hoc working groups, workshops, conferences, as well as the provision of support to the development and implementation of national biosafety mechanisms.

53. The subprogramme element on supporting regional and subregional programmes for the protection of biological resources, including transboundary ecosystems focused on the sustainable development of mountain ecosystems as well as the preparation of various reports and documents. In this connection, project documents on global policies, strategies and action plans for the conservation of threatened species as well as the conservation of biological diversity in the wildlands and protected areas respectively were prepared and submitted to GEF for funding. An agenda for biological diversity conservation and policy development for the wetlands of South America was also prepared. There was also a regular review of issues relating to tiger conservation and trade.

54. The subprogramme element on the preparation and implementation of strategies for the protection and sustainable use of marine and freshwater ecosystems and their living resources addressed, among other things, the conservation, management and utilization of marine animals through the revision of the action plan. Several activities (six workshops, symposia,

expert group meetings) were undertaken in support of international coral reef initiatives. The IUCN was heavily involved in the coral reef initiatives. Other related activities included the participation of UNEP in the first meeting of the Contracting Parties to the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East African Region, as well as the testing by the IUCN/UNEP expert group of their methodology for rapid assessment of coral reefs in Mozambique, with a view to modifying the technology for use in the whole western Indian Ocean region. Finally, activities relating to the protection of the highly endangered Mediterranean Monk Seal were undertaken.

55. The institutional servicing to biological diversity-related conventions is a subprogramme element whose activities included administrative support to the Convention on Biological Diversity and its subsidiary bodies, preparation of documents within the context of specific articles of the Convention on Biological Diversity as well as the servicing of meetings of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). A policy paper on linking global environmental issues with human needs (opportunities for strategic interventions) was also prepared jointly by UNEP, the National Aeronautics and Space Administration (NASA) of the United States and the World Bank.

56. At its seventh session, the Global Biodiversity Forum addressed such themes as identifying and monitoring the causes of species loss; non-detrimental export and sustainable use; access to floral resources and community-based resource management. At its eighth session the Forum focused, inter alia, on inland waters, incentives, private sector partnerships, and the marine and coastal environment; policy research capacity to implement the Convention on Biological Diversity; biodiversity education and communication and the role of forest protected areas and sustainable forest management in biodiversity conservation.

57. The subprogramme element on promoting targeted research on critical issues related to biological diversity and mobilizing resources from GEF to develop country studies and plans for integrated management, centred its attention on the mobilization of resources from GEF for various activities. The activities supported by GEF were as follows: the preparation of a proposal on tropical forest dynamics programme: sustainable management of tropical forest resources; capacity-building in developing countries and networking biodiversity information; assistance for the preparation of national biodiversity strategies, action plans and first national reports to the Convention on Biological Diversity; the development of a clearing-house mechanism to facilitate access to and exchange of information and supporting the implementation of article 8(j) of the Convention on Biological Diversity to preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.

58. Other activities involved substantial inputs into Biodiversity Data Management workshops in selected countries as well as related issues. Finally, the subprogramme dealt with the publication of a volume, Cultural and Spiritual Values of Biodiversity, which supplemented information on the economic value of biodiversity. The volume outlines the importance of local knowledge systems and shows how they are key to biodiversity conservation.

59. The subprogramme element on forest principles provided expertise on issues related to the IPF, including the provision of guidance, advice and technical inputs to its activities. The subprogramme further played a key

role in the development and implementation of the criteria and indicators for sustainable forest management in dry-zone Africa and the Near East, in partnership with FAO. The establishment of criteria and indicators for sustainable forest management in dry zones is a mandate given to UNEP and FAO in their capacity as members of the Inter-agency Task Force on Forests (ITFF) of the IPF/IFF. Acting on behalf of the World Commission on Forests and Sustainable Development (WCFSD), UNEP organized the African Regional Hearing on Forests. A Trust Fund was established by WCFSD in UNEP for the African Regional Hearing. In addition, UNEP provided technical, political and scientific advice to WCFSD.

60. The subprogramme also gave substantive support to the IPF/IFF. The lead agency of programme element 1.5 (a) of the IPF/IFF on the needs and requirements of countries with low forest cover, is UNEP. In that capacity, UNEP prepared the Secretary-General's report to the second, third and fourth session of the IPF and proposed concrete actions for the implementation of the programme element. It also seconded a senior staff member to the IPF/IFF secretariat thanks to funds from the Dutch Government.

61. The subprogramme, in collaboration with FAO, prepared the strategic plan for Africa within the framework of the Global Forest Resources Assessment 2000. Successful policy options and best practices were reviewed at the African Forest Policy Forum held at the UNEP headquarters and organized jointly by UNEP and the World Bank.

62. Policies on forest management are already changing in many parts of Africa through the African Ministerial Conference on the Environment (AMCEN) and its Committee on Forests and Woodlands. In a number of countries, local communities are actively involved in the management of forest resources. Participatory decision-making is now a prerequisite for community involvement in forest management. Community based forest management efforts normally encompass conservation and rural development. As pointed out elsewhere the use of forest guards by African Governments to protect forests thereby prohibiting entry of local communities is rapidly fading away.

63. The use of economics as a tool in assessing the loss of biodiversity is relatively new. Two workshops were held in the 1996-1997 biennium as indicated earlier. According to Agenda 21, one of the UNEP mission goals is to develop and promote the use of techniques such as natural resource accounting and environmental economics. The training courses in environmental economics and natural resource accounting were, therefore, implemented within the UNEP mandate. Furthermore, UNEP was effective in the administration of the workshops and its catalytic role was achieved.

64. A number of activities were undertaken by UNEP within the context of article 11 of the Convention on Biological Diversity on incentive measures. A report was recently received from the M.S. Swaminathan Research Foundation on a conceptual framework for promoting benefit sharing in the conservation and use of plant genetic resources. The identifier has been found by both the Unit and the Consultant to be satisfactory. The report should be distributed widely to Governments, the United Nations system and international institutions for use in formulating their policies.

65. The Consultant has not found any additional information on the anti-HIV compound from Ancistrocladus korupensis, nor data on the work carried out on Prunus africana that possesses substances known to treat prostate hyperplasia. More importantly, there is no information on the benefit sharing

arrangements between the two neighbouring countries (Nigeria and Cameroon) with respect to the utilization of the two plant species.

66. Evaluation of the Biodiversity Data Management (BDM) shows that the project provided a catalytic effect to the activities on biodiversity management as well as other related activities although the lack of capacity in some member States slowed down the process. Support in the form of technical data, materials and methodologies was provided by UNEP for the standardization of national biodiversity data, thereby providing leadership in the implementation of Agenda 21.

C. Quality and utility of subprogramme outputs

67. One of the indicators of project performance should be the extent to which the expected outputs are realized. It must, however, be appreciated that some of the outputs may not be quantifiable. While it is not possible to determine the quality and utility of individual outputs, the review that follows summarizes, in general terms, the overall picture of the realization as well as the quality and utility of the subprogramme outputs.

68. The outputs produced by the subprogramme during the biennium were varied but can be grouped roughly in the following categories:

- (a) General reports;
- (b) Policy documents;
- (c) Capacity-building;
- (d) Publications;
- (e) Databases; and
- (f) Guidelines.

(a) General reports

69. The general reports arose from meetings, workshops and conferences. Various forums were extensively used by UNEP to bring together target groups, including scientists, government experts and policy makers to exchange views, experiences and information. In some cases, such forums resulted in the production of secondary outputs from the general reports, while in other instances the general documents constituted the final outputs. The production and publication of various reports included reviews (overviews) covering topics raised at workshops, conferences and meetings, regional strategies and action plans, research papers, training manuals and pamphlets. Some documents were subsequently used in the preparation of projects for GEF funding.

70. The general reports were used by Governments and their intergovernmental organizations in formulating policies on environmental management. The wide distribution of the reports resulted in the promotion of environmental awareness as well as the sharing of information, data and experiences.

(b) Policy documents

71. The subprogramme produced numerous policy documents at the request of Governments, organs of the United Nations system or international organizations. Set out below are some examples of policy documents produced.

72. Two policy documents were prepared by UNEP for SBSTTA entitled, "Ways and means to promote and facilitate access to, and transfer and development of -technology" (1997), and "Capacity-building for biosafety: Options for Action". The documents were prepared in the context of article 8(g) and article 19 of the Convention on Biological Diversity and are being used by the Convention's country Parties to regulate and manage the risks associated with the use and release of living modified organisms into the environment. The release into the environment of such organisms would have adverse environmental impacts including risks to human health.

73. In addition, UNEP produced two reports: The UNEP forest policy and a proposed action programme for the period 1996-2000 and Linking global environmental issues with human needs: opportunities for strategies interventions. The latter report was produced by UNEP, NASA and the World Bank and was distributed to Governments, policy makers, scientists, relevant conventional secretariats and international organizations. It was an important document dealing with issues such as linking and mainstreaming environmental issues into development, and strategic opportunities for interventions.

(c) Capacity-building

74. This involved the training of government experts in specific methodologies and techniques such as biotechnology and biosafety, molecular genetics, rhizobium technology, biodeterioration, etc. This subject is extensively reviewed later, but it is one area in which UNEP contributed markedly to the conservation of biodiversity and particularly in developing countries through the development of human resources.

(d) Publications

75. There were some publications arising from conferences, workshops and targeted research during the biennium. Technical publications included peer-reviewed scientific papers such as Phage-resistant lactococcal strains for use in dairy fermentation from the Cairo MIRCEN. Other technical reports included the Conservation, sustainable management and use of forest genetic resources in Sub-Saharan Africa (1997); Monitoring genetic diversity of yams in Uganda (1997), Monitoring genetic diversity of Bambara groundnuts in two districts of Upper West Region of Ghana (1997). The list of all the publications, including policy documents for the 1996-1997 biennium is appended to the present report as Annex 1.

76. The activities on genetic diversity in yams and Bambara groundnuts were undertaken with a view to building the capacity of sub-Saharan African countries by training young scientists in plant genetic resources conservation and use. The results contained in the two publications have, therefore, increased the scientific knowledge about the level and distribution of genetic diversity and the sites with maximum useful variations as the basis for conservation programmes. The documents, which have been extensively distributed, have further enhanced training capacity to meet future needs for human resources development in the subregion.

77. The volume Cultural and Spiritual Value of Biodiversity (approximately 800 pages) outlines the importance of local knowledge systems and shows how these are key to biodiversity conservation. The volume was presented in the Global Biodiversity Assessment and was subsequently subjected to peer review. The Consultant has been informed that the volume has not yet been published. The publication will target the general public as it contains information on the application of traditional knowledge as well as religious and moral issues related to the conservation and sustainable use of biodiversity.

78. An important publication which underpinned the work programme of the subprogramme was the UNEP Biodiversity Programme and Implementation Strategy, which described the objectives, programme areas and implementation strategy.

79. The publication has been described as the flagship activity of the UNEP programme and focuses on the application of leverage to global, regional and national action to conserve environment and promote the sustainable use of biodiversity resources. The document describes the UNEP biodiversity programme and is, therefore, a valuable reference document for other United Nations entities as well as international and national institutions which are involved in biodiversity conservation and utilization activities. The target groups of the publication are Governments, United Nations bodies and international institutions.

(e) Databases

80. A number of centres of excellence were used by UNEP to gather and disseminate important databases. The inaugural UNEP/Biotechnology meeting in July 1996 saw the launching of the UNEP International Register on Biosafety (IRB) on a worldwide web site on the Internet. The Register has been serving as a mechanism for the exchange of specific information between biosafety focal points as well as the exchange of general information about national biosafety mechanisms. It was also expected to facilitate the exchange of general information about genetic research of value to risk assessment and risk management.

81. The Microbial Strain Data Network (MSDN) in Sheffield reported that it had identified five new sources for microbial strains (India, Argentina (2), Bulgaria, Hungary,) and that a new web site had been created to aid in the updating and distribution. The centre also reported the updating of the Czech Catalogue of Filamentous Fungi.

82. The biodiversity data management capacitation in developing countries and networking biodiversity information have been initiated by UNEP and the World Conservation Monitoring Centre (WCMC). The aim is to mobilize data as a key instrument in building and enhancing national capacity for planning biodiversity strategies and actions for conservation and sustainable use. During the biennium under review, ten developing countries: Egypt, Thailand, Poland, Ghana, Bahamas, Kenya, Chile, China, Papua New Guinea and Costa Rica, were involved in the project. Guidelines to support information management as well as the compilation of national resource inventories (meta-databases) had been completed by the end of the biennium. In some countries, updated biodiversity data management plans had also been prepared.

(f) Guidelines

83. A number of guidelines for environmental management were prepared by UNEP for the benefit of Governments and their intergovernmental

organizations, United Nations bodies as well as international organizations. Examples of some of the guidelines prepared during the 1996-1997 biennium include:

- (i) UNEP International Technical Guidelines for Safety in Biotechnology (1996). This document was produced in English, French, Spanish, Chinese, Arabic, Russian and distributed widely. The guidelines arose from seven regional and subregional consultations and an apex global consultation meeting attended by various United Nations entities, representatives from industries and government designated experts. The formulated and disseminated biosafety guidelines were used to build consensus globally and were later to be used in both developed and developing countries.
- (ii) In 1997 UNEP, as the task manager of chapter 15 of Agenda 21, prepared the report of the Secretary-General on the conservation of biological diversity. The report which focused on policy changes as well as key economic actors was presented to the fifth session of CSD. The report was subsequently presented to the General Assembly at its nineteenth special session, which drew the overall conclusions on the progress, success factors and obstacles to policy implementation since the Earth Summit.
- (iii) In 1996 UNEP prepared the Secretary-General's report to the second IPF session held in Geneva for substantive discussion. The report was updated and subsequently presented to the third session of IPF in September 1996 for review and adoption.

84. As pointed out earlier, UNEP outputs were distributed widely to Governments and their intergovernmental organizations, non-governmental organizations, Conference of the Parties to the Convention on Biological Diversity and other related conventions, United Nations bodies and international organizations. It is also important to add that many of the outputs described earlier were jointly sponsored by UNEP and other United Nations entities as well as international organizations. Among the organizations which jointly sponsored the production of outputs with UNEP were FAO, the African Centre for Technology Studies (ACTS), the Consultative Group on International Agricultural Research (CGIAR), CITES, the Convention on Biological Diversity, the Organization for Economic Cooperation and Development (OECD), NASA, CMC, CSD, International Plant Genetic Resources Institute (IPGRI), IUCN, Smithsonian Tropical Research Institute (STRI), United Nations Educational, Scientific and Cultural Organization (UNESCO), World Wide Fund for Nature (WWF), United Nations Industrial Development Organization (UNIDO), WCMC World Resource Institute (WRI), World Health Organization (WHO) and the World Bank. For these organizations to enter into joint project implementation with UNEP, was a clear indication that the programme and the projects were sound.

85. The UNEP activities and outputs have had a significant and important influence on the formulation of environmental policies by Governments. In recent years some Governments have begun initiatives to incorporate environmental dimensions into socio-economic policies. A few countries have already taken steps to merge ministries dealing with the environment with the ministries handling economic planning (e.g. Seychelles) while others have posted an environmental expert in crucial ministries (agriculture, industry,

transport, etc.) to ensure the incorporation of environmental concerns in economic policies. A few Governments have now realized the need not only to conserve biological resources but also to utilize them sustainably. This is particularly relevant in forest ecosystems where the indigenous peoples are being increasingly involved in the protection and use of forest resources in contrast to the old-fashioned usage of forest rangers or guards. Many Governments are also involved in the conservation of fragile and endangered ecosystems including the fauna and flora therein. The Kenyan Wildlife Service, for example, is, as a general policy, involved in the protection and conservation of the coastal and marine resources but with emphasis on the conservation of the dugongs, a project which was supported by the subprogramme.

D. Impact

86. A number of activities carried out by the subprogramme have put UNEP on the global map. The most outstanding ones include:

- (a) The Convention on Biological Diversity;
- (b) Biotechnology and biosafety;
- (c) Capacity-building;
- (d) The International Coral Reef Initiative; and
- (e) The IPF/IFF process.

(i) The Convention on Biological Diversity

87. Through the Convention on Biological Diversity support was given to the implementation of the subprogramme element on institutional servicing to biological diversity-related conventions.

88. Although the Convention on Biological Diversity was opened for signature in Rio during the Earth Summit (1992), most of the activities associated with its launching took place much later. As the custodian of global environmental issues (see Chapter 38 of Agenda 21), UNEP was the principal United Nations entity, responsible for steering the formulation of the Convention as well as the subsequent establishment of the Convention secretariat.

89. In addition, UNEP provided administrative support to the Convention, including the preparation of job descriptions for secretariat posts as well as the recruitment of staff. It also seconded its Chief of Fund Programme Management Branch to the Convention for a period of 13 months.

90. When the Second Conference of the Parties decided to locate the permanent secretariat of the Convention in Montreal, UNEP negotiated the text for the headquarters agreement and prepared some of the documents for the second meeting of SBSTTA. It also signed an agreement with Argentina for hosting the Third Conference of the Parties in Buenos Aires.

91. The subprogramme has also been instrumental in its attempt to link the Convention on Biological Diversity to other related international conventions, and, in this respect, have established relations between CITES and the Convention on Biological Diversity.

92. With regard to the links between the Convention on Biological Diversity and the Convention to Combat Desertification, the GEF Assembly held in New Delhi in April 1998, recommended that in consultation with the secretariat of the Convention to Combat Desertification, GEF should seek to better define the linkages between land degradation, particularly desertification and deforestation and its focal areas with a view to increasing GEF financing for land degradation projects.

93. The UNEP biodiversity country studies project assists countries in gathering information on the status and trends of species, genetic materials and ecosystems; the status of current conservation and use mechanisms, and the monetary and non-monetary costs and benefits involved. This information is critical in the formulation of national biodiversity strategies and plans. Guidelines have also been prepared for the comparability of results as well as the replication of the activities in other countries. The implementation of this activity fulfils the UNEP goal of providing support to countries in the area of environmental monitoring and assessment.

94. To support the implementation of article 6 of the Convention on Biological Diversity, UNEP, with support from GEF, has launched a project on, assistance for the preparation of national biodiversity strategies, action plans and first national reports to the Convention on Biological Diversity, in association with national Governments, UNDP and World Bank. The project was being implemented in 22 countries at a cost of \$ 4,154,560.

(ii) Biotechnology and biosafety

95. With regard to biotechnological safety, the subprogramme had two objectives, namely:

- a. To disseminate information and offer training in biotechnological safety; and
- b. To develop international technical guidelines for biosafety in biotechnology.

96. In consultation with UNIDO, FAO, UNDP, UNESCO, WHO, the Department for Policy Coordination and Sustainable Development (DPCSD), UNEP organized seven regional and subregional consultations as well as an apex consultation meeting which adopted the UNEP International Technical Guidelines for Safety in Biotechnology. As indicated earlier, parallel to the inaugural UNEP/Biotechnology Industry meeting in Geneva was the launching of the UNEP International Register on Biosafety on world wide web site, for the exchange of information on living modified organisms, national biosafety mechanisms, genetic research, information on alien species, etc. Although the above measures may not have improved the general environment as such, their absence could easily have led to disastrous consequences given the release of living modified organisms in the environment.

97. Assistance was given by UNEP to 18 Convention on Biological Diversity country Parties to obtain resources as a package from GEF for biosafety under the Pilot Biosafety Enabling Activity Project. It also supported the development and implementation of national biosafety mechanisms in 15

countries. Support by UNEP to biosafety activities resulted in the formulation of a protocol on biosafety in compliance with article 19(3) of the Convention on Biological Diversity.

98. Training in biotechnology and biosafety through workshops and consultation meetings was extensively and adequately covered. In addition, a training course jointly sponsored by UNEP and the ICGB in the context of annual workshops on Biosafety and Risk Assessment for the Release of Genetically Modified Organisms was held in Trieste (Italy) and attended by 25 participants.

99. Article 19, paragraph 3 of the Convention on Biological Diversity states that Parties will consider the need for and modalities of a protocol setting out appropriate procedures in the handling and use of any living modified organisms resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biodiversity. The commencement of work on the Biosafety Protocol took place in Aarhus in July 1996 at the Open-ended Ad hoc Working Group Meeting on Biosafety. The meeting reviewed the Governments' and the Convention secretariat's submissions of draft texts on items for inclusion in a biosafety protocol. A consolidated draft was produced. Governments were, however, encouraged to provide other options. The text of the protocol has been the centre of extensive negotiations and will be presented for further consideration and adoption in the near future.

(iii) Capacity-building

100. Capacity-building means developing a country's human, scientific and technological, institutional and resource capabilities.

101. Human capacities are the wealth of a nation, and although machinery and finance are important, it is the people that make economies grow.

102. Capacity-building is a cross-cutting issue so that nearly every subprogramme element has contributed to capacity-building directly or indirectly. Although no estimate has been carried out on resource implications for individual subprogramme elements, it is probable that more than 50 per cent of the subprogramme resources have been spent on the development of human capacities through workshops, expert group meetings, conferences, consultations, etc.

Table 1.0: Attendance of UNEP organized supported meetings, workshops and training courses in 1996-1997

Year	Expert group meetings	Workshops/seminars + Other meetings	Training courses
1996	25	64	3
1997	9	36	-
Total	34	100	3
Approx. number of participants	6818	3948	56

103. As pointed out earlier, the subprogramme used a variety of methods in the development of human capacities, including workshops, meetings, brainstorming sessions, conferences, forums and training courses. A rough

estimate indicates that during the biennium, a total of 34 expert group meetings, 100 workshops or seminars and related meetings and three training courses were held (See Table 1.0). Although there are some blank spaces in annex 1 A and annex 1 B to the progress report (January 1996-June 1997) of the subprogramme with regard to the attendance, a rough calculation suggests that more than 6,818 participants attended the expert group meetings while more than 3,948 participants attended the workshops or seminars and other related meetings. Three training courses focusing on biological risk assessment and biodiversity data management were mounted during the biennium and attended by 56 participants. The grand total of the participants in all types of UNEP organized supported meetings was certainly in excess of 10,822 during the 1996-1997 biennium.

104. Closely related to capacity-building is resource mobilization for the various environmental activities at both the national and subregional levels. UNEP was instrumental in assisting the Convention developing country Parties to procure resources from GEF for the implementation of their activities as pointed out earlier.

105. The total number of workshops, seminars, conferences and other meetings held in the biennium was greater than the number of expert group meetings organized. In order to take a decision on the type of capacity-building method to adopt, it would be necessary to undertake studies on the impact of different training methodologies at the national and subregional levels. It has already been pointed out elsewhere in this report that the follow-up has not been done and will need to be carried out. The Consultant has further emphasized the importance of capacity-building in developing countries. For UNEP to further improve on its performance in project implementation in developing countries, it will be necessary to promote and strengthen local expertise, their technical capacities as well as their institutions.

(iv) The International Coral Reef Initiative

106. Numerous activities were undertaken in support of the International Coral Reef Initiative (ICRI) which was implemented in support of the subprogramme element on preparing and implementing strategies for the protection and sustainable use of marine and fresh water ecosystems and their living resources. Workshops were organized for East Asia Seas (1996), Western Indian Ocean and East African region (1996) and the Brazilian coastal area (1996). Other activities included an International Coral Reef Symposium (1996), the establishment of the Global Coral Reef Monitoring Network (1996) and an evaluation mission to Mozambique (1997). The latter involved the testing of a methodology for the rapid assessment of coral reefs with a view to modifying the technique for use in the Western Indian Ocean region.

107. The main challenges associated with the coral reefs and related ecosystems are linked to the need to strengthen the management capabilities of the local people and build in-country expertise for strategy development aimed at the protection of and management of coral reefs in order to maximize benefits to local resource users and coastal communities in general.

108. The workshops mentioned earlier attempted to resolve these difficulties by involving local communities and the non-governmental organizations in their deliberations. In most cases, priority actions were agreed upon in the form of regional strategies and action plans for the conservation and sustainable use of the coral reefs and the associated ecosystems. Such regional strategies also identified project proposals to promote conservation and sustainable use of coral reefs as well as research priorities. In

addition to the publication of papers presented, field guides as well as ecological maps of specific coral reef ecosystems were produced.

(v) The IPF/IFF Process

a. Establishment of the Intergovernmental Panel on Forests

109. In view of the lack of progress since the Earth Summit (1992) in halting deforestation and the degradation of forests of all types, and in order to monitor the progress of the implementation of the Earth Summit outputs on forest-related issues, the United Nations Commission on Sustainable Development established in 1995 an open-ended Intergovernmental Panel on Forests (IPF) to address 12 programme elements:

- i. National forests and land-use plans;
- ii. Underlying causes of deforestation;
- iii. Protection and use of traditional forest-related knowledge;
- iv. Ecosystems affected by desertification and pollution;
- v. Needs of countries with low forest cover;
- vi. Financial assistance and technology transfer;
- vii. Forest assessment;
- viii. Valuation of forest benefits;
- ix. Criteria and indicators;
- x. Trade and environment;
- xi. International organizations and multi-lateral institutions; and
- xii. Legal mechanisms.

110. The IPF met four times and presented its conclusions to the April 1997 meeting of the CSD. The final report which contained a set of 135 proposals for implementation by Governments was produced in early 1997. This package of proposals was endorsed by the General Assembly in June 1997 at its nineteenth special session on the implementation of Agenda 21.

b. The Intergovernmental Forum on Forests

111. At its nineteenth special session, the General Assembly decided to continue the intergovernmental policy dialogue on forests through the establishment of an ad hoc open-ended Intergovernmental Forum on Forests (IFF) under the aegis of CSD. The General Assembly decided that "the Forum should also identify the possible elements of work towards consensus on international arrangements and mechanisms, for example, a legally-binding instrument."

Furthermore, IFF was mandated to:

- i. Promote the implementation of the IPF proposals;
- ii. Monitor such implementation; and
- iii. Address matters left pending by IPF (e.g., financial resources, transfer of technology and trade and environment).

112. With regard to the IFF programme of work, it was decided that the sessions should be conducted along the following categories, which should receive balanced intergovernmental attention:

- i. Category I would involve promoting and facilitating the implementation of the IPF proposal for action on the one hand, and reviewing, monitoring and reporting on progress in the management, conservation and sustainable development of all types of forests on the other hand;
- ii. Category II would deal with matters left pending and other issues arising from the programme elements of IPF processes;
- iii. Category III would identify elements, build a global consensus and engage in further action to promote the management, conservation and sustainable development of all types of forests. It should also work towards a consensus on international arrangements and mechanisms, for example, a legally binding instrument on all types of forests. The IFF was expected to report to CSD at its eighth session in 2000.

E. Organizational structures

113. The subprogramme on caring for biological resources was multi-sectoral in character, and as such required a multi-disciplinary approach to implement it. The subprogramme addressed not only biodiversity issues but also policy, economic and biotechnology issues. Although it was principally responsible for the implementation of Chapters 15 and 16 of Agenda 21, it was also deeply involved in the implementation of other relevant chapters (protecting mountain ecosystems, safeguarding the ocean's resources, protecting and managing fresh water resources, combating deforestation and halting the spread of deserts) found in Agenda 21. Furthermore, the subprogramme addressed the crosscutting issues of capacity-building, environmental awareness, international, regional and national legal environmental issues, as well as the procurement of resources for the implementation of the various subprogramme elements. Finally, the subprogramme was responsible for looking after the affairs of a number of institutions dealing with biodiversity-related issues, including the Convention on Biological Diversity and CITES. It has already been noted that these issues were regrouped into six subprogramme elements for ease of implementation.

114. To ensure the effective implementation of projects formulated from this extensive array of issues, the subprogramme formed linkages with several units within the UNEP structure. Of strategic and crucial importance were the Water Branch Unit, Assessment Unit, Law Unit and Desertification Convention Programme Activity Centre (DC/PAC) as well as the regional offices. The Regional Offices for Europe and Latin America were the most active.

115. In order to obtain inputs from the cooperating units, projects were circulated in house. A number of projects were subsequently implemented jointly, and in some cases the sister units assumed full responsibility for implementing priority actions identified at routine workshops, etc. A case in point is when the Water Branch Unit undertook the development of a regional rapid assessment methodology for the coral reefs, an issue which had been proposed by the ICRI regional workshop for the West Indian Ocean.

116. The subprogramme had nine substantive professional staff and an additional two who were based in the Regional Offices for Europe (Geneva) and Latin America (Mexico) respectively. The Regional Office for Africa was somewhat inactive resulting in the non-use of the various AMCEN committees and networks.

117. For the purpose of implementing projects developed from the broad array of issues summarized above, projects were grouped into themes such as ecosystems, biotechnology and biosafety, economic and policy instruments, aquatic biodiversity, country studies and pilot projects. Each of the themes was assigned to a team leader who provided leadership and guidance in the management and execution of project activities within the group. Regular meetings to review progress in the management of individual projects were held at the theme level as well as at the subprogramme level.

118. The roles played by the other United Nations agencies, Governments, international institutions and organizations in the implementation of the various projects has already been reviewed. At the grassroots level, the non-governmental organizations were instrumental in guiding and assisting the local population in caring for their environmental resources through the organization of public educational programmes as well as assessments and analyses of the ecological conditions of the community ecosystems (land, water, livestock, etc).

II. PROBLEMS AND CONSTRAINTS ENCOUNTERED

A. Resource Allocation

119. The period under review coincided with the general financial crisis in the United Nations system which led to a reduction in the UNEP United Nations regular budget. Projected reductions in the Governments' contributions to the Environment Fund also necessitated the search for extra-budgetary resources for the work programme. Consequently, the subprogramme with six programme elements plus the programme element on targeted scientific research were re-phased in thirteen priority areas.

120. Initially, at its eighteenth session, the UNEP Governing Council had approved \$ 7.2 million (8 per cent of the overall Environment Fund) for activities under this subprogramme. Based on this allocation, 29 annexes were submitted for approval and by February 1996, 12 annexes had been approved and developed into individual project documents.

121. In view of the overall reduction in the Environment Fund, the subprogramme was unable to implement the programme of work at the level approved by the eighteenth session of the UNEP Governing Council. A mid-term review, which was undertaken to revise the programme of work, approved a budget of \$ 4.7 million for the 1996-1997 biennium. An additional funding amounting to \$ 4,780,880 had to be arranged through extra-budgetary financial resources, bringing the total programme budget to \$ 9,489,880.

122. A number of activities approved by the UNEP Governing Council could not be implemented in view of the overall reduction in the Environment Fund. Consequently, the Biodiversity Unit had to mobilize funds from other sources such as GEF to implement the approved activities. This situation should be avoided if Governments expect UNEP to deliver its programme of work as approved by the Governing Council. The Governments should honour their commitment by providing the necessary resources to the Environment Fund. The following is a list of some activities which necessitated the mobilization of funds from extra-budgetary resources:

(a) Assistance for the preparation of national biodiversity strategies, action plans and first national reports to the Convention on Biological Diversity;

(b) Second international workshop to follow up on the UNEP international technical guidelines for safety in biotechnology;

(c) Linkages between the Convention on Biological Diversity and other conventions on related issues;

(d) Subregional workshop for West and Central Africa on safety in biotechnology;

(e) Workshop on transmovement of living modified organisms resulting from modern biotechnology;

(f) Second central and eastern European conference on regional and international cooperation for safety in biotechnology;

(g) PFD Block A Grant-Incentive measures for biodiversity; and

(h) Support to the Clearing-House Mechanism module.

B. Programme Development and Management

From the available information, it is quite clear that most of the projects were implemented on time and satisfactorily. There are, however, two projects which need to be commented upon because of the serious delay in their implementation.

1. A conceptual framework for promoting benefit-sharing in the area of conservation and use of plant genetic resources

123. A study on this issue was undertaken by the M.S.Swaminathan Research Foundation (MSSRF) Madras, India. The project was set for seven months and allocated \$ 20,000, with the understanding that an initial cash advance would be made upon signature by both parties. The advance was expected to cover expenditures to be incurred by MSSRF during the first three months and subsequent advances were to be made quarterly.

124. MSSRF was expected to provide an initial outline of the paper for approval by UNEP. The final document submitted to UNEP was found to be deficient in that not enough case studies had been presented. The report was, therefore, found to be lacking in information on the international situation in the areas of fair and equitable sharing of benefits, although MSSRF claimed that they had fulfilled the terms of agreement.

125. Although the self-evaluation report suggested that the terms of reference were not explicit, the Consultant believes that the fault lay in the project management for the following reasons:

(a) UNEP should have carefully scrutinized the initial outline submitted by MSSRF to ensure that international institutions and conferences cited in the terms of reference (i.e., numbers 2 and 3) were referred to in the outline; and

(b) UNEP should also have studied the draft paper submitted to ensure that all the relevant information had been included.

126. From the self-evaluation report, it does also appear that UNEP did actually disburse all the funds to MSSRF from the onset.

127. A publication dated December 1998, A Conceptual Framework for promoting Benefit-Sharing in the area of Conservation and Use of Plant Genetic Resources, was submitted to UNEP early in 1999. It has been reviewed internally and found to be satisfactory. The Consultant has also examined the contents of the document and is satisfied that the report will be valuable to Governments and other stakeholders in sharing experiences and methodologies on the issue of fair and equitable sharing of the benefits arising from the utilization of plant genetic resources.

2. Analysis of the relationship between trade and biological diversity conservation

128. The project supported the implementation of three subprogramme elements, relating to the development of policy instruments for integrated management of biological resources, including aspects of biosafety in accordance with the Convention on Biological Diversity; institutional servicing to biological diversity-related conventions; and trade and environment. The project was implemented by the International Institute for Sustainable Development (IISD).

129. According to the self-evaluation report, the study was prepared by IISD but the section where the framework was to be tested was not completed and, therefore, did not satisfy the project requirements. IISD claimed that there was insufficient data to carry out testing of the framework, and that it had

used the biodiversity country studies to obtain data. The biodiversity country studies, however, did not contain robust trade data, so IISD was required to find data from other sources to apply the framework and resubmit the final report.

130. The self-evaluation report asserts that UNEP should have carried out better preliminary studies to ensure that robust and reliable data existed in writing despite the assurance of the contractor. The view of the Consultant is that the onus lay with IISD, and that UNEP should not have been expected to undertake extensive literature review to ensure that robust and reliable data existed for that would have amounted to carrying out the project.

131. Moreover, the project document itself spells out clearly the mode of disbursement of funds to IISD. It states that an initial cash advance would be made to IISD for the first three months and that subsequent payments would be made on a quarterly basis subject to satisfactory progress in the project implementation. Section 6.1 of the project document pertains to management of the reports and also clearly spells out that IISD would submit to UNEP a mid-term report after 30 days and a terminal report after 60 days.

132. It is true that there were delays in signing the project document, but it is also true that by the time UNEP demanded the revision of the final report from IISD, all the funds had already been disbursed to IISD. This is a further demonstration of the need to ensure closer monitoring of the progress of the project in close collaboration with the Fund Programme.

133. A publication dated 1998 and entitled, A Framework for Assessing the Relationship between Trade Liberalization and Biodiversity Conservation, has since been received from IISD. The document has undergone self-evaluation and found to be satisfactory. Again, the Consultant has studied it and found the content to be appropriate. The document should, therefore, be distributed widely to Governments and their intergovernmental organizations in view of the fact that it contains valuable background information for use in policy formulation on the relationship between international trade and biodiversity conservation.

134. On the issue of project management and the disbursement of funds by the Fund Programme to the contractor, it is strongly recommended that the Fund Programme adheres to the guidelines contained in each project document, and that such disbursement be always undertaken in full consultation with the project manager.

C. Inter-agency and government cooperation

135. It was pointed earlier that the United Nations system supported strongly the implementation of the subprogramme. A number of projects were undertaken in collaboration with FAO, UNIDO, UNDP, UNESCO, WHO, DPCSD, the United Nations Economic Commission for Latin America and the World Bank.

136. A number of Governments provided resources in support of various projects and activities. Other Governments hosted various workshops, seminars, conferences and forums. The third group of Governments and their intergovernmental organizations undertook project implementation. To enable them carry out these activities, UNEP supported their project proposals submitted to GEF for resources.

137. A number of international organizations particularly IUCN, IOC, NASA, WRI, WWF and the STRI collaborated closely with UNEP in implementing the various subprogramme elements.

138. A number of institutions, for example, the MIRCENS and the Microbial Strain Data Network /Information Resource on the Release of Organisms into the Environment (MSDN/IRRO) rendered valuable support to the capacity-building of the subprogramme through training and research activities. The MSDN/IRRO, in particular, was responsible for improving access to environmental information and microbial genetic resources as well as the distribution of information on IRRO courses. The establishment of the MIRCEN network resulted in a true cooperative spirit amongst the centres in sharing experiences, information and data relevant to the conservation and utilization of microbiological genetic resources.

139. On the whole, the institutions selected to implement the various projects were sufficiently competent and carried out their work conscientiously, with the exception of the two cases cited above.

III. LESSONS LEARNED

A. Resource allocation

140. A major problem which the subprogramme faced during the biennium under review was the drastic decline in financial resources for the programme activities. The reduction in the resources initially allocated to the subprogramme by UNEP Governing Council decision 18/40 of 26 May 1995, by \$2.5 million (35 per cent), was severe. However, additional financial resources were arranged through extra-budgetary financial resources. It is to be hoped that Governments will abide by their commitment by providing the organization with resources in line with the decisions of the UNEP Governing Council. After all, the UNEP Governing Council is composed of Government representatives who ought to understand the imperative need to protect the environment not only for the present but also for the future generations.

141. On the question of the follow-up to activities undertaken, it may be recalled that UNEP spent a considerable amount of energy and resources on capacity-building. After each workshop, conference, training course, etc., participants were asked to evaluate the activity that had just been completed. However, no follow-up took place once the trainees had returned to their respective countries. It becomes very difficult to determine whether or not the activity had a multiplier effect, and to what extent those that had been trained used the knowledge acquired in training others or putting the knowledge to some practical use. There is also a need to follow up on decisions taken during the workshops, e.g., the strategies and action plans adopted by the workshop and establish what has happened to the workshop recommendations since then. In view of the global financial constraints, it may be useful to determine the impact the activities have made on Governments. The follow-up exercise should, however, not be restricted to capacity-building but could also be extended to other activities. This would enable the subprogramme to replicate successful stories elsewhere.

B. Subprogramme development and management

142. The objectives of the various activities were achievable. In general, the reports from the executing agencies arrived on time with the exception of a few. However, the late submission of papers presented at the workshops, conferences, etc., by the participants resulted in delayed report preparation and dissemination. Future organizers of such forums should insist on participants submitting draft papers to the convenors ahead of the scheduled meeting. The participation in meetings must be tied to their ability to produce papers in advance.

143. One important lesson learned from this review is that there is a definite need to re-examine the internal mechanism for coordination in project management between the programme manager and the Fund Programme. It would appear that there was inadequate internal consultation and coordination in the cases cited above.

144. It is also to be hoped that the subprogramme identified target groups or clients to whom the various publications produced were sent. A publication such as, A Framework for Assessing the Relationship between Trade Liberalization and Biodiversity Conservation would be more effective if it were circulated to certain individuals and institutions. Similarly, the publication, The Diversity of the Seas: a regional approach, would be less

attractive to scholars and policy makers involved in the conservation and sustainable utilization of forest biodiversity, hence the importance of creating a mailing list for each publication.

C. Inter-agency and government cooperation

145. The financial contribution by UNEP to the conservation and sustainable utilization of biodiversity is supposed to be catalytic in nature and therefore the activity should be able to continue even after the UNEP input has lapsed. Although the review has not exhaustively assessed the UNEP contributions to all the projects implemented during the biennium, a rough estimate indicates that they were usually higher than those of other contributors (agencies, institutions, Governments). An examination of resource contributions to some 12 projects showed that the UNEP contribution averaged 67 per cent. It is to be hoped that the UNEP partners will take up a greater responsibility in financing the projects so that the financial burden of UNEP is minimized. The approach of cost-sharing should also be extended to the recipient Governments and institutions, particularly in view of declining financial resources.

146. The role of subregional and regional institutions, particularly those of Africa, such as the Southern African Development Community (SADC), the Intergovernmental Authority on Development (IGAD), the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), the Economic Community for West Africa (ECOWAS), the Arab Maghreb Union (AMU), the African Ministerial Conference on the Environment (AMCEN), the Organization of African Unity (OAU) and the Common Market for Eastern and Southern Africa (COMESA) in training experts during the biennium was less obvious. The exception was the OAU, which was involved in the organization of a regional seminar on biotechnology strategies in Africa. It is probable that regional and subregional institutions belonging to other developing regions were used in the training of experts, trainers and decision makers. Developing countries need expertise in many fields, and it would be easier and cheaper to use, for example, SADC institutions in training SADC experts rather than using a centre located in Europe.

147. It is evident that there is a real need to develop warm working relationships with subregional and regional institutions of developing countries so that they, in turn, can support the implementation of the subprogramme's projects destined for their countries or subregions.

SECTION TWO: ASPECTS OF BIODIVERSITY SUBPROGRAMME IMPLEMENTATION
(1998-1999 BIENNIUM)

I. INTRODUCTION

148. The 1998-1999 work programme of the subprogramme on caring for biological resources is still in progress. The review will, therefore, focus on the activities and projects undertaken in the first half of 1998. In addition, the progress report on activities undertaken during the second half of 1998 has yet to be compiled.

149. The subprogramme's 1998-1999 work programme constitutes a continuation of the activities and projects of the 1996-1997 biennium. The objectives of the work programme for the 1998-1999 biennium are based on the following:

(a) Developing and promoting state of the art in scientific assessments;

(b) Formulating policy options for enhancing environmental management;

(c) Leveraging knowledge for building consensus on critical environmental problems and issues;

(d) Assisting Governments at the global, regional, subregional and national levels in formulating environmental management strategies; and

(e) Promoting more effective cooperation and coordination in the field of environment with partners within and outside the United Nation system.

150. The specific objectives of the biodiversity workprogramme for the 1998-1999 biennium are:

(i) To improve the conservation of biological diversity;

(ii) To enhance the sustainable utilization of the components of biological diversity; and

(iii) To promote equitable sharing of benefits arising from the utilization of genetic resources, including appropriate access to these resources as well as the appropriate transfer of relevant technologies.

151. As pointed out earlier, the biodiversity subprogramme is multidisciplinary, multisectoral in nature and focuses on the integrated management and sustainable utilization of biodiversity in oceans and coastal areas, freshwater ecosystems and terrestrial ecosystems. It emphasizes the need to build capacities for assessment, monitoring and management of biodiversity at the national level, while ensuring the full participation and support of local communities.

152. As in the previous biennium, collaborative arrangements were encouraged by UNEP for the promotion and implementation of conservation, integrated

management and sustainable utilization of biodiversity. Existing partnerships with key organizations such as FAO, IPGRI, MSDN, MIRCENS, UNESCO, UNDP, GEF, WRI, IUCN, WWF and SCOPE were being strengthened.

153. With regard to the financial resources made available to the subprogramme for the 1998-1999 biennium, the UNEP Governing Council had initially allocated \$5,500,000 to the subprogramme (see UNEP Governing Council decision 19/22 of February 1997). Owing to a reduction in the overall Fund Programme, the biodiversity programme was reduced accordingly from the initial allocation of \$5.5 million to \$4.44 million. The budget allocation for the 1996-1997 biennium was \$4.7 million. Additional funding (\$4.8 million) had to be secured from extrabudgetary sources for the 1996-1997 biennium.

PROGRAMME DESIGN AND ACCOMPLISHMENTS

154. The subprogramme on caring for biological resources for the period 1998-1999 consists of seven components, namely:

(a) Supporting the implementation of the objectives, measures and actions contained in the Convention on Biological Diversity, other relevant legal frameworks and Agenda 21 for biodiversity conservation and sustainable use;

(b) Promoting biodiversity assessment, research and monitoring;

(c) Promoting the sustainable management of biodiversity;

(d) Developing economic measures, tools and policy instruments for the sustainable management of biodiversity;

(e) Facilitating access to safe transfer and cooperation in the development of environmentally sound technologies for the conservation and sustainable use of biological resources;

(f) Promoting capacity-building including human resources development and institutional development to facilitate the preparation and implementation of priority programmes and activities; and

(g) Raising public awareness and dissemination of information.

155. An additional programme component under the responsibility of the Biodiversity Unit is the coordination and promotion of policy-relevant research.

156. In view of the unavailability of the progress report for the activities undertaken during the second half of 1998, this section of the report highlights the activities and projects undertaken by the subprogramme during the first six months of 1998. The section also contains the Consultants' comments on the subprogramme objectives.

(a) Supporting the implementation of the objectives, measures and actions contained in the Convention on Biological Diversity, other relevant

legal frameworks and Agenda 21 for biodiversity conservation and sustainable use

157. A number of activities were undertaken to support the implementation of this subprogramme element. With a view to implementing article 6 of the Convention on Biological Diversity, UNEP with the support of GEF launched a project on assistance for the preparation of national biodiversity strategies, action plans and first national reports to the Convention on Biological Diversity in 27 countries, in association with national Governments. Nineteen countries had implemented the project with the publication of the national biodiversity strategies and action plans.

158. In addition, UNEP continued to provide support for the preparation of biodiversity country studies. At least 14 countries had completed the final publication of these studies and eight were being printed while four were in the final stages of preparation.

159. A project on "Global Biodiversity Forum GBF (Phase II): Broadening Support for the Implementation of the Convention on Biological Diversity" was formulated to assist the civil society to continue making its contribution to the implementation of the Convention on Biological Diversity through the Forum. The project was also supported by IUCN. The Forum organized a workshop for the Asian region in March 1998 and in conjunction with the fourth meeting of the Conference of the Parties, held its tenth session in Bratislava, Slovakia.

160. A feasibility study workshop on harmonizing the information management of the biodiversity treaties was convened in Geneva in April 1998 by WCMC. A number of recommendations were made by the feasibility study, including streamlining national reporting, developing a harmonized conventions information resource as well as a lessons-learned network.

161. Support from UNEP for the implementation of the Convention on Biological Diversity and its secretariat continued to flow, including assistance in the implementation of the work programme of the Convention; assistance in the preparation of documents for the Convention meetings and its organs; provision of staff to assist the Convention meetings and provision of legal advice on various matters, as appropriate. UNEP provided substantial support to the Convention secretariat during the fourth meeting of the Conference of the Parties held in Bratislava.

162. Furthermore, UNEP is the lead agency for two programme elements of the IFF, namely, the underlying causes of deforestation and forest degradation, and the needs and requirements of countries with low forest cover. Working in partnership with UNEP and Governments, non-governmental organizations have organized a global workshop on underlying causes of deforestation and forest degradation to be held in Costa Rica. Other players in the process include indigenous peoples and international organizations. Questionnaires have been sent by UNEP to non-governmental organizations and Governments to solicit information on the underlying causes of deforestation and forest degradation using the diagnosis kit developed by UNDP.

163. The activities and projects described above are essentially similar to those described in Section one of this report. It is, however, important to note that the 1998-1999 work programme is more focused in that, instead of providing services to international biological diversity-related conventions, the thrust here is on serving the Convention on Biological Diversity. The activities and projects undertaken are consistent with UNEP priorities for

the 1998-1999 biennium as provided in decision 18/1 of the UNEP Governing Council adopted at its eighteenth session on 26 May 1995 on monitoring the status of the global environment through gathering and dissemination of reliable environmental information.

164. In order to assess the effectiveness, efficiency and impact of the activities on biodiversity monitoring, it would be ideal to undertake a critical analysis of the results filtering in from Governments and other relevant institutions. Given that biodiversity monitoring is an on-going process, the effectiveness, utility and impact of the activities need to be assessed at the country level. It may be recalled that this project evolved as part of the preparatory work leading to the signing of Convention on Biological Diversity, hence the need to examine the results of the 27 GEF supported countries as well as the other ten which did not receive support from GEF.

(b) Promoting biodiversity assessment, research and monitoring

165. To support the implementation of this subprogramme component, a number of activities were initiated and/or carried out. The issue of the Clearing-House Mechanism was discussed at the tenth session of GBF under the heading "How the UNEP/GEF Biodiversity Data Management (BDM) Project can contribute to the CHM."

166. As its contribution to the fourth meeting of the Conference of the Parties, UNEP provided support to WCMC for the preparation of a document on "Freshwater Biodiversity: a preliminary global assessment".

167. Following a spate of forest fires in Indonesia, which threatened the ecologically rich forests of the country, UNEP developed a project on emergency-response to combat forest fires in South-East Asia, which was approved by GEF in April 1998. The project was aimed at coordinating international efforts in addressing emergency situations arising from the Indonesian forest fires, and assisting South-East Asian countries in coordinating their regional efforts to mitigate the short and long-term impacts of forest fires. A forest fire-fighting workshop was held in Geneva in April 1998 convened by UNEP and United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). The workshop focussed on, inter alia, practical measures for improving short-term fire fighting efforts, as well as the development of medium-and long-term action programmes to tackle the problem and address root causes and possible remedies.

168. In collaboration with the International Centre for Integrated Mountain Development (ICIMOD), UNEP developed pilot models on integrated management of the Himalayan ecosystems. The objective was to identify viable options for integrated management and sustainable development of the Himalayan ecosystem. The project will also train local communities and farmers to utilize and manage natural resources sustainably.

169. Working also in collaboration with the World Intellectual Property Organization (WIPO), UNEP developed a project document to carry out on-site traditional knowledge documentation studies, and, inter ail, study the impact of intellectual property rights systems and traditional knowledge on the conservation and sustainable use of biological diversity and the equitable sharing of benefits derived from its use.

170. The development and establishment of a clearing-house mechanism was a decision taken at the second meeting of the Conference of the Parties held in

Jakarta in 1995. As pointed out in Section one of this report, five countries had already benefited from the Clearing-House Mechanism.

171. The Indonesian forest fires project is a problem-targeted activity, which calls for practical measures to mitigate against forest fires. It is too early to discuss the impacts of the project in other countries of South-East Asia or other regions for that matter. It is, however, critical to unravel and address the root causes of forest fires.

(c) Promoting sustainable management of biodiversity

172. A memorandum of understanding was signed between UNEP and WCMC in which the latter was to prepare a report on biodiversity issues of small island developing States, illustrating the global importance and vulnerability of SIDS biodiversity as well as providing recommendations for international efforts required to assist SIDS countries.

173. In the area of ICRI, a number of activities were undertaken to strengthen it. In this regard UNEP continued to develop a regional rapid assessment methodology for coral reef management in Eastern Africa.

174. A number of activities were undertaken jointly with IPGRI, FAO and the Beijing MIRCEN - on crops, livestock and microbial genetic resources threatened with erosion. UNEP collaborated with IPGRI on the implementation of a project on partnership in capacity-building for sustainable national plant genetic resources programmes. It also collaborated with FAO on the implementation of a project on information dissemination and training for technology transfer in domestic animal genetic resources. The implementation of a project on support for training workshops on microbial biofertilizers and plant molecular biology and biotechnology was being jointly implemented by UNEP and the Beijing MIRCEN.

175. A symposium on the values of plants, animals and microbes to human health, was held in April 1998, to examine the vital role the Earth's biological diversity plays in maintaining human health. The symposium was attended by a multidisciplinary group of experts (scientists, environmentalists, physicians and other health professionals) to alert the public on the dangers and threats to human health posed by the destruction of biodiversity. It was supported, inter alia, by UNEP, Harvard Medical School and the American Museum of Natural History.

176. Support from UNEP was given to the biodiversity programme in Europe for the conservation and sustainable use of biological resources with emphasis on Eastern Europe.

177. Funding was received from GEF for the UNEP/SCOPE project on the development of best practices and dissemination of lessons learned for dealing with the global problem of alien species that threaten biological diversity. The objective of the project is to examine current tools and approaches that are utilized to recognize, evaluate and mitigate against invasive species in order to determine best practices and to disseminate this information. This project takes a comprehensive approach to the invasive species problem, i.e., a scientifically-based global strategy and action plan. The specific aspects of the project for which GEF funding was requested relate, however, only to a portion of the global strategy for dealing with invasive species.

178. The activities relating to ICRI were discussed in Section one of this report. It may be recalled that the methodology for rapid coral reef assessment in Eastern Africa was being undertaken jointly by UNEP and IUCN in Mozambique.

179. The joint activities conducted by UNEP and IPGRI on plant genetic resources (crops), UNEP and FAO on domestic livestock and by UNEP and the Beijing MIRCEN on microbial genetic resources are, as shown in Section one of this report, ongoing. It may be recalled that the regular publication, Animal Genetic Resources which focuses on sustainable development and conservation of domestic livestock is published under the joint auspices of UNEP and FAO.

180. The Consultant did not see the proceedings of the symposium on the value of plants, animals and microbes to human health. It is likely that the volume is still in preparation. A good effort was made to bring together a multidisciplinary group of experts to debate the issue of biodiversity loss in relation to human health. This is a volume which will need to be distributed widely when it becomes available.

181. The biodiversity programme in Europe is an ongoing activity. It was noted that a number of activities were supported by UNEP during the previous biennium for the implementation of the UNEP policy on conservation and sustainable use of biological resources particularly in Eastern Europe.

182. The UNEP/SCOPE project on alien invasive species is also a continuation of previous efforts. The medium-size project was approved by GEF in February 1998. Many countries had expressed support for the initiative. The eradication of alien species which threaten ecosystems and habitats, stems from article 8(h) of Convention on Biological Diversity.

183. In collaboration with the Mexican National Institute of Ecology and National Commission for the Knowledge and Use of Biodiversity, UNEP was preparing to implement the project on the pilot case studies on market-based incentives. The outcome was to be reported to the fifth meeting of Conference of the Parties to the Convention on Biological Diversity.

(d) Developing economic measures, tools and policy instruments for sustainable management of biodiversity

184. A regional workshop to be held in Africa was being organized by UNEP on the economic value of biodiversity. Funds had also been given to the Regional Office for Latin America and the Caribbean (ROLAC) to conduct a study on the relationship between free trade policies and biodiversity conservation and sustainable use.

185. It is expected that the participants in the workshop on economic valuation of biodiversity will, on their return to their respective countries, introduce and/or strengthen economic measures and tools in their activities towards the conservation and loss of biodiversity.

(e) Facilitating access to safe transfer and cooperation in the development of environmentally sound technologies for conservation and sustainable use of biological resources

186. Two training activities were conducted under the sponsorship of UNEP in biotechnology safety and environmentally sound biotechnology. A regional symposium on agro-technologies based on biological nitrogen fixation for desert agriculture was conducted at the Faculty of Agriculture, Cairo University. Information dissemination and training for technology transfer in domestic animal genetic resources was supported by UNEP and FAO and resulted in an increased number of people trained in animal genetic conservation activities. UNEP also provided resources for training activities in taxonomy and ex-situ conservation.

187. The preparation of national biosafety frameworks in the context of the UNEP International Technical Guidelines for Safety in Biotechnology was being carried out in 18 countries under the support of UNEP and GEF. Eight regional workshops on biosafety had also been planned.

188. In March 1998, regional consultations on the UNEP multi-year programme on capacity-building and regional cooperation on biosafety in Central and Eastern Europe were held in Oegstgest, the Netherlands. The meeting resulted in the exchange of views, knowledge and experiences.

189. In February 1998, UNEP convened a workshop in the margins of the ad hoc Working Group on Biosafety at which details of the UNEP/GEF Pilot Biosafety Enabling Activity Project were presented and discussed. The project had been approved by GEF in November 1997 for the sum of \$2.7 million. Project activities commenced in April 1998 in 18 countries. A steering committee to oversee the execution of the Pilot Biosafety Enabling Activity Project was established and charged with the responsibility of preparing a synthesis report on the project in which recommendations for future work would be made.

190. The MIRCENS were established in the 1970s and have formed their own network. They have made great strides in the development of rhizobia which is used for the inoculation of various leguminous crop plants instead of the polluting inorganic fertilizers.

191. The preparation of national biosafety frameworks is an ongoing activity in support of Chapter 16 of Agenda 21. The UNEP International Technical Guidelines for Safety in Biotechnology were produced in 1996. The impact of this activity in the participating countries is not well known. Numerous workshops were, however, carried out in the 1996-1997 biennium and an additional eight had been planned for 1998.

(f) Promoting capacity-building including human resources development and institutional development to facilitate the preparation and implementation of programmes and activities

192. To support the implementation of this subprogramme element, a number of training activities, which have already been listed, were held.

(g) Raising public awareness and dissemination of information

193. Some of the activities supporting the implementation of this programme component included:

(i) Finalization of the publication Cultural and Spiritual Values of Biodiversity. The volume has not yet been published. Resources are being sought for its publication;

- (ii) Preparation of a brochure on biodiversity; and
- (iii) Creation of a website by WCMC to highlight the potential impacts of the forest fires in Indonesia on the biological diversity in South East Asia to the general public.

I. BIODIVERSITY MANAGEMENT AND IMPLEMENTATION WITHIN
THE NEW UNEP STRUCTURE (2000-2001 BIENNIUM)

194. As part of its restructuring process, UNEP has made drastic changes to its environment programme. The new structure responds to changing institutional, programmatic and budgetary conditions. It focuses on the UNEP mandate and is expected to respond better to the needs of countries as well as being more cost-effective. The programme will be implemented in six divisions as follows:

- (a) Environmental conventions;
- (b) Policy development and law;
- (c) Environmental assessment and early warning;
- (d) Regional cooperation and representation;
- (e) Industry technology and economics;
- (f) Communication and public information

195. The biodiversity programme will be operating on the basis of this new structure as from the 2000-2001 biennium

196. Up to 1998, a number of programme units including Water Branch, Biodiversity, Desertification Control/Programme Activity Centre, Assessment, Climate, etc., constituted the core programme areas of UNEP. The year 1999 is, therefore, a transition year in which all the 1998-1999 activities are expected to be completed before the move to the new structure in the new millennium.

197. During the transition year (1999), all staff were placed in their new divisions from where they are expected to complete the various activities of the 1998-1999 biennium under the supervision of the "theme leaders" or task managers. The distribution and implementation of the biodiversity activities and projects in the new divisions are shown in Table 2.

Table 2: Implementation responsibilities relating to biodiversity activities of the 1998-1999 programme of work by new divisions in 1999

<u>Activity/Project</u>	<u>Division</u>
1. Support to the Convention on Biological Diversity and other legal frameworks	Policy development and law
2. Promote biodiversity assessment, research and monitoring	Environmental assessment and early warning, also, Policy development and law and Communication and public information
3. Promote sustainable management Of biodiversity	Policy development and law and Communication and public information
4. Development of instruments (economic measures and tools) for sustainable development	Policy development and law and Communication and public information
5. Facilitate access to environmentally sound technologies for conservation and management of biodiversity	Communication and public information
6. Capacity -building for implementation of priority programmes in biodiversity	Communication and public information
Increase public awareness for the Conservation and management of biodiversity	Communication and public information

198. As expected there have been teething problems in the implementation of the biodiversity subprogramme within the new structure particularly during the transition year due to a variety of reasons. It is to be hoped that solutions will be found in the coming months to the current implementation challenges. There is, however, a need to strengthen the office of the theme leader with a view to enhancing the coordination of the biodiversity activities and projects. Failure to do so may result in the implementation of the activities in a disjointed and disorganized manner.

199. It is also hoped that UNEP will continue to respond positively to the new and emerging environmental issues. Some of the emerging biodiversity issues, which will require priority attention in the new structure, are:

- (a) Biodiversity and trade;
- (b) Economic policy instruments for biodiversity management;

(c) Fair and equitable sharing of benefits from the use of biodiversity resources;

(d) Biotechnology and biosafety;

(e) Targeted capacity;

(f) Public awareness and information; and

(g) Forest principles.

II. A SUMMARY OF RECOMMENDATIONS AND THE WAY FORWARD

Finding	Recommendation
Project coordination	
<p>Inadequate internal coordination of some project activities between project manager and the Fund Programme</p>	<p>There is need to harmonize the disbursement of funds by the Fund Programme to the contractor, in relation to programme management as set out in the project document, including receipt of satisfactory reports pertaining to the project implementation. Payment of the total sum at the onset to the contractor must be avoided.</p>
Programme management	
<p>The development and management of the biodiversity programme has been found to be satisfactory from a sectoral angle. What is not certain is how the new "functional structure" of UNEP will handle the emerging environmental issues in contrast to the regular issues.</p>	<p>The Division of Environmental Policy Development and Law has been charged, <u>inter-alia</u>, with the responsibility of developing and articulating policy positions in response to emerging environmental issues. UNEP must, however, continue to respond positively to the following emerging biodiversity issues:</p> <ul style="list-style-type: none"> (a) Biodiversity, trade and environment; (b) Alien species and global taxonomy schemes; (c) Biotechnology and biosafety; (d) Economic policy instruments for biodiversity management; (e) Fair and equitable distribution of benefits arising from use of biodiversity resources; (f) Targeted capacity building; and (g) Forest principles

Environmental impact	
No clear follow-up mechanism on activities already completed has been established by UNEP at the national and/or subregional levels.	There is need for UNEP to establish an appropriate follow-up mechanism on activities or projects which have already been implemented. Such evaluation will assist in organizing and replicating successful stories elsewhere. Performance indicators (e.g., ability of countries to prepare national biodiversity conservation policies; ability of countries to use economic measures, environmental management tools or policy instruments for sustainable management of biodiversity) should be appraised through follow-up mechanisms.
Collaboration with Governments and their intergovernmental organizations	
There was less direct involvement by subregional or regional intergovernmental organizations of developing countries in the implementation of biodiversity projects and activities. There was also less involvement by UNEP regional offices.	There is need for UNEP to establish and/or strengthen partnerships with intergovernmental institutions particularly those in developing countries. This will result in UNEP projects being supported by the subregional institutions and also serve to promote and enhance the UNEP image.
Prioritization of work programme	
Prioritization of work programme did not receive adequate attention	Prioritization of work programme is essential so that in the event of a decline in resource allocation, only those critical and most important activities and projects are carried out. This is not to discourage project development, because there are occasions when more resources are available than worthwhile activities and projects for implementation.

Programme integrity	
<p>The biodiversity programme is well balanced and integrated and geared towards the conservation, utilization and sharing of benefits arising from the use of Biodiversity. The question is whether the programme soundness and coherence will remain intact in the new UNEP structure.</p>	<p>For the new UNEP functional structure to become operative in the 2000-2001 biennium, this cohesion must be maintained and strengthened. This will entail flexibility on the part of the new programme managers instead of rigidity. It will also mean more and regular consultations amongst individuals implementing the various components of the biodiversity projects in spite of being located in different Divisions. It may also mean strengthening the office of the theme leader for the coordination and harmonization of biodiversity activities and projects.</p>

Annex

PUBLICATIONS AND PAPERS IN 1996

	Title	Produced by	Financed by	Language
1.	Case Studies on Genetic Erosion Indicators - Part A Prepared by IPGRI, Rome, Italy February: 1996	UNEP/IPGRI	UNEP/IPGRI	E
2.	Case Studies on Genetic Erosion Indicators - Part B Prepared by IPGRI, Rome, Italy February: 1996	UNEP/IPGRI	UNEP/IPGRI	E
3.	LABS 2 Biodegradation and Biodeterioration in Latin America	UNEP/UNESCO FEPAGRO/UFRGS	UNEP/ICRO-	E
4.	Support to Guatemala-MIRCEN for Research and Training in Ecological Bioprocessing and Biotechnology for Clear Production: Recommendations For Standards in Biodegradability Methodology Prepared by: ICAITI, Guatemala, February 1996	Guatemala-MIRCEN	UNEP	E
5.	Animal Genetic Resources Information - 17 FAO, Rome 1996	UNEP/FAO	UNEP/FAO	E
6.	Animal Genetic Resources Information - 18 FAO, Rome 1996	UNEP/FAO	UNEP/FAO	E
7.	Building Institutions for Biodiversity Management: The INBio Pilot Project in Costa Rica INBio-UNEP International Workshop for the English-speaking Caribbean Region Santo Domingo, Heredia, Costa Rica, January 1996	INBio/UNEP	UNEP	E
8.	UNEP International Technical Guidelines for Safety in Biotechnology	UNEP	UNEP	E/F/S/R/A/C
9.	UNEP's Forest Policy and a Proposed Action Programme for the period 1996-2000 August 1996	UNEP	UNEP	E

PUBLICATIONS AND PAPERS IN 1996

	Title	Produced by	Financed by	Language
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10.	Programme of the Conservation of Nation and Cultural Values in Forest Districts	Min. of Env. Protection, Natural Resources and Forestry of Poland, UNEP	UNEP	E
11.	Report on Mycological Exploration to Inner Mongolia, and Northeastern China, MIRCEN China, Beijing, February 1996	UNEP	UNEP	E
12.	Report on Mycological Exploration to Inner Mongolia and Northeastern China, MIRCEN China	UNEP	UNEP	E
13.	Report on Plant Genetic Engineering Project, Beijing Laboratory of Plant Biotechnology and Institute of Microbiology, Chinese Academy of Sciences	UNEP	UNEP	E
14.	World Watch List for Domestic Animal Diversity, 2 nd Edition FAO/ROME, May 1996	UNEP/FAO	FAO/UNEP	F
15.	Guide to Information Management - in the Context of the Convention on Biological Diversity, WCMC/UNEP, 1996	UNEP/WCMC	UNEP/ (UNEP/GEF Project)	E
16.	Final Report and Proceedings of the Conference on Biological Diversity, its Conservation and Sustainability in the Arab World UNEP/ROWA Reports and Publications series 1, 1996	UNEP/ROWA	UNEP/ROWA	E
17.	The Pan-European Biological and Landscape Diversity Strategy	Council of Europe, UNEP, European Centre For Nature Conserv.	Min. of Agri. Nature Mangmt And Fisheries of The Netherlands	E, F

PUBLICATIONS AND PAPERS IN 1996

Title	Produced by	Financed by	Language
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18.	Framework for the National Biodiversity Strategy in the Slovak Republic	Min. of the Env. Of the Slovak Republic, UNEP	UNEP	E
19.	Tropical Forest Canopy Programme	UNEP/STRI	UNEP/STRI	E

PUBLICATIONS AND PAPERS IN 1997

Title	Produced by	Financed by	Language
1. Biological Diversity of Lebanon Comprehensive Report (+B Technical Annexes). Prepared by the Ministry of Agriculture of Lebanon.	Min. of Agriculture/ UNEP	UNEP/GEF	E, F, A

January 1997.

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|----|---|--|--|------|
| 2. | Georgian Biodiversity Country Study Report. Prepared by the Ministry Of Environment of Georgia (MEG) and The Noah's Centre for Recovery of Endangered Species (NACRES) April 1997. | MEG/NACRES/UNEP | UNEP/GEF | E |
| 3. | Towards improved policy making for natural resources and ecosystem management in Sub-Saharan Africa June 1997. | ICRAF/UNEP | UNEP/ICRAF | E, F |
| 4. | Proceedings of the Regional Meeting of the Convention on Biological Diversity in Central and Eastern European countries: Implementation of The Convention and Preparation for the Third Meeting of the Conference of the Parties, Bratislava, 30 September - 2 October 1996 (in print 1997) | UNEP/SCBD/Slovak Ministry of Environment | | E |
| 5. | Proceedings of the 2 nd Central and Eastern European Conference for Regional And International Cooperation on Safety In Biotechnology, 16-18 October 1996, Smolenice, Slovakia. Printed in Vienna, 1997 | Min. of Housing, Special Planning and the Environment, The Netherlands, The Slovak Academy of Science, Institute Of Ecobiology, Slovakia, Federal Ministry of the Environment, Youth And Family Affairs, Austria | Govt. of the Netherlands, Govt. of Austria | E |

PUBLICATIONS AND PAPERS IN 1997

Title	Produced by	Financed by	Language
6. Coastal and Marine Ecosystems in Pan-European Biological and Landscape Diversity Strategy-	UNEP	-	E
	A keynote address (1997)		
7. The Pan-European Biological and	Council of Europe,	Min. of Agriculture	E

	Landscape Diversity Strategy - in print (1997)	UNEP, European Centre for Nature Conservation	culture, Nature and Fisheries of the Netherlands	
8.	Criteria and Indicators for Sustainable Forest Management for Dry-zone Africa	UNEP/FAO	UNEP/FAO	E
9.	Negotiating a Sustainable Future for Land	UNEP/FAO	UNEP/FAO	E

PUBLICATIONS AND PAPERS IN 1996
MAJOR STUDIES, PAPERS AND REPORTS IN 1996

	Title	Produced by	Financed by	Language
1.	Secretary-General's Report on IPF Workprogramme Element 1.5: Needs and requirements of Countries with Low Forest Cover	IPF/UNEP	ODA/UNEP	E
2.	Papers on the relationship between UNEP and CITES, UNEP and CMS	UNEP	UNEP	E
-	Background paper on how UNEP has contributed to CITES since its Association with UNEP;			

- Background paper with proposals for improving the relationship Between UNEP and CITES;
 - Background Paper on UNEP's relationship with Migratory Species Convention
3. Meeting Report -
Planning Meeting on the Conservation of Biological Diversity in the Wildlands AND Protected Areas in the Arab States, Rabat: 26-29 December 1995 (issued in 1996) ALECSO UNEP E
 4. A Framework for Action for Protected Areas in the Afrotropical Realm issued in 1996) IUCN UNEP E/A
 5. A Revised Continental African Rhinoceros Status Summary and Action Plan (Final Draft) (issued in 1996) IUCN UNEP E
 6. An Action Plan for Asian Elephant Conservation and Management (Draft) (issued in 1996) IUCN UNEP E

MAJOR STUDIES, PAPERS AND REPORTS IN 1996

Title	Produced by	Financed by	Language
7. ESTUDIO NACIONAL SOBRE LA DIVERSIDAD BIOLÓGICA EN LA REPUBLICA DE CUBA (Cuba Biodiversity Country Study Report)	National Biodiversity Centre, Institute of Ecology & Systematic Carr. De Verona Km 3.5 A.P. 8010 CP 10800 La Habana, Cuba	GEF/UNEP	S
8. Final Draft GBA Stand Alone Volume on Human Values of biodiversity (Peer Review at a Workshop on 2-3 October 1996 at Meeting University, U.K., for further improvement of the text)	ELCI	UNEP	E
9. Status of the Development of Biodiversity Strategies and Action Plans in Europe and Identification of Needs for Assistance.	UNEP/IUCN	The Netherlands	E

10.	Report of the International Workshop to Follow-up on the UNEP International Technical Guidelines for Safety in Biotechnology	UNEP	UNEP	E/F/S/A/R/C
11.	Report of the FAO/UNEP Expert Meeting on Criteria and Indicators for Sustainable Forest Management in the Near East, FAO Regional Office For the Near East, Cairo, 1996 (Meeting held in Cairo, Egypt 15-17 October, 1996	UNEP/FAO	UNEP/FAO	E

MAJOR STUDIES, PAPERS AND REPORTS IN 1997

Title	Produced by	Financed by	Languages	
1.	The Diversity of the Seas: a regional approach	WCMC	UNEP	E
2.	Support to the Preparation of a Diagnostic study for the San Juan River Basin	UNEP/OEA	UNEP	S
3.	Urban Air Quality in Developing Countries: Towards Sustainable Answers, April 1997	UNEP	UNEP	E
4.	Towards Implementation of the UNLEP International Technical Guidelines for Safety in Biotechnology in Central and Eastern Europe - a keynote address - (in "Proceedings of the 2 nd Central And Eastern European Conference for Regional and International Cooperation on Safety in Biotechnology", 16-18 October 1996 Smolenice). Printed in Vienna, 1997.	UNEP	Govt. of the Netherlands, Govt. of Austria	E

5. UNEP's Global Biodiversity Assessment - a keynote address -
(in "Proceedings of the Monte Verita Conference on Assessment
of Biodiversity for Improved Forest Planning", Ascona,
Switzerland, 7-11 October 1996). Printed in 1997

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