

**GLOBAL
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Global

Support for the Preparation of Biodiversity Country Studies

Project Document



Preface

This is the project document for the project entitled Support for the Preparation of Country Studies on Costs, Benefits and Unmet Needs of Biodiversity Conservation, approved by UNEP on March 31, 1992. The revised (October 1992) GEF Financed Budget is attached as Annex I. For practical purposes, the status of the Biodiversity Country Studies, as of October 13, 1992, has been included as Annex II. Annex III gives a list of focal points for the respective countries participating in the country studies. Annex IV gives the composition of the International Multi-disciplinary Advisory Team for the first tranche of Biodiversity Country Studies. The composition and programme of work of the four Panels of Experts for the revision of the Guidelines on the country case studies have been included as Annex V.

SECTION 2

Background and Legislative Authority

2.1. Background

2.1.1. Introduction

- a) The case for conserving biological diversity on economic as well as scientific grounds is well established. Biological diversity is essential for sustainable development, continued functioning of the biosphere, and human survival. But the magnitude of the problem is still far from fully appreciated by decision makers or supported by strong public opinion. All too often only lip service is paid to conservation requirements in development activities. The lack of sound national biodiversity strategies and action plans, adequate trained manpower, and funding to protect and manage biodiversity, are major impediments to conservation.
- b) The need for concerted international action to protect biological diversity was recognized in the *Environmental Perspective for the Year 2000 and Beyond*, and the report of the World Commission on Environment and Development. This need was formalized and re-emphasized by UNEP Governing Council decisions 14/26 of 1987, 15/34 of 1989 and SS II/5 of 1990. Decision 15/34 called for the establishment of an *Ad Hoc* Working Group of Experts on Biological Diversity to consider, within a broad socioeconomic context, the technical content of a new international legal instrument, and other measures that might be adopted for the conservation of the biological diversity of the planet. It also called for the establishment of an *Ad Hoc* Working Group of Legal and Technical Experts on Biological Diversity with a mandate to negotiate an international legal instrument on biological diversity based on the work of the technical group.
- c) In discussing global conservation needs and costs, the Technical Group identified the need to carry out an in-depth study on the cost of basic conservation needs identified by them, taking into consideration the level of funding currently provided by existing development and other assistance programmes for the purpose of conserving biodiversity in developing countries. Initial cost estimates suggest that \$1 billion-\$10 billion are needed yearly over the next ten to fifteen years to meet priority conservation needs identified by the Working Group. This was clearly beyond the level of existing multilateral and bilateral assistance provided to developing countries for the conservation of biological diversity (\$228 million, of which \$58 million was in multilateral aid and \$170 million in

bilateral aid).

- d) To sharpen the estimates of projected costs, the Technical Group as well as the *Ad Hoc* Working Group of Legal and Technical Experts on Biological Diversity (now renamed the Intergovernmental Negotiating Committee (INC) for a Convention on Biological Diversity), recommended the preparation of country specific case studies taking into consideration the full range of biodiversity and ecosystems, the benefits generated, as well as the costs incurred, in investing in biodiversity conservation. It is expected that these studies will be comprehensive, providing data not merely on the order of magnitude but also on the status of biodiversity and the way in which biological diversity is estimated and valued. Such information will assist national governments in their own assessment and development of national conservation strategies and action plans and will facilitate political agreement on the final figure of global costs and funding needs of the currently negotiated international Convention on Biological Diversity and its future protocols.
- e) The GEF/Scientific and Technical Advisory Panel (STAP) *Ad Hoc* Working Group on Biodiversity, at its meeting in June 1991, pointed out the importance of conducting the country studies. Their opinion was that ideally such studies should be made in all countries and that without them, investments in biodiversity could only be of limited value.

2.1.2. Data harmonization

To ensure data quality and harmonization, and comparability of the results obtained from different countries:

- i) Guidelines, including methodology and format for the preparation of these studies, were prepared, distributed to selected experts and governments for comments and advice, and reviewed and finalized by a small multi-disciplinary team of experts hosted by the Government of Canada in Montreal, in April 1991. Having taken into consideration the views and comments received,¹ the Guidelines have been distributed to the countries concerned.
- ii) An International Steering Committee and Advisory Team (including biologists, resource economists, data analysts and management experts) have been established by UNEP to provide advice and guidance to countries involved in the preparation of the studies, and to ensure common

¹ Guidelines are in the process of being revised and can be obtained at request upon completion from the Coordinator, Biological Diversity, UNEP.

understanding and uniformity in the application of the Guidelines. A list of the names and Terms of Reference are attached.

- iii) A Memorandum of Understanding (MOU) was concluded between UNEP and WCMC to support individual countries in the preparation of the studies through, *inter alia*:
- Transfer of relevant biodiversity data
 - Provision of relevant bibliographic material
 - Review of appropriate information held by other organizations outside the country
 - Provision of expertise in the field of biodiversity information analysis and management
 - Participation in Advisory Team missions to the countries
 - Work with individual countries to review information availability, flow, and validity; and to recommend the development of an information strategy and assist in its implementation.

The MOU is expected to be revised from time to time to ensure the continuity of WCMC participation in the exercise, as appropriate, subject to the availability of funds.

2.1.3. Project context

The main thrust of the subproject is to provide support and assistance to selected developing countries to undertake the preparation of country studies. This will include the undertaking of several biodiversity related activities which are at present beyond their means in terms of funds and human resources. These will be carried out within national programme frameworks, and through the provision of funds and technical assistance coordinated at the national level. The outputs from these country studies will achieve both national and global objectives. At the national level, they will provide information on the status of biodiversity and priorities for conservation. They are expected to identify where resources are needed most, define the best opportunity to take action, and help the countries concerned in the preparation of their national strategies and action plans for the effective conservation of biological diversity. At the international level, they will contribute to the achievement of a global system of representative protected areas and *ex situ* conservation measures, and the adoption of a financing mechanism for the current negotiations on a global convention on biodiversity and its future protocols. They are also important for

facilitating the sharing of information and for revealing difficulties a country may be having in biodiversity monitoring, data collection, management, and economic evaluation.

2.1.4. Development Dimensions

The project will contribute to the incorporation of the environmental and sustainability concepts into national development plans, taking into consideration people's needs. The loss of biodiversity is not an environment issue alone, but also a development concern, affecting agriculture, forestry, industry, health, and other sectors. All cultivated plants and domestic animals originate from wild species, and it is imperative to protect their wild relatives as the basis for continuing genetic selection and improvement. This is also important for forestry and fisheries production. The genetic material contained in domesticated varieties of crops, trees, and animals, and their wild relatives, is essential for breeding programmes by which genes are incorporated into commercial lines for the continued improvement in yields, nutritional quality, flavour, pest and disease resistance, and responsiveness to different soils and climates. Furthermore, many undiscovered or undescribed species may be of significant value as sources of food, fibre, drugs, chemicals, or other materials. In medicine, of all drugs derived from plants, only ten are synthesized in the laboratory, with the rest being extracted from plants, animals, and microbes. The emergence of biotechnology clearly enhances rather than diminishes the need to maintain the richest possible pool of wild genes.

2.1.5. Rationale for GEF support

Most of the world's biological diversity is located in developing countries which lack national strategies and action plans for its conservation and rational use. They do not have the necessary funds to prepare such studies in the light of other and more pressing needs. Even in situations where the long-term national economic benefits of actions to conserve biodiversity within a national plan of action are clear, developing country governments are often unable to meet the short-term costs. They consider the cost of preparing country studies and hence national strategies and actions plans too high, even though they may perceive their national and international significance. They thus need additional financial assistance to develop and strengthen their capability to undertake country studies.

2.1.6.

Countries selected for the preparation of case studies include: the Bahamas, Brazil, Colombia, Costa Rica, Guyana, Indonesia, Kenya, Madagascar, Malaysia, Mexico, Mozambique, Namibia, Nepal, Nigeria, Papua New Guinea, Peru, Poland, the Solomon Islands, Thailand, Uganda, and Zaire. Of these, four are as of now supported by bilateral funding (Norway, Canada, Sweden, and the United Kingdom

are providing financial support for the preparation of country studies in Indonesia, Costa Rica, Uganda, and Kenya respectively). Preparation of country studies in the Bahamas, Nigeria, Poland and Thailand has been initiated with limited financial support from UNEP (Project FP/6105-90-01). Furthermore, Japan and Germany are providing financial support for country studies in Malaysia and Guyana respectively through UNEP, under project FP/6105-90-01. Such bilateral and multilateral financial resources are expected to cover a small part of the necessary studies. Additional financial assistance is expected to be forthcoming to these countries within the framework of this project. In addition, Australia, Canada, Germany, Sweden, and the United Kingdom have also been requested to prepare biodiversity country studies.

2.1.7.

These countries were selected by the Executive Director of UNEP in consultation with the INC for a Convention on Biological Diversity and the Steering Committee and Advisory Team, taking into consideration the full range of biodiversity and ecosystems.

2.2. Legislative Authority

UNEP GC 16/15, programme element 3.4, paragraph 1, calling for the preparation of country case studies on biological diversity status and conservation costs.

GEF Participants' Meeting in Geneva, December 1992.

SECTION 3

Objectives and Achievement Indicators

3.1. Objectives

3.1.1. Short-term objectives

To enhance the capacity of developing countries to review the status of their biodiversity and to identify, at the country level (in the light of social, economic, environmental and other objectives of each country) the basic needs for the effective conservation and rational use of national biodiversity at a desired level, and the necessary supportive measures and costs to meet those needs, as well as the benefits associated with the implementation of these measures.

To encourage the generation and use of knowledge on the distribution and status of global biodiversity and to raise international and national concerns for its conservation and rational use.

To contribute to the coordinated efforts, at the international, national and regional levels, aimed at achieving a global system of representative protected areas and *ex situ* conservation measures for the effective conservation of global biological diversity.

To assist countries in arriving at a realistic assessment of total costs and unmet financial needs of global biological diversity conservation and rational use.

To facilitate agreement on the final figure of global costs and funding needs for the negotiations for a global Convention on Biological Diversity and its future protocols.

3.1.2. Long-term objective

To ensure the protection and conservation of the broadest possible range of global biodiversity and its rational use.

3.2. Achievement Indicators

An increase in the number of states which have prepared biodiversity country studies and biodiversity conservation strategies and action plans.

Development and entry into force of a financial mechanism for the current negotiations for a Convention on Biological Diversity.

An increase in the number of national programmes for surveying, monitoring and conserving biological diversity.

SECTION 4

Outputs, Follow-up Activities, Inputs and Assumptions

4.1. Outputs

Refined UNEP Guidelines for the preparation of biodiversity country studies.

Twenty-one country case studies on the status of biological diversity and the estimated costs of its conservation and rational use. The studies are expected to contribute:

- i) baseline information on biodiversity in twenty-one countries;
- ii) biological data on species and ecosystems and their *ex situ* and *in situ* management;

- iii) defined priority areas for the effective conservation of biological diversity identified in twenty-one countries;
- iv) a realistic order of magnitude of the costs of biodiversity conservation and its rational use in some eighteen to twenty countries;
- v) data/information on the economic commodity value of species and service values of ecosystems;
- vi) trained national personnel; and
- vii) national biodiversity monitoring units that could be developed into monitoring centres.

4.2. Use of Outputs

Information gathered through the country studies will be used to facilitate agreement on the funding needs of the currently negotiated Convention on Biological Diversity and its future protocols. In addition, the country studies will be used by technical and scientific personnel and policy and decision makers as a basis for establishing priority areas for biological diversity conservation, for national environmental planning and resource use, for institutionalization of national biodiversity strategies and action plans, and their implementation in concert with national and international institutions within the framework of existing biodiversity related agreements and the current negotiations for a Convention on Biological Diversity. The country studies are also expected to engender understanding among decision makers, educators, economists, social scientists, and the general public, of the importance of safeguarding biological diversity, and thereby to engage their support in biodiversity conservation, in the incorporation of biodiversity values in national accounting, and in securing additional parties to biodiversity related international and regional agreements and action plans.

4.3. Follow-up Action

The country studies exercise could prove to be a useful foundation upon which to build a national capacity for institutional/human capacity-building. The outputs will be used for the development and strengthening of existing National Biodiversity Units (NBUs) to function as national biodiversity monitoring units. These could continue their data management activities and contribute to the establishment of a global biodiversity information network and the generation of harmonized data from different countries.

The outputs are also expected to be linked to the implementation of the measures

specified by biodiversity related conventions and action plans, the World Resources Institute (WRI)/UNEP/International Union for the Conservation of Nature and Natural Resources (IUCN) Global Biodiversity Strategy and Decade Action Plan, and the current negotiations for a Convention on Biological Diversity and its future protocols. The terminal report will also include recommendations and proposals regarding future follow-up activities to consolidate the following results:

- Comprehensive data presented in a standardised format on the status, threats, management and utilisation of biodiversity at the country level
- A methodology for qualifying financial costs and benefits of biodiversity conservation moulded by practical experience
- Harmonised estimates of costs, benefits and unmet financial needs for biodiversity conservation at the country level
- An in-country capacity for monitoring the status and economic benefits of biodiversity
- The nucleus of a global network of national biodiversity monitoring centres that can be expanded with subsequent tranches of country studies.

4.4. Activities

i) Coordination of the country studies

The legal mechanism through which country studies will be undertaken will be MOUs. Individual MOUs will be concluded between UNEP and the NBU of each of the participating countries. The NBU will be required to submit half-yearly progress reports, quarterly expenditure accounts, final expenditure statements, draft country studies, and terminal reports, using formats established by UNEP.

NBUs will be established in each selected study country in order to coordinate and oversee the preparation of the studies. The NBU will be responsible for the coordination of the implementation at the national level of the activities specified in the MOU (as indicated below) and for liaising with UNEP and other relevant institutions and organizations.

At the subproject level, coordination will be the responsibility of UNEP. It will be through the Coordinator and Officer-in-Charge of Biological Diversity, who is also the Secretary of the joint Steering Committee and International Multi-disciplinary Advisory Team of Experts, which was established by the Executive

Director of UNEP in July 1991.

The preparation of the country studies will be undertaken, in close cooperation with the WCMC, along the Guidelines designed for the purpose. The International Steering Committee and the Advisory Team, established to advise countries on the procedures, will provide guidance.

Regular joint meetings of the Steering Committee and the Advisory Team will be held to review progress made in preparation of the studies. NBUs will be invited to participate in these meetings. Members of the Advisory Team and UNEP will pay visits to designated countries of focus to liaise and maintain continuous dialogue between UNEP and the NBUs.

The inclusion of the Vice-Chairman of GEF/STAP in the membership of the Steering Committee will establish a link with both STAP and GEF.

ii) Workplan:

- a) The main project activities to be carried out by each participating country using UNEP Guidelines include:
 - i) establishment or identification of an NBU with experienced staff to coordinate and oversee the preparation of the studies (see page 8 of the Guidelines);
 - ii) identification or development and adoption of methodologies for:
 - 1) defining, assessing and calculating biodiversity values for national economies;
 - 2) estimating investment costs and unmet conservation needs; and
 - 3) generating knowledge and data on direct and indirect economic benefits arising from biodiversity conservation;
 - iii) overview of biodiversity status and identification of gaps in knowledge;
 - iv) identification of sites, species and genomes for effective conservation;
 - v) identification of measures required for effective conservation and rational use of each of the identified species or areas of significant biodiversity;

- vi) estimation of the total cost of implementing the identified measures;
 - vii) calculation of the net benefits foregone by embarking on the proposed measures;
 - viii) estimation of the total benefits of each of the proposed measures;
 - ix) determination of the current expenditures on measures identified for effective conservation and rational use of biodiversity;
 - x) determination of projected future unmet financial needs (likely incremental costs that will be associated with implementation of the identified measures);
 - xi) preparation of a draft national biodiversity strategy and action plan taking into consideration the results of the country study and the objectives and actions of the Global Biodiversity Strategy (WRI/IUCN/UNEP, 1992); and
 - xii) presentation of the results in the form of a case study report along UNEP Guidelines and its submission to UNEP, together with an executive summary of the results obtained.
- b) The main activities to be carried out by the UNEP Secretariat include:
- i) negotiation and conclusion of necessary agreements with participating countries, WCMC, and other institutions, organizations and individuals that will be involved in the exercise with the purpose of ensuring coordination of activities at the national level by the NBUs and at project level by UNEP;
 - ii) preparation of the work programme of the Steering Committee and the Advisory Team, and identification of countries of focus for each member;
 - iii) organization and convening of the meetings of the Steering Committee and the Advisory Team, as well as their expert missions, to assist participating countries in the preparation of the studies;
 - iv) provision of support to the Steering Committee and Advisory Team and follow-up action subsequent to their meetings;
 - v) provision of biodiversity baseline information/data available at WCMC to participating countries;

- vi) provision of scientific and technical backstopping, as and when requested by countries;
- vii) monitoring of the preparation and implementation of the studies and ensuring compliance with their objectives;
- viii) analysis of implementation difficulties and the initiation of remedial action;
- ix) coordination of action required for the preparation, appraisal and finalization of the studies;
- x) preparation of an executive summary of the results of the country studies and its submission, together with the studies, to the INC for the Convention on Biological Diversity and to GEF;
- xi) revision of the Guidelines in the light of practical experience gained;
- xii) day-to-day management of the project;
- xiii) periodical UNEP/UNDP/World Bank joint review of project implementation; and
- xiv) preparation of half-yearly progress and financial reports.

4.6. Inputs

Professional and support personnel from participating countries, organisations and institutions.

Information on, *inter alia*, biodiversity data; wildlife trade; habitats, protected areas and critical sites; bibliographic sources; and conservation status listing from WCMC.

Financial support from the GEF.

Computer facilities and other equipment for collection, collation, analysis, and management of data/information.

4.7. Assumptions

GEF, UNEP and WCMC can continue their financial/technical support over the period of this project.

Adequate skills and infrastructures will be developed at the national level.

Governments are motivated for conservation of biological diversity.

SECTION 5

Institutional Framework, Evaluation and Budget

5.1. Institutional framework

The project will be implemented by UNEP, Office of the Environment Programme (OEP), in association with national governments of participating countries.

All correspondence regarding substantive and technical matters of the project between NBUs and UNEP should be addressed to:

Mr. H. Zedan
Coordinator
Biological Diversity
UNEP
P.O. Box 30552
Nairobi
Tel: 520 600/230 800

Fax: 2542 219 170 (direct)/2542 226 886/2542 226 890
Telex: 220 68
Cable: UNITERRA, Nairobi

with a copy to:

Mr. L.F. Guerrero
Acting Chief
Fund Programme Management Branch
Office of the Environment Fund and Administration
UNEP
P.O. Box 30552
Nairobi

5.2. Evaluation

After completion of the project, UNEP will undertake a desk evaluation of the project to measure the degree to which the short-term objectives have been achieved. This will be measured by reviewing the achievement indicators.

5.3. Budget

See Annex I.

SECTION 6

Monitoring and Reporting

Half-yearly progress reports

Within 30 days of the end of the reporting period, the Coordinator, Biological Diversity, OEP shall submit to the Chief, Fund Programme Management Branch, half-yearly progress reports as at June 30 and December 31.

Terminal report

Within 90 days of completion of the project, the Coordinator, Biological Diversity, OEP shall submit to the Chief, Fund Programme Management Branch, a project terminal report.

Substantive reports

Copies of the country studies produced under the project will be submitted to the Chief, Fund Programme Management Branch.

UNEP will reproduce the country studies in-house. These will be distributed to countries involved and to members of INC, WCMC and/or other relevant parties upon request. UNEP hereby affirms itself as sole copyright-holder of the text of country studies, and equally expresses its intention to consider the text for inclusion in its publications programme.

(GEFBUJ.WK1)

GEF FINANCED BUDGET

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	1992		1993		1994		1995		TOTAL
	w/m	CC	w/m	CC	w/m	CC	w/m	CC	
10 PROJECT PERSONNEL COMPONENT									
1100 Project Personnel [Title & Grade]									
1101 Biologist D1	7	62,708	12	107,500	12	107,500	2	17,916	295,624
1102 Programme Officer Economist P3/4 ***	4	17,367	12	58,500	12	58,500	2	9,750	144,117
1103 Fund/Admin Officer P3/4	7	51,334	12	88,000	12	88,000	2	14,666	242,000
1199 Total		131,409		254,000		254,000		42,332	681,741
1200 Consultants		100,000		50,259		20,000		10,000	180,259
1201 CONSULTANT'S Assistance Ctry. Studies		100,000		50,259		20,000		10,000	180,259
1299 Total		100,000		50,259		20,000		10,000	180,259
1300 Administrative support (Title & Grade)									
1301 Admin-Assistant G8	10	12,584	12	17,200	12	17,500	2	2,516	49,800
1302 Senior Secretary G7	10	11,750	12	16,200	12	16,500	2	2,350	46,800
1303 Secretary G6	10	10,916	12	15,200	12	15,500	2	2,184	43,800
1399 Total		35,250		48,600		49,500		7,050	140,400
1600 Travel on official business		30,000		40,000		50,000		0	120,000
1601 UNEP Staff Travel		30,000		40,000		50,000		0	120,000
1699 Total		30,000		40,000		50,000		0	120,000
1999 Component total		296,659		392,859		373,500		59,382	1,122,400

*** Recruited at P2 level as at Sept 1992

	1992		1993		1994		1995		TOTAL
	w/m	CC	w/m	CC	w/m	CC	w/m	CC	
20 SUB-CONTRACT COMPONENT									
2200 Sub-contracts (MOUs/LAs for SO)									
2201 MOUS CTRY.Studies		500,000		1,500,000		1,000,000		0	3,000,000
2299 Total		500,000		1,500,000		1,000,000		0	3,000,000
2999 Component total		500,000		1,500,000		1,000,000		0	3,000,000
30 MEETING COMPONENT									
3300 Meetings/conferences, etc.									
3301 Org.Mtgs.of Steer.Comm.x3 for 1st 3 yrs.		35,000		36,000		36,000		0	107,000
3302 Org.Mtgs.of Advisory.Grp.x3 for 1st 3 yrs.		166,500		184,500		184,500		0	535,500
3399 Total		201,500		220,500		220,500		0	642,500
3999 Component total		201,500		220,500		220,500		0	642,500
40 EQUIPMENT AND PREMISES COMPONENT									
4100 Expendable equipment (item under \$500)									
4101 Computer Software Disks+Accessories		1,500		1,500		1,500		0	4,500
4102 Computer Software Programmes		1,000		1,400		1,000		0	3,400
4103 Office Supplies		3,000		2,400		2,000		0	7,400
4199 Total		5,500		5,300		4,500		0	15,300
4200 Non-expendable equipment									
4201 Laptopsx3 Toshiba 2000sx		13,500		0		0		0	13,500
4202 Printersx3 Hp laser jet		9,000		0		0		0	9,000
4203 Photocopier x1 np1215		4,800		0		0		0	4,800
4204 Fax x1 Rank xerox 7033		4,500		0		0		0	4,500
4299 Total		31,800		0		0		0	31,800
4300 Premises									
4301 Rent of Offices		6,600		9,000		9,000		2,000	26,600
4399 Total		6,600		9,000		9,000		2,000	26,600
4999 Component total		43,900		14,300		13,500		2,000	73,700

50 MISCELLANEOUS COMPONENT	1995		1994		1993		1992		TOTAL
	w/m	CC	w/m	CC	w/m	CC	w/m	CC	
5100 Operation and maintenance of equipment									
5101 Computers maint.		0	1,250	1,250	1,250	1,250	1,000	1,000	3,500
5102 Photocopier maint.		0	1,250	1,250	1,250	1,250	1,000	1,000	3,500
5103 Fax.maint.		0	1,000	1,000	1,000	1,000	3,000	3,000	3,000
5104 Freight of Equipment		0	0	0	0	0	0	0	3,000
5199 Total		0	3,500	3,500	3,500	3,500	6,000	6,000	13,000
5200 Reporting costs		0	40,000	40,000	40,000	40,000	20,000	20,000	100,000
5201 Publication & Distribution of Country Studies		0	4,500	4,500	4,500	4,500	4,400	4,400	13,400
5220 Unspecified		0	44,500	44,500	44,500	44,500	24,400	24,400	113,400
5299 Total		0	89,000	89,000	89,000	89,000	68,800	68,800	356,000
5300 Sundry		500	2,000	2,000	6,000	6,000	6,000	6,000	14,500
5301 Communications		0	3,000	3,000	5,000	5,000	12,500	12,500	20,500
5302 Other		500	5,000	5,000	11,000	11,000	18,500	18,500	35,000
5399 Total		500	10,000	10,000	22,000	22,000	48,900	48,900	161,400
5999 Component total		500	53,000	53,000	59,000	59,000	1,090,959	1,090,959	5,000,000
99 GRAND TOTAL		61,882	1,660,500	1,660,500	2,186,659	2,186,659	1,599,552	1,599,552	5,000,000
Previous Budget Schedule		63,548	1,670,500	1,670,500	1,666,400	1,666,400	1,599,552	1,599,552	5,000,000

1992	1993	1994	1995	TOTAL
1,090,959	2,186,659	1,660,500	61,882	5,000,000

Annex II

STATUS OF BIODIVERSITY COUNTRY STUDIES

Background

The world's biological resources are being depleted at an ever increasing rate, exacting a toll on the well-being of people in both industrialized and developing countries. Biodiversity is being lost as a result of society's consumption patterns and its failure to put an economic value at the right time to biological resources, and the failure of national accounting systems to reflect the cost of damaged ecosystems; in other words biodiversity is currently undervalued and, in many cases, unsustainably used. This situation needs to be redressed.

First tranche of country studies

Countries in the first tranche were selected by the Executive Director of UNEP in consultation with the IGC to be as representative as possible of the full range of biodiversity and ecosystems and so provide lessons for future efforts in these areas.

Countries which agreed to undertake biodiversity case studies include: Australia, the Bahamas, Brazil, Canada, Colombia, Costa Rica, Germany, Guyana, Indonesia, Kenya, Madagascar, Malaysia, Mexico, Mozambique, Namibia, Nepal, Nigeria, Papua New Guinea, Peru, Poland, the Solomon Islands, Thailand, Uganda, and Zaire. They cover a wide range of ecosystems: tropical as well as temperate forests and grasslands; arid and semi-arid lands; deserts; tundras; mangroves, coral reefs and marine ecosystems; swamps, marshes and freshwater habitats; and heaths and moorlands.

Ten of the above mentioned countries which submitted their biodiversity country study reports are: the Bahamas, Canada, Costa Rica, Germany, Indonesia, Kenya, Nigeria, Poland, Thailand and Uganda. These countries include both developing and developed countries, representing a wide spectrum of socioeconomic levels, biodiversity and biogeographical realms. For these ten pioneer countries, a synthesis report was prepared. It outlines the status of their biodiversity, the measures that need to be taken for its conservation and sustainable use, estimates of the costs of implementing these measures, and estimates of the benefits that accrue or would undoubtedly accrue by conserving biodiversity and so avoiding the costs of inaction. Copies of the Synthesis Report of the first tranche of country studies can be obtained from the Coordinator, Biological Diversity, UNEP.

The results of the above mentioned studies are organized in the Synthesis Report in five sections. Section I forms the introduction and provides the background. Section II examines the status of biodiversity in the ten countries with the aim of identifying measures for its effective conservation. Section III details the measures identified by the countries. Section IV estimates the total costs of these measures as well as unmet costs to the degree possible, given the limitations on time and availability of information. Broad scenarios are proposed for

extrapolating a global figure of incremental costs for developing countries on the basis of the funding needs of the seven developing countries included in this study. Section V gives crude indications of the actual and projected benefits of biodiversity conservation measures and the likely costs of inaction.

It must be stressed that the country studies are diverse and focus on the differing national conditions. The seven developing countries in this first tranche constitute a small global sample, and sustainable utilization has been treated as an aspirational goal, not as a concrete measure. Nevertheless, valuable insights are provided into the problems that could be faced by countries in developing national biodiversity conservation programmes, and in estimating costs and benefits. Further country studies are clearly needed using the Guidelines, which have been revised in the light of experience gained in this first round of studies. A summary of the findings of this first tranche of the exercise is provided in the Country Fact Sheets that follow.

Revision of Guidelines

The experience gained in this first tranche has led to revisions in the Guidelines. These revised Guidelines are intended to assist countries to focus on the requirements of the Convention on Biological Diversity and *Agenda 21*, and institute actions compatible with those proposed in *Global Biodiversity Strategy* and *Caring for the Earth - A Strategy for Sustainable Living*.

For the purpose and process of revision of the Guidelines, UNEP established four small Panels of Experts to revisit, review and revise various portions and aspects of the previous Guidelines. The four panels are: Biodiversity Status Group, Biodiversity Economic Costs Group, Biodiversity Economic Benefits Group, and the Biodiversity Strategies and Action Plans Group. Their composition is shown in Annex V. The draft reports prepared by the four panels will be part of the documentation for the International Conference on Biodiversity Country Case Studies - Tools for Preparation of National Action Plans, to be held in San Jose, Costa Rica, November 16-20, 1992.

Countries are expected to use the revised Guidelines for either fine-tuning existing country studies or preparing new ones.

Second and further tranches of country studies

Additional countries are now being identified for the second tranche so that data becomes available for at least 35 developing countries by 1993.

Under the framework of the Convention on Biological Diversity, all countries are ultimately expected to undertake biodiversity country studies.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

THE BAHAMAS

Land area:	11,409 km ² .
Population:	250,000, increasing at a rate of 1.97% per annum.
Species diversity:	6,206 species reported (3,675 animal species, 1,624 plant species, and 907 microbial species), based on external work and literature. Inventory incomplete.
Ecosystem diversity:	A complete and thorough mapping and assessment of ecosystems is yet to be done. The following are reported in order of importance: marine ecosystems, coral reefs, pine forests, wetlands, and mangroves.
Threats to biodiversity:	Very little investigations on species diversity. This paucity of information is itself perceived as a threat, in addition to institutional weaknesses in the overall management and monitoring of the biodiversity of the country.
<i>In situ</i> conservation:	Many small protected areas of high biodiversity value set aside mainly as breeding sites for endangered bird and reptile species. Other sites have been proposed as additional protected areas or extensions to the existing ones.
<i>Ex situ</i> conservation:	Very few existing facilities.
Annual costs of conservation:	\$110 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	Tentatively valued at \$1,553 million per annum. A more rigorous estimation to follow once methodologies are agreed.
Unmet needs:	\$84 million per annum to implement a proposed programme of limited measures for the conservation and rational utilization of biodiversity.

Status Report: Country Fact Sheets**COSTA RICA**

Land area:	51,000 km ² .
Population:	3.1 million, increasing at a rate 2.4% per annum.
Species diversity:	84,392 species described, 77% of which are arthropods. High degree of regional endemism especially among insects, plants, birds and mammals. Innovative use of "parataxonomists" underway to complete the inventory.
Ecosystem diversity:	There are 12 life zones and 8 transitional zones. Ecosystems encountered, in order of importance, include: forests (various types of tropical forests), agro-ecosystems, wetlands, mangroves, and marine regions.
Threats to biodiversity:	For biodiversity in the protected areas, the major threat is the lack of adequate financial resources to consolidate the recently proposed National System of Conservation Areas. For biodiversity outside protected areas, the threats are, in order of importance: transformation or conversion of habitats and ecosystems for economic uses, species over-exploitation, pollution, natural disasters (earthquakes), and unchecked tourism.
<i>In situ</i> conservation:	An impressive system of protected areas covering around 27% of the territory. These are in the process of being consolidated into the National System of Conservation Areas under one management authority. Actions include the establishment of corridors and the purchase of protected lands still in private hands.
<i>Ex situ</i> conservation:	Facilities are underdeveloped and play only a limited role due to the lack of established programmes. Some joint ventures spearheaded by the National Biodiversity Institute (INBio) are underway.
Annual costs of conservation:	\$100 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	Tentatively valued at \$1,563 million per annum. A more rigorous estimation to follow once methodologies are agreed.
Unmet needs:	\$81 million per annum.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

GUYANA

Country study underway. Facts listed below based on interim report.

Land area:	216,000 km ² .
Population:	754,768 (1990), decreasing at a rate of 0.015% per annum due to the high rate of emigration (estimated at 3% of the economically active population per annum).
Species diversity:	8,432 species described (2,296 animal species, 5,667 plant species, and 469 microbial species). Inventory incomplete for all taxa. Endemism status still unclear.
Ecosystem diversity:	70% of Guyana is covered by tropical rainforest of the Amazon type. Other ecosystems encountered include marine regions, wetlands, and savanna.
Threats to biodiversity:	So far, little threat was recorded because of the relative isolation of the hinterland where biodiversity is highest and because of the minimal population pressure due to the negative growth rate and outward migration. However, the construction of the Brazil-Guyana Highway may change these trends and initiate development activities which have adverse impacts on biodiversity.
<i>In situ</i> conservation:	Presently only one area representing a negligible proportion of the territory is legally protected. Plans are underway for the development of a more substantial Protected Area System.
<i>Ex situ</i> conservation:	Existing facilities have seed banks, and germplasm and microbial culture collections. The variety of species represented is very limited.
Annual costs of conservation:	Still being assessed.
Estimate of crude benefits:	Still being assessed.
Unmet needs:	Still being assessed.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

ANNEX II

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INDONESIA

Land area:	1,910,000 km ² .
Population:	183 million (1990), increasing at a rate of 1.9% per annum.
Species diversity:	64,685 species reported (33,600 animal species, 27,585 plant species, and approximately 3,500 microbial species). A very high level of endemism, particularly of mammals, birds, reptiles, insects and higher plants. Inventory work still incomplete for most taxa.
Ecosystem diversity:	At least 47 distinct natural ecosystems, the major types being, in order of importance: forests (a wide variety of tropical forests), marine regions, grasslands, wetlands, mangroves, and arid and semi-arid zones.
Threats to biodiversity:	Population growth and maldistribution; forest conversion; ignorance or lack of appreciation of traditional land tenure rights; pollution of wetland and coastal ecosystems; damage to coral reefs due to various factors; damage to mangroves caused by various factors; over-harvesting of species for trade and other uses; introduction of exotic species; and institutional inability to monitor threats and ecosystems changes.
<i>In situ</i> conservation:	A gazetted protection system of terrestrial, coastal and marine conservation areas covers around 8% of Indonesia and includes samples of all major habitat types on all the major islands and island groups. Additional sites are being considered for gazettement. However, much of the current gazetted system exists only on paper and many of the reserves concerned have little or no effective management.
<i>Ex situ</i> conservation:	Insufficient facilities in view of Indonesia's wide range of geographically dispersed biodiversity.
Annual costs of conservation:	\$290 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	\$6,362 million per annum. A more rigorous estimation to follow once methodologies are agreed.
Unmet needs:	\$230 million per annum to finance certain activities under the Indonesian Tropical Forestry Action Programme and the Biodiversity Action Plan.

Status Report: Country Fact Sheets**KENYA**

Land area:	582,646 km ² .
Population:	24 million (1991), increasing at a rate of 3.7% per annum.
Species diversity:	34,863 species reported (24,995 animal species, 6,817 plant species, and 1,841 microbial species). Inventory incomplete.
Ecosystem diversity:	19 recognized natural biotic communities, the major types being, in order of importance: arid and semi-arid zones; agro-ecosystems; grasslands; wetlands; forests (tropical and afro-montane); coral reefs and other marine regions; and mangroves.
Threats to biodiversity:	In order of importance: transformation or conversion of habitats and ecosystems for economic uses mainly due to demographic forces; species over-exploitation for trade and other uses; natural disasters (e.g., droughts); pollution (e.g., eutrophication); recreational uses (e.g., tourist pressure); and introduction of exotic species.
<i>In situ</i> conservation:	A network of protected parks and reserves covering around 10% of the territory. However, many of these protected areas are ecologically unbalanced, being biased towards savanna or semi-arid areas. Proposed extensions include forest regions in particular. Innovative action needed to increase use of wildlife resources to benefit neighbouring human populations so as to mitigate the pressure of encroachment.
<i>Ex situ</i> conservation:	Underdeveloped and underutilized. New or expanded facilities required, especially for agricultural, livestock, and forest genetic resources.
Annual costs of conservation:	\$160 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	Not attempted because of lack of agreed methodologies.
Unmet needs:	\$53 million per annum to cover existing biodiversity conservation programmes and fund additional programmes identified in the country study.

Status Report: Country Fact Sheets**NIGERIA**

Land area:	924,000 km ² .
Population:	120 million, increasing at a rate of 2.5% per annum.
Species diversity:	28,660 species described (22,090 animal species of which 20,000 are insects, 5,081 plant species, and 1,489 microbial species). Inventory incomplete.
Ecosystem diversity:	In order of importance: grasslands, agro-ecosystems, wetlands, and forests (mainly tropical rainforest).
Threats to biodiversity:	In order of importance: transformation or conversion of habitats and ecosystems for economic uses due to demographic pressures; species over-exploitation for trade and other uses (especially wildlife, timber, and various plants); epidemic of diseases in simplified and attenuated ecosystems; and erosion, flooding and desertification.
<i>In situ</i> conservation:	Protected areas cover around 5% of the territory. However, encroachment is widespread and monitoring inadequate. Additional land needs to be purchased for conservation purposes, especially in the Sahel zones. Existing areas do not have effective management plans.
<i>Ex situ</i> conservation:	Many facilities located mostly on university campuses. The general view however, is that inadequate funding in these facilities is leading to a decline in both species variety and quantity. There is also a lack of coordination among various <i>ex situ</i> conservation programmes.
Annual costs of conservation:	\$593 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	Tentatively valued at \$9,993 million per annum. A more rigorous estimation to follow once methodologies are agreed.
Unmet needs:	\$327 million per annum to support ongoing measures or to implement new ones aimed at strengthening conservation and the sustainable use of biodiversity in the country.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

PERU

Country Study underway. Facts listed below based on interim report.

Land area:	1,284,640 km ² .
Population:	22 million, increasing at a rate of 2.3% per annum.
Species diversity:	47,280 species described (26,990 plant species, 19,595 animal species, and 695 microbial species). Inventory incomplete for most taxa, particularly for invertebrate and microbial species. Peru is considered an area of very high species endemism.
Ecosystem diversity:	Rainforest covers over 50% of the territory. Other ecosystems include grasslands, wetlands, arid and semi-arid zones, deserts and marine regions.
Threats to biodiversity:	Not yet reported.
<i>In situ</i> conservation:	Gazetted protected areas, rich in biodiversity, account for approximately 7% of the territory. The current level of protection accorded to these areas is reported as negligible.
<i>Ex situ</i> conservation:	There are many existing facilities but no information has been made available on their actual status.
Annual costs of conservation:	Still being assessed.
Estimate of crude benefits:	Still being assessed.
Unmet needs:	Still being assessed.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

POLAND

Land area:	312,700 km ² .
Population:	38 million.
Species diversity:	46,903 species recorded (30,000 animal species, 15,000 plant species, and around 2,000 microbial species).
Ecosystem diversity:	The major ecosystem types include: forests (a mosaic of deciduous and coniferous forest types, including monocultures), grasslands, wetlands, marine regions and agro-ecosystems.
Threats to biodiversity:	The biggest problem is pollution which is threatening all forms of life in Poland, followed by the lack of funds to implement the necessary remedial measures.
<i>In situ</i> conservation:	Protected areas cover less than 5% of the territory, and face constant and severe pressures from the surrounding transformed areas.
<i>Ex situ</i> conservation:	The available facilities are insufficient to cater for all projected activities for the protection of biodiversity.
Annual costs of conservation:	\$800 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	\$52 million per annum. To be reassessed once methodologies are agreed.
Unmet needs:	\$100 million per annum for priority projects and \$1.8 billion per annum for all projected activities related to conservation and the sustainable use of biodiversity in the country.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

SOLOMON ISLANDS

Country Study underway. Facts listed below based on interim report.

Land area:	27,556 km ² .
Population:	330,000, increasing at a rate of 3.5% per annum.
Species diversity:	6,469 species recorded (2,832 animal species, and 3,637 plant species). Inventory far from complete, with birds being the group most studied. Very high level of endemism, especially among plants and all classes of vertebrates.
Ecosystem diversity:	84% of the land is covered by tropical rainforest. Other ecosystems encountered are shrub communities, mangroves, and agricultural areas. Being an island, many types of marine ecosystems are represented.
Threats to biodiversity:	Population pressure; species over-exploitation (e.g., unsustainable logging, agriculture, wildlife trade and fishing); introduction of exotic species (e.g., feral animals and exotic weeds); economic requirements for export income; natural calamities (cyclones and floods in particular); and the potential threat from global warming for low-lying coastal areas.
<i>In situ</i> conservation:	Existing protected areas cover only 1% of the territory. None of the formally established areas provides for effective conservation, being neither managed nor recognized by the customary land owners.
<i>Ex situ</i> conservation:	Very few existing facilities, not commensurate with the number of endangered species in the country.
Annual costs of conservation:	Still being assessed.
Estimate of crude benefits:	Still being assessed.
Unmet needs:	Still being assessed.

Status Report: Country Fact Sheets**THAILAND**

Land area:	514,000 km ² .
Population:	55 million, increasing at an annual rate of 1.9%.
Species diversity:	122,000 species described (19,600 plant species, 86,900 animal species, and 15,700 microbial species). High level of endemism in plant species. Inventory still incomplete, especially for the flora.
Ecosystem diversity:	A wide range of ecosystem types and biotic provinces comprising, in order of importance: forests (various types of tropical forests), grasslands, marine ecosystems, wetlands, and mangroves.
Threats to biodiversity:	Thailand views the lack of taxonomic expertise to carry out a complete survey of its biodiversity as a major threat, since it prevents the adoption of informed and appropriate measures. Such measures would have to be accompanied by effective changes in policies and traditions.
<i>In situ</i> conservation:	An impressive system of protected areas covers around 15% of the territory and harbours most of the endangered species. However, not all ecosystem types are adequately represented or protected in parks and nature reserves. There is a steady erosion occurring at the borders of protected areas due to encroachment; better management strategies for both the protected areas and the buffer zones are called for.
<i>Ex situ</i> conservation:	Inadequate, underdeveloped, underfunded and understaffed.
Annual costs of conservation:	\$60 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	Tentatively valued at \$57,065 million per annum. A more rigorous estimation to follow once methodologies are agreed.
Unmet needs:	\$60 million needed per annum for implementation of specific conservation measures.

BIODIVERSITY COUNTRY STUDIES

Status Report: Country Fact Sheets

UGANDA

Land area:	236,000 km ² ; land-locked.
Population:	17 million, increasing at an annual rate of 2.9%.
Species diversity:	18,430 species recorded (11,230 animal species, 6,879 plant species, and 321 microbial species), with many endemic species, especially in lakes and mountainous areas. Inventory incomplete for most taxa, particularly microbial species.
Ecosystem diversity:	The geographical location of the country gives it a fair share of many of Africa's biogeographical zones which converge and overlap in Uganda. The ecosystems and habitats, ranked by area, are as follows: savanna, agro-ecosystems, open waters, forests (tropical and afro-montane), and wetlands.
Threats to biodiversity:	Degradation of ecosystems due to years of civil unrest has accelerated the loss of biodiversity in the last two decades. Priority must be given to the development and enforcement of environmental laws, land tenure and use policies, and protected areas management policies.
<i>In situ</i> conservation:	Protected areas cover around 20% of the territory. However, they have suffered neglect and degradation due to the reasons cited above. A rigorous program is needed for their restoration and protection, which in many areas remain nominal.
<i>Ex situ</i> conservation:	Very few facilities whose standards have been declining over the years due to financial constraints.
Annual costs of conservation:	\$70 million per annum; estimates based on selected sectors. Methodologies for estimating full costs are still evolving.
Estimate of crude benefits:	\$3,225 million per annum. To be reassessed once methodologies are agreed.
Unmet needs:	\$61.4 million per annum.

Annex III
NATIONAL BIODIVERSITY UNITS (NBUs)

List of Contact Persons

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* Countries which have undertaken or are currently undertaking country case studies.

Annex IV

**COMPOSITION OF INTERNATIONAL MULTI-DISCIPLINARY ADVISORY TEAM
FOR FIRST TRANCHE OF BIODIVERSITY COUNTRY STUDIES**

Steering Committee:

R. Olembo (UNEP, Chairman)
E. Ayensu (Ghana, Vice Chairman)
H. Zedan (UNEP, Secretary)
G. Olsson (Sweden)

Members:

Z.Z. Abidin (Malaysia, Biologist)
Y.J. Ahmad (Bangladesh/UNEP, Economist)
C. Amoako-Nuama (Ghana, Biologist)
B. Aylward (UK, Economist)
P. Chabeda (Kenya, Biologist)
D. Cooper (Bahamas, Biologist)
P. Dogse (Sweden/UNESCO, Economist)
F. Fillion (Canada, Economist)
R. Gamez (Costa Rica, Taxonomist)
P. Hattersley (Australia, Biologist)
A. Imevbore (Nigeria, Biologist)
A. Markandya (UK, Economist)
J. McNeely (USA/IUCN, Biogeographer)
H. Miles (USA/WCMC, Data Management)
N. Myers (UK, Economist)
A.N. Rao (Singapore, Taxonomist)
J. Whiting (Canada, Biologist)

Terms of Reference for Advisory Team for first tranche of Biodiversity Country Studies

- To ensure that UNEP Guidelines are fully understood and followed in the preparation of the country studies
- To provide advice and assistance to the NBUs in the preparation of the country studies, as and when required
- To review and maintain continuous dialogue with NBUs in the preparation of country studies
- To review the final draft of the country studies with the NBUs before delivery to the Steering Committee for final presentation.

Annex V

**GUIDELINES REVISION: COMPOSITION AND PROGRAMME OF WORK OF
PANELS OF EXPERTS**

Four Panels of Experts were established by UNEP to review the following sections of the Guidelines for the preparation of biodiversity country studies:

I. Biodiversity Data and Status

Leader: WCMC

Members: International Board for Plant Genetic Resources (IBPGR), IUCN, WRI, Worldwide Fund for Nature (WWF), Conservation International (CI), International Council for Bird Preservation (ICBP), Natural History Museum (Canada), INBio (Costa Rica), and UNEP.

This panel held a workshop at WCMC, Cambridge, UK, on October 7-9, 1992, to review a discussion paper prepared by WCMC, and finalize the revision of the section of the Guidelines for Biodiversity Data and Status.

II. Biodiversity Economic Costs Panel

Leader: Y. Ahmad (UNEP - Costs)

Members: D. Pearce (UK), C. Folke (Sweden), M. Chakraborty (India), D. Osgood (USA), and UNEP.

III. Biodiversity Economic Benefits Panel

Leader: F. Fillion (Canada - Benefits)

Members: A. Markandya (UK), P. Dogse (Sweden/UNESCO), J. McNeely (US/IUCN), M. Hannemann (USA), and UNEP.

These panels held two meetings in London, August 12-13, 1992, and in Paris, October 19-21, 1992, to review reports prepared by individual members and finalize the section of the Guidelines on Biodiversity Costs Estimation and Benefits Evaluation.

IV. Biodiversity Strategies and Action Plans

- Leaders: WRI and IUCN.
- Members: WCMC, R. McFetridge (Canada), M. Auer (Germany), S. Sastrapradja (Indonesia), B. Mbanu (Tanzania), I. Qutub (Pakistan), R. Arsenjo (Chile), INBio (Costa Rica), and UNEP.
- Correspondents: Convention on the Conservation of Migratory Species of Wild Animals (CMS), IBPGR, UNDP, WB, UN Climate Convention, R. Prescott-Allen (Canada), T. Swanson (UK), P. Jacobs (Canada), S. Eldoy (Norway), O. Nord-Varhaug (Norway), J. Spyrka (Poland), and J. Gilwica (Poland).

This panel held a meeting at WRI, Washington, DC, on September 25-28, 1992, to review reports prepared by individual members and correspondents, and to finalize this section of the Guidelines.

