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Conservation of Biodiversity in Protected Areas of Shared Priority Ecoregions of Latin America and the Caribbean

Conservation and sustainable use of tropical rainforests of Latin America and the Caribbean

This document was prepared by the Inter-Agency Technical Committee on the basis of the mandates of the Eleventh Meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean (Lima, Peru, March 1998). The work was carried out by the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP), as the lead agencies, in coordination with the Food and Agriculture Organization of the United Nations (FAO). The purpose of the document is to provide the Forum with support for discussing and approving courses of action in the sphere of the Regional Action Plan for the period 2000-2001.

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Chapter I
Conservation of Biodiversity in Protected Areas of Shared Priority Ecoregions of Latin America and the Caribbean

I. Introduction

The Ministers and Heads of Delegations of the governments present at the XI Meeting of Ministers of the Environment of Latin America and the Caribbean, held in Lima, Peru, March 10 – 13, 1998, decided to support before international financial bodies the presentation and management of the project: "Conservation of Biodiversity in Protected Areas of Shared Priority Ecoregions of Latin America and the Caribbean", considered imperative to attain the objectives of the conservation of biodiversity and sustainable development in the region. In this regard, it was recommended that the FAO, in collaboration with UNEP, UNDP and the IUCN, in conjunction with other organizations and agencies, advance on the necessary negotiations to support the countries of the region in their formulations and presentations to the Global Environment Facility (GEF).

The project seeks:

1. Institutional strengthening and development of national park services and other protected areas of Latin America and the Caribbean, based on methodological criteria, where the particularities of the most important sub-regional ecosystems of the region can be recognized through training of personnel, improvement of the management and administration of protected areas and furtherance of exchange of information.
2. Bioregional planning and management of protected areas of selected crucial ecoregions of Latin America and the Caribbean through the identification and implementation of demonstrations that include activities for public participation and environmental education and communication.
3. Strengthening of technical cooperation between the countries of the region, encouraging exchange of experiences and information that will enable harmonization of policies, criteria and tools to establish and manage protected areas.

During the first Extraordinary Meeting of the Intersessional Committee of Ministers of the Environment of Latin America and the Caribbean, held in New York, USA, Saturday, September 19, 1998, the Intersessional Committee decided to request of UNEP and UNDP that they work jointly as GEF implementing agencies to revise and verify the eventual eligibility of the above-mentioned project proposal.

During the fourth Extraordinary Meeting of the Intersessional Committee of Ministers of the Environment of Latin America and the Caribbean, held in Lima, Peru, October 2, 1999, the participating parties requested that they might continue with the necessary actions to submit the project proposals to the GEF Secretariat for approval and eventual financial aid.

II. Development of priority theme lines

Four specific projects are submitted to the consideration of the Forum of Ministers of the Environment of Latin America and the Caribbean; these will assist in obtaining additional technical assistance, mobilizing complementary financial resources and receiving support from other international bodies within the framework of the priorities identified in matters of biological diversity and protected areas in the Environmental Regional Plan of Action of Latin America and the Caribbean.

1. Conservation of biodiversity in marine protected areas of the Insular Caribbean Region

This project proposal intends to promote the development of a program that ensures the management of marine protected areas of the Insular Caribbean region, including: institutional strengthening; exchange of information; development of environmental education and training programs; the establishment of a regional financing mechanism in marine protected areas; the development and establishment of an environmental evaluation program; strengthening of non-government organizations and local communities in the decision making process and the design of pilot projects to rehabilitate selected degraded areas.

The UNEP, as a GEF implementing agency, has submitted this project to the consideration of the countries of the Caribbean, in order to receive the corresponding letters of endorsement; subsequently, the project will be submitted to the GEF Secretariat for consideration and eventual approval. To date, letters of endorsement have already been received form the following Insular Caribbean countries: Barbados, Dominica, Haiti, Jamaica, Dominican Republic and Saint Lucia. The project is also at present being considered by the UNEP's GEF Unit in Nairobi, in order to carry out the needed technical adaptations, having considered the recommendations of the countries involved, for further consideration and eventual approval by other GEF implementing agencies. We would underscore that it is necessary to have the letters of endorsement from all involved countries to implement the project proposal referred to, in order to submit it to the consideration of the GEF Secretariat for eventual financial support. The project proposal referred to in attached to this document.

2. Regional Strategy for the Conservation of Biodiversity in the Andean System of Protected Areas

In compliance with the decisions of the Forum of Ministers, UNEP has underwritten a Memorandum of Understanding, in conjunction with the FAO, in order to join efforts institutionally for the development of a proposal for a regional strategy to conserve the biodiversity of the Andean System of Protected Areas. Said technical document revises national policies and strategies; identifies the principal cross border problems and regional priorities for the conservation and sustainable use of natural resources, including defining action priorities and areas for cooperation in the planning and bioregional management of protected areas and border biological corridors, as well as a program for the exchange of information and horizontal cooperation in the Andean environ, all in the interest of reducing possible adverse effects. In like manner, a GEF project proposal has been developed concerning the conservation and sustainable use of the biodiversity of mountain ecosystems within the Andean system of protected areas. The strategy is based on the revision of existing information, such as National Biodiversity Strategies and additional information provided by the Directors of Systems of Protected Natural Areas of Andean countries. The Government of Colombia will collaborate by hosting a meeting of technical experts on the conservation of

biodiversity of the Andean System of Protected Areas. The meeting will be held in Bogota, Colombia; February 7–9, 2000, with the participation of national directors of protected areas of the countries involved, and will be later submitted to consideration during the XII Meeting of Ministers of the Environment of Latin America and the Caribbean, to be held in Barbados in March of the year 2000. These proposals are included in this document.

3. Proposal of the GEF Project (Block A) – Conservation of Biodiversity in the Gran Chaco Americano region

The FAO, in conjunction with the IUCN and the GEF Unit of the UNEP, in addition to the respective administrations of protected areas of the countries of the Gran Chaco Americano (Argentina, Bolivia and Paraguay), has been developing a project proposal to analyze the environmental problems of this subregion, and the identification and analysis of priority areas for action, including a strategy for institutional capacity building of the management of the protected natural areas, the development of an environmental training and education program and the development of a system for planning and managing critical habitats and biological corridors; the project will be submitted to the consideration of the GEF Secretariat. The project proposal is being revised by the GEF Unit of the UNDP, for future approval and eventual financial support on behalf of the GEF Secretariat. The conceptual proposal of the aforesaid project is included.

4. Establishment of a Program to Consolidate the Mesoamerican Biological Corridor

The UNDP and the UNEP, due to their status as GEF implementing agencies, expect to contribute –through this project, approved and financed by the GEF Secretariat– to the conservation and sustainable use of biodiversity in protected natural areas, within the framework of the short and long term economic development priorities of the countries that comprise the Mesoamerican region. Among other activities, the project includes: the design and implementation of a Strategic Plan of Action; harmonization of national and regional policies; the establishment of information and monitoring system; institutional capacity strengthening; the inclusion of local communities and indigenous groups; the establishment of a citizen awareness-building program and environmental education; the development of sample pilot projects. The project includes the participation of Central American countries and Mexico, and is at present in the first phase of implementation, through the establishment of a Regional Coordination Unit and the selection of technical and administrative personnel. It is important to underscore that the participating countries are implementing national initiatives to strengthen the management of protected natural areas, which will in turn contribute to the consolidation of the Mesoamerican Biological Corridor.

The UNDP, UNEP and the Environmental Department of SICA (Central American Integration System), have begun the administrative process to retain the services of an international project coordinator. This action formally starts-up project activities expected to contribute to the development of a comprehensive system for the conservation and sustainable development of biodiversity in protected natural areas within the framework of the short and long term development priorities of the countries that comprise the region of Mesoamerica. The project proposal is attached.

Chapter II
Global Environment Facility
Proposal for a PDF-A Block "B" Grant

Type of project:	**Global Environment Facility** **Proposal for a PDF Block B Grant**
Project Title:	Conservation of Biodiversity in Marine Protected Areas of the Insular Caribbean region
Countries:	Insular Caribbean countries
Eligibility:	Antigua and Barbuda (9.3.93); Bahamas (2.9.93); Barbados (10.12.93); Cuba (8.3.94); Dominica (6.4.94); Grenada (11.8.94); Guyana (29.8.94); Haiti (25.9.96); Jamaica (6.1.95); Dominican Republic (25.11.96); St. Kitts and Nevis (7.1.93); Saint Vincent and Grenadines (3.6.96); St. Lucia (28.7.93); Trinidad and Tobago (1.8.96).
GEF Focal Area:	Biodiversity
Funds Requested:	US$340,000
Co-funding:	US$10,000
Requesting Agencies:	UNEP
Executing Agencies:	IUCN Regional Office and the Secretariat of the Cartagena Convention
Local Executing Agencies:	Ministries of Environment
Duration:	12 months

I. Summary, previous support and objectives of the project

1. Background

The marine seascape of the Caribbean supports a complex interaction of three distinct ecosystems: coral reefs, mangrove stands, and sea grass beds. Distinct in their solutions to the ecological problems of obtaining nutrients lacking in warm surface waters, these tropical marine ecosystems are among the most productive in the world.

The region has a high level of biodiversity even for tropical areas. While species numbers are much lower in the insular Caribbean, in the majority of the islands especially the larger ones, there are high levels of endemism. The Caribbean overall has considerably lower generic diversity of hermatypic corals than most of the tropical

Indo-Pacific. However, it has the highest number of regionally endemic genera in the world, as might be expected in view of its geographical isolation from other major coral areas. The region is particularly rich in mollusks, and in larger crustaceans, with the second highest number of endemic lobsters. The second largest reef barrier in the world is located in the region, stretching nearly 220 km mainly off the coast of Belize and in addition the Andros barrier reef extends approximately 176 kilometers in the Bahamas.

Reefs in the Caribbean are under severe threat. Problems include coastal erosion from dredging and construction, pollution from sewage waste and fertilizers, removal of large quantities of fish (including use of toxic and hazardous materials to flush out fish) resulting changes in fish populations, as well as damage from boat anchors and recreational misuse.

In the Wider Caribbean mangroves are found on almost every coastline, although there are wide variations in mangrove coverage depending on the geographic characteristics of each island or continental area. Low-relief coastal plains with ample freshwater inflows foster the most complex and largest forests. Problems affecting mangrove ecosystems include clear-cutting for tourism development, creation of aquaculture ponds, and filling in of watersheds for development projects, causing loss of habitats.

Both mangroves and sea grasses show similar distribution patterns as related to generic richness, with the Caribbean being one of the areas of the greatest diversity. The sea grass beds stabilize bottom sediments that could otherwise damage corals. They contribute to the retardation of coastal erosion, and species such as Thalassia provide grazing for sea turtles, manatees, fish and invertebrates. The main problem affecting sea grass beds is increasing sedimentation.

Fisheries landings in the region rise steadily from around 1.5 million tonnes in 1970 to 2.6 million tonnes in 1984 and has since declined steadily to around 1.7 million tonnes in the early 1990´s. Generally, over exploitation of inshore (particularly reef) fishery resources and deterioration of inshore habitats, both around the islands and on continental shelves, has led countries to direct exploitation increasingly to offshore pelagic resources. At local scales, coastal habitat degradation, usually for coastal development and tourism, are implicated in decreases in reef fishery production.

This is also of concern as the flow of visitors to many countries is increasing. The past decade has witnessed growth in the regions tourism and industry dependent on the quality of the natural environment. Almost 60% of the world's scuba diving tours are in the Caribbean. Total stay-over tourist arrivals to the Caribbean are close to 15 million visitors per year (increasing at a yearly rate of 9%) and cruise-ship visitors are over 10 million per year.

The insular Caribbean includes nearly 35 million people with 11 million in the largest State, Cuba. Most of the economies of the countries of the region are highly dependent of their coastlines for tourism and fishing. Tourism expenditure in the Caribbean was estimated at USD$12.7 billion for 1995 an increase of almost 10% from the previous year. Estimates for tourism gross outputs in 1996 are USD$25.4 billion (25.5 of the GDP) and projected growth over the next decade is estimated at 34.6%.

The concept of protected areas is not new to the region. The very first protected areas in the insular Caribbean were established over 200 years ago out of a concern for watershed protection. Accordingly to 1982 version of IUCN system of categories to classify protected areas, there are 43 established marine protected areas in the Insular Caribbean region. There are 96 marine protected areas established in the Wider Caribbean Marine Region. Generally, two-thirds of Caribbean protected areas are not

achieving full management capacity (OAS/NPS 1988). The lack of training institutions regionally for protected areas is a major contributing factor. It should be pointed out that the majority of these areas have been declared as protected areas in the last 20 years, which indicates that they are being established at a faster rate than their management regimes. It has been documented that the costs of establishment and park management are small in relation to gross benefits associated with the park. Additionally, marine parks in the region have demonstrated that self-financing can also be achieved through diversified revenue generation strategies and that issues, such as carrying and sustainable use, cannot be overlooked in the search of revenue. However, most protected areas in the Caribbean are not adequately funded and only few have any sort of revenue generating mechanism.

From country to country, system plans have gained the respect of governments and various other organizations involved in protected areas management. System plans ensure that management objectives, specific to a particularly country, are clearly defined. System plans have been developed for several countries of the region, including Antigua and Barbuda, Dominica, Dominican Republic, and Trinidad and Tobago. System plans are currently in their final stages of development in Jamaica and St. Lucia where recommendations are already being implemented in the Guyana region there are relatively few protected areas and only Suriname has begun the process of establishing reserves.

At the regional level, progress has also been made on defining the priority areas for the effective management of the marine protected areas. In recent years the World Bank in collaboration with the IUCN and the Great Barrier Marine Park Authority developed a comprehensive report with the main objective to identify priority areas for the establishment and management of a global representative system of marine protected areas, including the Wider Caribbean region. The report identified priority actions for the establishment and effective management of marine protected areas in the Caribbean region, including those related to strengthening local capacity to manage MPAs; to identify the areas of national priority for the establishment of new MPAs; to establish effective mechanisms for stimulating and maintaining a flow of information; to develop training and education programmes; and to establish regional and national environmental funds mechanisms to improve and stabilize protected areas management.

Faced with these problems and with opportunities for guiding sustainable development, different international organizations and non-governmental organizations have been orchestrating a systematic process of institutional efforts to develop national and joint strategies for the sustainable use of natural resources and for integrated and effective environmental management of marine protected areas, such as those implemented by the US Agency for International Development to develop a strategy for training in natural resources and environment; the European Union Strategy for protected areas in the Caribbean; the activities implemented by the Canadian International Development Agency to prevent water pollution and protection of natural resources; and the initiatives developed by several international non-governmental organizations on educational activities, management of important parks, strengthening the capacity of local communities to protect natural resources, environmental assessment and infrastructure development implemented by the Nature Conservancy, the World Wildlife Fund, the Wildlife Conservation Society, Conservation International, the IUCN, the Audubon Society, among others. The many actors involved in this region and the number of different initiatives leads to the need for a much better co-ordination of information and of projects.

2. Previous Support

The Convention on Biological Diversity provides a framework for regional co-operation, especially in the establishment of systems of protected areas for *in situ* conservation and promotion of environmentally sound development around protected areas; rehabilitation of degraded ecosystems; research and monitoring and exchange of information relevant to conservation, including technology transfer and training.

In May 1994, the Barbados Declaration was signed by the 41 Small Island Developing States of the world to reaffirm the principles and commitments to sustainable development embodied in Agenda 21. Complementing the Declaration is a programme of action that includes measures for enhancing the development of integrated coastal zone planning and management, in which, the need for improved management and broader representation of marine protected areas, is clearly implicated.

The Protocol concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region adopted by governments of the region, promotes the implementation of specific projects to strengthen Wider Caribbean Parks and Protected Areas Network and to the establishment of revenue generation mechanisms, training activities, the development of regional management guidelines and activities on evaluation and assessment of protected areas.

The First Latin American Congress on National Parks and Other Protected Areas, held in Santa Marta, Colombia, in May 1997, recommended decisive action on the part of the national governments as guarantors of the conservation of their countries´ natural and cultural legacy, which as a responsibility that cannot be delegated, should be strengthened to fulfil their functions and responsibilities in the regulations and management of such areas, redoubling efforts to meet demands for environmental goods and services.

The Ministers and Heads of Delegations of the governments present at the Eleventh Meeting of Ministers of the Environment of Latin America and the Caribbean, held in Lima, Peru from 10 to 13 March 1998, decided to support the submission and promotion of a GEF project proposal to promote the conservation and sustainable use of biodiversity of the marine protected areas of the Caribbean region. They also recommended that UNEP, UNDP, IUCN, FAO, the Caribbean Environment Programme, CAMPAM and other organizations and agencies take the necessary steps to support the countries of the region in the final formulation and presentation of the project to GEF Secretariat.

3. Project Objectives

On the basis of the previous studies and regional initiatives, the GEF project will help the governments of Caribbean countries to promote environmental management and sustainable development of their natural resources, following the recommendations and principles for the preparation and implementation of a regional strategy for marine biodiversity conservation indicated in the World Bank report, the SPAW Protocol and the Convention on Biological Diversity. In its first phase, the goal will be to formulate a full scale project proposal to be developed with Block "B" funding, in order to contribute to the conservation and sustainable use of natural resources in marine protected areas of the Caribbean region. The project will be built on the multi-stakeholder, participatory planning methods and structures currently in use under the Marine Protected Areas network.

This proposal, presented for consideration under the GEF Preparation and Development Facility (PDF) Block B has the following specific objectives:

1. To develop a programme to ensure effective management of marine protected areas in the Caribbean, including the strengthening of local capacity.
2. The development of regional strategies for MPA management, information sharing and institution building.
3. To establish a regional mechanism such as regional environmental fund to improve and secure marine protected areas management.
4. To develop an environmental education and training programme for marine protected areas.
5. To develop and establish an environmental assessment programme to evaluate and prevent major environmental problems.
6. To develop an strategy to strengthen the participation of non-governmental organizations and community groups in the decision-making process.
7. To formulate pilot projects for the rehabilitation of selected degraded areas.
8. To bring the current science based knowledge to bear on the management of the marine resources of the region.

II. Expected outcomes

A full scale project document which includes the following:

1. A review of ongoing or planned MPA activities in region and the placement of the GEF project in relation to these.
2. A detailed work-plan, activities, outputs, project budget delineation of incremental and baseline funding and verifiable indicators, means of verification and assumptions for MPA management support on a regional basis.
3. Management training plan.
4. A directory of stakeholders, governmental and non-governmental organizations, and relevant international organizations and centers of excellence to participate in the execution of the project.
5. A list of national, regional and international co-financing US sources to complement incremental and baseline funding.

III. Planned activities to achieve outcomes

The following activities will be carried out:

1. Conduct a workshop with governmental, non-governmental organizations, stakeholders, relevant regional and international organizations and project team, to develop the priority activities through which the objectives above mentioned will be achieved and to identify additional activities required to fully address gaps on the conservation and sustainable use of biodiversity in marine protected areas.
2. Conduct a workshop to review the role of science in the management of protected areas in the region and make recommendations of how management-science linkages can be improved.

3. Definition of the project's execution and implementation modalities, including mechanisms for stakeholder participation in project management, decision-making and monitoring.
4. Review of current and planned programs in the area.
5. Based on outputs and activities and costing of inputs, preparation of the project budget and delineation of incremental and baseline funding.
6. Identification of national and regional co-financing US$sources to complement incremental and baseline funding.
7. Formulation of a full-scale project document including project's objectives, outputs, activities, as well as objectively verifiable indicators, means of verification and assumptions for presentation and eventual approval of the GEF Secretariat.

IV. Eligibility

All Caribbean countries have established governmental entities responsible for the implementation of their countries´ national environmental policies and also for coordinating the fulfillment of obligations under the Convention on Biological Diversity. It is very significant to note that Caribbean countries constitute most of the early ratifies of the Convention. This project will therefore interact significantly with the initiative for preparing the National Biodiversity Strategies, the Conservation and Sustainable Use of the Mesoamerican Barrier Reef System, all of which already have support from the GEF and other on-going regional initiatives implemented by several international organizations.

The present request satisfies and accords with the approach laid out in the document "Operational Strategy of the Global Environmental Facility: Biodiversity", published in February 1996 and with the GEF Operational Programmes, published in April 1997 for the following reasons:

1. It focuses on coastal and marine activities in the marine protected areas of the Insular Caribbean region. It deals with questions to establish a regional strategy that is crucial to the conservation of biodiversity in marine protected areas that the Caribbean countries consider important.
2. It proposes an approach based upon: (1) strengthening and developing the capacity needed to enable existing or new institutions to function more effectively, and (2) sharing costs for interventions required for including elements in comprehensive plans agreed upon.
3. It proposes to help catalyze the necessary regional actions and the resulting national and local actions, required to address the problems and priorities of the marine biodiversity conservation in the region.
4. It seeks to help decision-makers in the region to identify the changes necessary to make existing development programmes consistent with the principles of sustainable development and compatible with the capability of the environment in the region to assimilate them.
5. It accords with the key role of the GEF in promoting collective actions to address the issues codified or otherwise articulated into the international agreements and policy instruments and to ensure, as much as possible, that international efforts are coordinated and not duplicated.

6. It is relevant to the scope and objectives of the GEF Operational Strategy for biological diversity.

V. Support at the national level

As was mentioned above, the Ministers and Heads of Delegations of the governments present at the Eleventh Meeting of Ministers of the Environment of Latin America and the Caribbean, held in Lima, Peru from 10 to 13 March 1998, decided to support the submission and promotion of a GEF project proposal to promote the conservation and sustainable use of biodiversity of the marine protected areas of the Caribbean region. They also recommended that UNEP in association with UNDP, IUCN, FAO, the Caribbean Environment Programme, CAMPAM and other organizations and agencies take the necessary steps to support the countries of the region in the final formulation and presentation of the project to GEF Secretariat.

VI. Justification

Marine protected areas of the Caribbean region support a complex interaction of three important ecosystems such as coral reefs, mangroves and sea grass beds that help to maintain ecosystem productivity, safeguarding essential ecological processes by controlling activities that disrupt them or that physically damage the environment. About 14 percent of the world's coral reef area is found in the region, representing one of the most diverse coral reef fauna in the world, in terms of higher taxonomic variety. The region has a high level of biodiversity even for tropical areas. While species numbers are much lower in the insular Caribbean, in the majority of the islands, especially the larger ones, there are high levels of endemism. The Caribbean overall has considerably lower generic diversity of hermatypic corals than most of the tropical Indo-Pacific. However, it has the highest number of regionally endemic genera in the world. The region is particularly rich in mollusks, and in larger crustaceans, with the second highest number of endemic lobsters. All species of sea turtle except the flatback breed are present in the region, and they are considered endangered.

The marine protected areas have common problems such as over-fishing, extensive tourist pressure, point and non-point source of pollution (including sewage and sedimentation), lack of coherent management regime, staffing and funding shortages, lack of trained personnel, lack of or weaknesses in management plans, insufficient equipment, facilities and infrastructures that needs to be redirected by means of technical work, and agreements, in which the Governments of the Caribbean countries are interested.

Some of these processes are physical, such as the movement of water, food, and organisms by gravity, waves or currents. Others are chemical, such as concentration and exchange of gases and minerals, or biological, such as, nutrient transfer from one tropic level to another. Some, such as nutrient cycling, are of all three types. It is these processes that maintain ecosystem integrity and diversity. Success of these systems depend on the existence and implementation of appropriate legal frameworks, general acceptance by local people through education and participation and an effective and well-supported management system. Essentially a continuous, participatory, interrelated, financially sustainable framework is needed to achieve sustained capabilities of marine and other protected areas in the region to continue their support of life systems today and in the future.

The present PDF proposal has been prepared by UNEP on behalf of Governments of the Caribbean countries. It satisfies the policies established in the GEF Operational Programmes, the priorities identified by the Ministers of the Environment of Latin America and the Caribbean, and the recommendations of the Global Representative System of Marine Protected Areas Report. It is designed to support an integrated approach in the management of the marine protected areas of the Caribbean countries and their interaction with the management of terrestrial and marine protected areas of the Wider Caribbean and the mitigation of environmental problems in the region. Altogether, they will generate benefits of great importance not only to the region but to the world.

VII. Information on project proposer

This project will be carried out by the national authorities in charge of environmental issues as follows: Antigua and Barbuda (Ministry of Tourism, Culture and Environment); Bahamas (the Bahamas Environment, Science and Technology Commission); Barbados (Ministry of the Environment and Natural Resources); Cuba (Ministry of Science, Technology and Environment); Dominica (Ministry of Agriculture, Land and Fisheries); Dominican Republic (Technical Secretariat of the Presidency/National Office of Planification); Guyana (Ministry of Health); Haiti (Ministry of the Environment); Jamaica (Ministry of the Environment and Housing); St. Kitts and Nevis (Ministry of Tourism, Culture and the Environment); St. Lucia (Ministry of Agriculture, Lands, Fisheries, Forestry and Environment); St. Vincent and the Grenadines (Ministry of Health and Environment); Trinidad and Tobago (Ministry of Planning and Development/Environment Division).

VIII. Information on proposed executing agency

(If different from above).

The project will be executed by the IUCN and has been mandated to work at the regional level in this area. IUCN has been an active participant in the establishment and management of the region’s protected areas. It has worked in close association with governments, as well as with regional programmes and organizations. The Caribbean is represented through a member of the Dominican Republic at IUCN´s World Commission on Protected Areas.

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Chapter III
Study: A regional strategy or the conservation of biodiversity in the Andean systems of protected areas

Latin American Network for Technical Cooperation in National Parks, other Protected Areas and Wild Fauna and Flora

December, 1999

Prologue

During recent years several regional intergovernmental and non-governmental consultations have been carried out; these have spurred diverse national and international initiatives for sustainable development in the Andean region. These initiatives have been backed at various meetings carried out by the Latin American Network for Technical Cooperation in National Parks and Other Protected Areas and Wild Flora and Fauna, under the FAO Technical Secretariat. This Network has prioritized the Andean environment and seeks new mechanisms for the conservation of biological diversity in protected areas and surrounding land, thus favoring connectivity between protected land.

As follow-up to the diverse initiatives on the topic, the FAO Regional Office for Latin America and the Caribbean organized a Workshop on "Policies, strategies and regional plan of action for the conservation of biological diversity in the Andean systems of protected areas", held in Huaranilla, Bolivia, April 3–7, 1995. Specialists and representatives of institutions that manage the national systems of protected areas of Andean countries participated in this Workshop, carried out under the framework of the FAO/UNEP Project "Conservation of Biological Diversity in Wild Areas and Protected Areas of Latin America and the Caribbean". The latter hosted the Workshop. Some of the main conclusions reached during this activity were the need to promote institutional strengthening, the urgency of establishing alliances among the players involved, the need for coordinated planning in border areas, and the need for technical exchange among the personnel of the protected areas of Andean countries.

During the First Latin American Congress on National Parks and other Protected Areas, held in Santa Marta, Colombia, May 21-28, 1997, the urgent need to create mechanisms to share experiences, establish alliances and maximize on the work undertaken in Andean regions was stressed. The conclusion reached was that common training is needed on conflict resolution, an economic evaluation of water, and rates of redistribution to guarantee the survival of protected regions of Andean countries.

Subsequently, in 1998, the Directors of National Parks of Latin America, at a preparatory meeting to the XI Meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean, held in Lima, Peru, prepared a project profile for "Strengthening of National Park Institutions and other Protected Areas and Bioregional Planning". The XI Meeting of the Forum of Ministers wholeheartedly supported the presentation and management of this project before international financial bodies (Decision No. 2). The documents was later analyzed at end of 1998 at the Intersessional Meeting of Ministers of the Environment, in New York, and later at the

joint programming meeting for GEF activities, with the World Bank, UNDP and UNEP participating. A strategy was decided on to formulate the project by breaking it up into different types of priority environments in order to expedite the implementation process, involving only those shared priority ecoregions, to then begin a gradual process of bioregional planning. The Andean environment was one of those selected, given the important biological diversity it comprises and the challenges posed to its adequate management.

This study is in keeping with these agreements, and has been implemented jointly by the Regional Offices for Latin America and the Caribbean of the FAO and UNEP.

I. Introduction

1.1. Importance of biological diversity in the Andean Region

The Andean mountain range is the largest continuous mountain system in the world, and the second highest in the world. Longitude reaches 7,250 kilometers, between parallels 10ºN and 50ºS, encompassing a surface area greater than two million square kilometers and a broad diversity of temperatures and climates, more noticeable due to marked altitudinal changes. This environmental variety gives rise to vastly diverse ecosystems, spanning tropical regions in the north to perpetual snowy regions in the south.

Because of its physiographical, geological and climatic complexity, the Andean region is considered one of the greatest extensions of biodiversity in the world. Throughout the Andean peaks, mountainous forests and pre-mountainous wetlands compete with tropical rainforests in the Amazon in wealth of species. It is said, for example, that the forest on the eastern slopes of the Andes are even richer than the forests of the Amazonian plains, insofar as palms, herbs, shrubs and epiphytes.

In general terms, the array of vascular botanic species drops to the degree that altitude rises; however, when considering non-vascular plants, the resulting wealth is quite different. It is estimated that the Andes contain between 800 and 900 hepatics and *Anthacerotae*, grouped in 135 genres and 42 families. This is the same case with Andean moss, whose species number around 900 as compared to 200 to 250 in the Amazon basin. This rich diversity of non-vascular species is associated to climatic factors (especially humidity in the air), and to edaphic and floristic factors.

It has also been proven that mountainous forests are a haven to a great number of rare and endangered species, in addition to endemic varieties of plants. These endemic varieties subsist precisely because of inaccessibility, the range of varieties of habitat, and the degree of isolation that a high mountainous habitat possesses, and which is normally separated from other similar ones by markedly different environments.

Recent studies have proven the high degree of endemism in birds in the northern reaches of the Andean range. Thus cloudy tropical mountainous forests in the Andes house nearly 35% of the endemic regions of the birds of South America, already the most numerous endemic regions on the planet. What is notable here is that birds are indicators of the endemisms of other life forms, for example the mammals of eastern Andean forests.

The bird fauna in the Andean environment is very diverse. Of the nearly 3,000 non-sea fowl of South America, pat least 70% are to be found in the tropical Andean region. Amphibians and reptiles in the Andean region constitute 40% of the species of these two groups in all of South America; invertebrates include nearly 25% of butterfly species in the world, with the eastern slopes of the Andes being the riches area in species on a global level.

The Andean region is also considered one of the most important centers of origin for cultivated plant species. It is a known fact that during the Inca Empire almost the same number of plants were cultivated as in all of Europe and Asia, estimated at close to 70 cultivated domestic species. The Andes shelters wild relatives of various plant species used medicinally and industrially, including potatoes, tomatoes, beans, corn (as a secondary source of origin), tobacco, guava and chili peppers, among others.

Over half of the wild species of the *Solanum* genre (potatoes and related species) are endemically distributed throughout the tropical and sub-tropical Andes. The potato, a prominent product of modern society, was domesticated in pre-Columbine times, in the Andean high plains of Bolivia and Peru, due to its qualities and storage abilities. At present there are hundreds of varieties and types of cultivation of this product, derived from genes stemming from wild species. These are more resistant to nematoda and to viral and fungal diseases, as well varying in starch content and increased crop productivity.

There are many other proven uses for the wild relatives of cultivated species. The tomato (*Lycopersicum sp.*), which incidentally is the second most cultivated plant in the United States, originated in the tropical Andes. Some wild varieties of this species have contributed to improving the characteristics of cultivated species, endowing them with greater vitamin content and greater resistance to disease and handling during harvest. Color is intensified with the use of genes obtained from other wild varieties.

Despite the scarce information available on genetic resources from wild varieties, it is thought that Andean regions have a greater array of genetic varieties as compared to other areas of the Region. Andean fauna can provide interesting alternatives to local people, as has occurred with the *cuy* or *cuye* –guinea pig, which aside from being a valuable source of protein is used in cancer research. We could also mention here the chinchilla and the vicuña, whose pelts have been in high demand for years in the fashion world due to its top quality.

1.2. The need for specific policies and strategies for Andean protected areas

Mountains regions, among them the Andean, are the chosen sectors for establishing protected areas; in fact, the first protected areas of South America were established in the Andes mountain range in Chile and Argentina. There are several reasons that justify this preference, though some of them have only been recognized in recent decades.

The environment in the Andes is different from other environments. Aside form the biological diversity and importance of endemism, the Andean region encompasses a great variety of climates and geological and physiographic traits. These confer powerful scenic qualities and a feeling of solitude and distance. For many the mountains are sacred, bringing spiritual relief; to others, they impart fear and are challenging.

The Andean environment also contains valuable mineral beds. Additionally, it constitutes the primary water reservoir, both in quality and in quantity, for the communities that inhabit the region, for visitors and primarily for those who live in valleys or plains in the low regions. This water is used for domestic, industrial and energy purposes as well as crop irrigation.

Notwithstanding the importance of its natural resources, the Andean region possesses other value as well. Because the Andean range frequently acts as an international border, it gains importance in the sovereignty and territorial defense of the countries. There is even a theory that many of the first protected areas of South America,

especially those established in the forties, were thus declared to guarantee freedom of action to the governments themselves of border territories.

Although mountainous regions represent solitude, much of this territory is occupied by human settlements. The communities vary, from self-sufficient indigenous tribes with a subsistence economy, to those dependent on outside resources, through those that are completely integrated into the market economy. Human populations live on steep inclines, with soil that is unstable and unsuitable for agriculture, and under extreme climatic conditions. There they practice subsistence systems of agriculture and livestock, herding and agroforestry, self-sufficient thanks to market distance, and of high cultural value.

The very gradual improvement in communications and accessibility, key elements for economic development in the Andean region, lead young people form the communities to emigrate and break away from their social structure. In this sense, the protected areas can play an important role so that communities might develop harmoniously and appropriately, retaining the essence of their cultural values.

In sum, the following elements justify special treatment for protected areas of the Andean environment:

1. **Fragility of ecosystems:** Various factors have rendered the Andes especially vulnerable to development. Soil erosion and the changing course of rivers and destabilization of hydrographic basins are the result of sharp inclines, associated to arid conditions in some regions and heavy rainfall in others. These are in addition to deforestation and inefficient agricultural systems.

2. **Loss of genetic resources:** The wild relatives of the many species that feed humanity, along with other species of present and potential economic value, are in danger of disappearing due to deteriorating ecosystems. Greater research is needed to establish the potential of sustainable management of wildlife. The limited experience acquired in some species (for example, vicuñas in the Peruvian Andes, and capybaras, crocodiles and turtles in the plains of Colombia and Venezuela) suggests great potential in becoming part of the local economy in a rational and sustainable manner, rather than employing mere hunting. A strategically located, interconnected network of protected areas would maintain genetic stock, which in turn would foster economic productivity and social wellbeing in the Andean region.

3. **Loss of knowledge and ancestral rights to land:** The general trend has been to replace indigenous cultural knowledge with present-day western culture, without heeding the loss of knowledge that has been transmitted from generation to generation. Any and all development plans for the region must consider the many Andean areas that compose the sphere where numerous indigenous populations live, populations in possession of a store of knowledge and lifestyles that must be respected and rescued so that they might be used to satisfy the needs of these groups and sustainably manage resources.

4. **Border zones:** The Andean mountain range belongs to seven countries. Political borders cross through natural ecosystems as well as indigenous communities. Consequently, decisions concerning these ecosystems and communities will vary form country to country, according to particular interests and priorities.

5. **Endangered protected areas:** Many of the parks and other categories of protected areas within the Andean region display a lack of financial, technical and personnel resources to ensure their protection. Improper planning of financing, management, public support and training, among other things, causes some of the protected natural areas to be threatened at various levels.

If to the above one adds environmental problems derived from past and present use, such as the destruction of wetlands, the proliferation of artificial grasslands, over-fishing and hunting, the introduction of exotic species and the problems stemming from the cultivation of poppy and the production of cocaine, then one appreciates the magnitude of the challenges that the people of the Andean region face.

1.3. Background of the Study

In recent years the countries of Latin America and the Caribbean have made important strides in the conservation of biological diversity through designating approximately 2,500 protected areas. Nonetheless, numerous obstacles still persist, hindering the attainment of the desired objectives for these areas. For example, the criteria employed to select these areas, including their size and shape, have not always been adequate to the task of covering the need for the conservation of biological; quite frequently there is no connectivity between protected areas to favor the migration of flora and fauna. Moreover, the institutions responsible for protected areas lack political and financial support, and there is a need to involve a broader range of players, including local governments, non-governmental organizations and the private sector.

New information generated from recent initiatives in the planning and management of biological regions (bioregions) indicates that protected areas legally established by national government is insufficient to conserve productive capacity and biodiversity. In addition, mechanisms must be found to protect the biodiversity of all natural scenery, through new institutional arrangements. Therefore, the concern is not only to expand the limits and strengthen the present protected areas and establish new areas where needed, but also to establish connectivity through biological corridors in these areas, promoting conservation practices in agriculture, livestock raising, utilization of forests and rural development.

This does not mean that the agencies managing protected areas are to be responsible for agriculture, forest production or rural extension work. The responsibility is centered on the hope that establishing new alliances with complementary agencies, communities and individuals, in a manner which expedites the preparation of joint bioregional programs, will ensure the achievement of the objectives associated to biological diversity.

In this context, some environments, such as the Andes mountain range, have received special attention. Agenda 21, resulting form the United Nations Conference on the Environment and Development, devotes chapter 13 to the sustainable development of fragile mountain ecosystems, for which the FAO has taken on the important task of leading implementation. Concerning specific proposals for action, it has been suggested that the countries be encouraged and supported so they might prepare and begin to implement development programs in mountainous regions, as well as strengthen national capacities for the sustainable development of said areas, employing openly participative methods. Moreover, it has been proposed that the interested countries be motivated to hold international meetings that would facilitate the exchange of results and experiences obtained in their environments. Since 1994, several regional intergovernmental and non-governmental consultations have been held, fostering the creation or strengthening of various national and international initiatives for sustainable development in the Andean region.

These initiatives have been backed at several meetings carried out by the Latin American Network for Technical Cooperation in National Parks and Other Protected Areas and Wild Flora and Fauna, under the FAO Technical Secretariat. This Network has prioritized the Andean environment and seeks new mechanisms for the

conservation of biological diversity in protected areas and surrounding land, thus favoring connectivity between protected lands. The efforts decidedly require modern institutional structures and the implementation of new and advanced techniques and methods for territorial management.

As follow-up to the diverse initiatives on the topic, the FAO Regional Office for Latin America and the Caribbean organized a Workshop on "Policies, strategies and regional plan of action for the conservation of biological diversity in the Andean systems of protected areas", held in Huaranilla, Bolivia, April 3–7, 1995. Specialists and representatives of institutions that manage the national systems of protected areas of Andean countries participated in this Workshop, carried out under the framework of the FAO/UNEP Project "Conservation of Biological Diversity in Wild Areas and Protected Areas of Latin America and the Caribbean". The latter hosted the Workshop.

During the First Latin American Congress on National Parks and other Protected Areas, organized jointly by the FAO, the Parks Network, the IUCN and the government of Colombia (Santa Marta, Colombia, May 21-28, 1997), the urgent need to create mechanisms to share experiences, establish alliances and accentuate the work undertaken in Andean protected areas was stressed. The conclusion reached was that common training is needed on conflict resolution, an economic evaluation of water, and rates of redistribution to guarantee the survival of protected regions of Andean countries.

Subsequently, in 1998, the Directors of National Parks of Latin America, as part of the Preparatory Meeting of Experts, of the XI Meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean, held in Lima, Peru, prepared a project profile for "Strengthening of National Park Institutions and other Protected Areas and Bioregional Planning". The XI Meeting of the Forum of Ministers, held immediately after, March 12-13, 1998, also in Lima, Peru, wholeheartedly supported the presentation and management of this project profile before international financial bodies (Decision No. 2) and requested that the FAO, UNEP and other bodies, provide technical assistance to the countries to prepare a complete version of this project. The document was prepared by the Park Directors of Latin America, in Salinas de Maragogi, Brazil, May 3-9, 1998, and later analyzed at the Intersessional Meeting of Ministers of the Environment in New York, and later yet at the joint meeting for programming of GEF activities, at the end of 1998, by the World Bank, UNDP and UNEP. A strategy was decided on to formulate the project by breaking it up into different types of priority environments in order to expedite the implementation process, involving only those shared priority ecoregions, to then begin a gradual process of bioregional planning. The Andean environment was one of those selected, given the important biological diversity it comprises and the challenges posed to its adequate management. This study is in keeping with these agreements, and has been implemented jointly by the Regional Offices for Latin America and the Caribbean of the FAO and UNEP.

1.4. The focus and methodology of the study

This study intends to design a Strategy for the Andean Region and implement it through a Regional Project, geared to global sustainable development through strengthening the role of Andean protected areas and biological corridors that they might become strategic spaces for the conservation of biodiversity. The Strategy identifies priority theme areas for the Andean environment and establishes preliminary guidelines a program of joint efforts for bioregional planning and development among Andean countries.

The Regional Strategy considers the following elements:

1. The connectivity of protected areas through national and international biological corridors, based on bioregional planning criteria, considering mechanisms and harmonizing actions to implement this initiative with the participation of all interested and affected parties.
2. Coordinate actions for planning and management of protected border areas.
3. Actions designed to compile and adequately manage regional information through a database.
4. The need for technical cooperation between Andean countries, and institutional development through technical exchange, training activities, and others.

The study has focused on structuring the components of a regional strategy, keeping in mind the focus on bioregional planning, which emphasizes the identification of actions that permit strengthening and expediting the joint efforts of the countries of the Andean region.

The study has been undertaken in such a way that thematic areas identified as priorities, and actions proposed, complement and strengthen those already underway in the Andean region. This allows for the identification of the baseline and incremental costs for implementation of the regional strategy as concerns the conservation of biological diversity in the Andean environment.

Hence, all plans and programs underway must be carefully considered, given the diverse national initiatives on conservation of biological diversity; several countries are receiving significant external financial aid for environmental purposes.

The study was carried out keeping in mind the following sequence of activities:

> **Activity 1.** Identification of diverse national variables to be studied and preparation of instruments (questionnaire) to obtain information from Andean countries.
>
> **Activity 2.** Request information of the corresponding national institutes, using instruments designed for that purpose.
>
> **Activity 3.** Preparation of a draft of a regional technical document containing the following elements: regional diagnosis, policy framework, proposal for Regional Strategy, and proposal for the profile of the Regional Project.
>
> **Activity 4.** Distribution of a regional technical document for analysis by corresponding national institutions and international institutions linked to the topic in order to obtain comments and suggestions concerning the regional diagnosis, the proposal for a regional strategy and the proposal for a regional project.
>
> **Activity 5.** International Workshop to validate the draft of a regional technical document, with the participation of corresponding national institutions and international organizations linked to the topic, and to jointly analyze the regional diagnosis and the proposals for a regional strategy and regional project.
>
> **Activity 6.** Edition, publication and distribution of a regional technical document, and handling of the presentation of the regional project proposal to sources of financing.

II. Diagnosis of the protected areas of the Andean systems([1])

2.1. Situation of natural resources and the use of land in the Andean environment

2.1.1. Water

The Andean mountain range has always held an important role as a source and regulator of valuable fresh water resources for domestic use, energy and irrigation of low regions. Notwithstanding this, the increased use of this environment based on predominantly extractive criteria has produced severe effects on the hydrological regime and the availability of local sources of water in terms of quality, quantity and convenience. The deficient knowledge and handling of water basins, unregulated urbanization on its peripheries, lack of treatment of residual waters, lack of basic sewerage services for rural populations and the improper use of water for various non-sustainable economic purposes threaten the conservation of hydric systems.

In addition, given the high hydroelectric potential in these regions, the main public works are located therein, representing heavy investment, valued among primary capital goods, both public and private. These works are the basis for energy resources, irrigation for agricultural production and supply of potable water.

Road construction and spontaneous urbanization, in addition to mining activities and degrading agricultural and livestock activities, have also increasingly affected the basins that are the source of water supply, the river-beds and important lacustrian systems. Quite often the water of the Andean basins is contaminated, littoral areas are degraded and sediments and pollutants are quickly accumulated. Moreover, the exploitation of fragile natural mountain resources that serve as water supplies to benefit flatlands, does not take into consideration the ordinance of these activities, the result being that farmers who actually depend directly on the mountains for their economic activities live in general conditions of poverty and indigence.

2.1.2. Soil

The slopes of the Andean range show a vast variety of ecological systems, at varying altitudinal levels, where it is possible to find several types of climate regimes, each with distinct diversity in its local habitat. A common characteristic is the over-use of soil in these ecosystems, associated to improper cultivation practices and a problem with land and water deeds. This has reduced the agricultural and livestock potential and productivity, generating great erosive processes, aside form social conflicts.

In the case of soil loss due to erosion, existing natural phenomena in the Andes are accelerated by the impact of human activities in extracting protective vegetation. This leads to the degradation of high altitude ecosystems, of microbasins and drainage units in the mid and low regions. The pressure to use an ever-larger land area for agriculture and livestock, a result of technological deficiencies in farming practices, as well as indiscriminate extraction from high altitude forests, give rise to a soil degradation process that results in the desertification of vast mountainous territories and definitive emigration of the settlers to the cities.

The agricultural and livestock activities that cause the greatest detriment to the soil in the Andean environment are: i) the terraces, or high mountain grasslands which

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(1) Annex II shows **Charter 1** and **Charter 2**, reflecting the opinion of the national institutions surveyed reagrding the efficiency of institutional actions, coverage and representivity, management and mitigation of threats to protected Andean areas.

evidence the expansion of the agricultural and livestock borders, over-pasturing, grass burning, and the introduction of exotic species, which intensify degradation and erosion processes, and, ii) mountainous agricultural regions, mostly located on the outside flanks of the sierras and ranges, in general not suited to this purpose.

2.1.3. Forests

Indiscriminate extraction from high altitude forests is the most common situation confronted in the Andean environment, and is caused by several motives. One of these is the socio-economic limitations of the population groups located in other regions, who are forced to emigrate and occupy fragile ecosystems. This occupation has been, in general, spontaneous, without planning, and has led to inappropriate practices that are in conflict with the sustainable management of Andean forests.

Native forests are the most worrisome of all issues in the fragile mountainous ecosystems. The native Andean forest has been meddled with increasingly in recent years, leading not only to a loss of forest mass, but also partial loss of the rich biodiversity it encloses. To the above we must add increasing contamination and the effect on the quality of life of indigenous and rural communities.

High forest lands and water harnessing are also exposed to the threat of extreme natural events. Environmental instability, caused by human intervention, threatens slopes and primarily affects the lowlands that receive the effects of alterations in the highlands. These endangered sectors are highly sensitive to disturbances caused by human activity.

In general terms, heavy intervention in forest lands of the Andean mountain range – such as urbanization, mining, road construction and cultivation– have given rise to the deforestation of critical zones in order to regulate natural sources to supply potable water and water for irrigation. This mass deforestation of fragile sectors not only constitutes a loss of valuable plant resources, but also becomes an additional risk factor leading to catastrophic events, such as landslides, avalanches and erosion.

2.1.4. Human settlements and cultural values

In the past, numerous civilizations settled on the Andes mountain range, particularly in those areas where agricultural systems met with success as a result of techniques applied to working the slopes and water management. Valuable works for irrigation built before the arrival of the Spanish conquerors have been recognized, in addition to proper handling of basins, at an altitude above two thousand meters; these led to the emergence of great empires, such as the Incas and other ethnic groups. There are several pre-Hispanic civilizations that were supplied with water from mountain sources; they also used adequate technology on their slopes, and perceived the mountain to be a sanctuary, respected and venerated. The communities currently inhabiting the Andean region have inherited these unique ethnic and cultural values, and have adapted to a fragile environ and to technical and environmental limitations for the sustainable use of natural resources.

Nevertheless, over time heavy loss of traditional knowledge and techniques has occurred, limiting the response of the population to the degradation of the natural ecosystem. To a great degree, the present backwardness in development observed and the poverty in rural Andean communities is due to the loss of the fundamentals of traditional conservation knowledge. To this we must add the marginalization these people suffer as concerns extension services, technical support, financing and the total lack of development policies for the region.

In some places, ecological degradation and conditions of poverty in the agricultural and livestock sector are so extreme that a significant portion of the population is migrating to urban areas in search of improved living conditions. Despite this, the indigenous cultures that still inhabit the Andean environment have maintained ancestral techniques for land use; this has made it possible for large, unaltered sectors of the population to remain. These people are a permanent source of production for goods and services; in many cases they have had to harmonize with the establishment and management of protected wild areas.

2.2. Components of Andean protected areas

This study includes components of the Andean systems of protected areas such as: i) coverage (inclusion of a sampling of ecological formations of the Andean environment), ii) representativity (the sampling should be representative of all existing formations), iii) the need for appropriate criteria to establish new protected areas, iv) the use of diverse management categories that will be internationally proposed, and v) connectivity between protected areas. As concerns these components, we would underscore the following aspects:

1. As mentioned in numerous documents related to the national systems of protected areas in Latin America, some referring specifically to the Andean environment, generally speaking the countries of South America manage their protected areas individually, not as a part of a comprehensive system. For this reason the establishment of protected areas does not answer strictly to biological criteria, which creates voids in the coverage and biological representativity. It has been estimated that coverage and ecological representativity in Andean protected areas is only partially implemented, underscoring the need to expand the Andean systems to protected areas.
2. In recent years, and through diverse mechanisms, Andean countries have made important strides in identifying potentially important sites for the conservation of biological diversity; these must be incorporated to the national systems of protected areas. Several of these newly identified sites are located in the Andean mountain range, and some are regions shared between two or more countries.
3. Despite the fact that the Holdridge Life Zones is the most widely used system in ecological or biogeographical classification, there is no standardization among the countries to detect voids in coverage and ecological representativity. This limits the analysis of voids in coverage and representativity at the Andean regional level as a whole.
4. There is agreement between the countries concerning the need to establish new protected areas in the Andean environment in order to complete the coverage and representativity of ecological formations. It can therefore be safely said that the criteria applied to establish protected areas, though not uniform, has progressed in a homogenous manner in different countries. In the majority of Andean countries, as in the rest of Latin America, traditional criteria employed was relatively subjective. The most common traits sought were scenic quality, the presence of natural forests, availability of fiscal property and the need to protect hydrographic basins. At present the predominant criteria includes protection of biological diversity (representativity, endangered species, endemisms, and others), sustainable use, and more recently, connectivity.
5. Despite the preceding situation, the national institutions that manage protected areas have pointed out the need to revise the criteria employed to establish en

Andean protected areas. Some institutions have even mentioned that establishing these criteria is an activity that is poorly employed at the national level.

6. The Andean systems of protected areas comprise different management categories; the only one common to all countries is the national park category. Under this heading we include different types of reserves, some of them strict and others devoted to sustainable use. In a few cases there are sanctuaries and natural monuments.

7. Even though all of the national institutions recognize the IUCN international classification, it is quite apparent that it is not being fully employed; in light of this, some Andean countries foresee changes in the type of categories being used. For example, some national institutions have explicitly declared that diversification of management categories is an ill-implemented matter for the Andean environment of their countries.

8. An element that stands out is the fact that in most Andean countries the institution that manages strictly protected areas (national parks) is also the one in charge of areas designated for sustainable use (forest reserves). However, this is not always the case; in a few cases an significant effort must be put forth for institutional coordination if one wishes to manage a comprehensive national system as such.

9. The connectivity of protected areas within the Andean system can be attained through different mechanisms. Some areas are contiguous, either within the same country or with other countries, and constitute an ideal situation that amply favors the flow of genetic resources and the dispersion of species within an extensive ecosystem.

10. Another mechanism that is being introduced in Andean countries is the establishment of biological corridors between protected areas, which will enhance the wealth of species, especially wild fauna, thus becoming a successful management technique. Notwithstanding this, it is recognized that Andean countries have limited State capacity to establish and manage these biological corridors; in order to implement the latter, active participation is needed from local governments, non-governmental organizations and the private sector.

11. The State, through institutions that manage national systems of protected areas, must play an important role in promoting and standardizing the establishment and management of biological corridors. Along these lines, it is considered essential for the different players involved –central government bodies, local government, non-government organizations, private enterprises for conservation– to jointly coordinate the task at hand.

12. Despite the importance of this issue, almost all of the Andean countries consider the connectivity of protected areas to be a matter seldom employed in the respective countries, thus constituting one of the priority elements for future actions to strengthen the Andean systems of protected areas and the conservation of biological diversity.

2.3. Institutional and management elements

This study has included as institutional elements the availability of policies, strategies and legislation for Andean protected areas; institutional coordination and the work done to coordinate with bordering countries; and, the availability of trained personnel. Under the heading of management the following elements have been included: level of available information; delineating boundaries and land sanitation; the availability, applicability and monitoring of management plans; participative processes, meaning

work with indigenous communities and the availability of management programs for buffer zones. Concerning these elements, the following should be underscored:

2.3.1. Institutional elements

The availability of policies, strategies and legislation

A prevailing trait of the Andean countries is the scarcity of specific policies and legal instruments for the management of Andean protected areas and de-articulation between human activities, knowledge, and cultural practices and their effect on ecosystems. All of these countries recognize the lack of policies, strategies and legislation on Andean protected areas; these areas in general are subject to the policies, strategies and legislation of their national system of protected areas, regardless of their Andean nature.

Consequently, their policies are harmonious with the objectives of conservation and management of these protected territories; at most they are encompassed in those that cover the entire territory. In some cases, specific plans correspond to activities of territorial laws, which clearly incorporate protected areas in the plans for land use. In other cases they refer to national plans of action for biodiversity, including protected areas for which policies are in keeping with the objectives of conservation and management of these protected territories. These specific plans may be linked to national environmental plans, or may be more sectorial in nature becoming guiding plans for the entire national system of protected areas, seeking to insert these areas within the framework of general government policies in the long term.

One element that stands out is that several countries are in the initial phase of preparing their national strategies for the conservation of biodiversity.

Institutional coordination and coordinated work between bordering countries

The situation of internal institutional coordination, that is, among national bodies, has different hues, and depends on the type of institutions and bodies involved. It has been detected that this type of coordination is considered to be much weaker among institutions that manage Andean protected areas than other competent state bodies. This is more accentuated when dealing with particular environments, such as the Andean, and even more so if protected areas are analyzed, planned and developed within the context of bioregional planning.

Bioregional planning requires the cooperation and participation of various bodies, both those responsible for the conservation of biological diversity and those charged with promoting rural Andean development. In this sense, it is proven that Andean countries have a marked lack of coordination between the diverse State programs involved in the conservation of biodiversity, the establishment and management of protected areas, the recovery of degraded soil, promotion of productive activities, development of rural agriculture and livestock activities, the management of hydrographic basins, among principal activities.

Several Andean countries agree that lack of coordination among public bodies is the result of a specific policy and strategy for the conservation and rural development of the Andean environment. This needed policy and strategy must specify the role and functions of competent bodies, the specific mechanisms for joint work, and the manner in which other players can be involved, such as non-government organizations and the private sector. It must also specify the mechanisms to promote this non-governmental and private participation, either through fiscal franchises or other types of incentives.

Coordination among institutions managing Andean protected areas through non-governmental organizations and the private sector appears to be more favorable than the preceding case, though there are marked differences when comparing the specific situations of some countries. Some have attained significant progress in good coordination with non-governmental organizations, particularly as concerns the co-management of Andean protected areas, though still others point out that there are as yet many voids and needs in this regard. Yet other countries mentioned that quite definitely coordination between State, NGOs and the private sector is poorly implemented at the level of the Andean environment.

A similar situation arises when analyzing the coordinated works of the institutions managing Andean protected areas of the different countries as concerns protected border areas. Though there is marled interest in joint coordination, of mutual benefit to the countries, evidenced not only in the Andean environment but in the Amazon environment as well, relatively little progress has been made in the matter. In fact, most countries have stated that this action is poorly implemented at the national level.

Albeit poorly implemented, in some cases coordination with neighboring countries is carried out spontaneously or informally between the responsible personnel for the management of protected areas, and there are specific activities in which this occurs. For example, there are some joint initiatives in areas of research, supervision and control, technical and training exchanges, and cooperation in planning of areas.

Notwithstanding the lack of formal, official and specific coordination, for the management and development of protected border regions, the countries agree that there are ensuing benefits from this type of joint work. Among these benefits are the possibility of managing these areas based on the characteristics and peculiarities of the Andean ecosystem, pest and disease control, reduction of loss of biodiversity, facilitation of migration of wild fauna, prevention of forest fires, control of illegal trade of species, strengthening of ecotourism, facilitation of research, technical exchange and training, saving in the cost of the scope, attraction of international cooperation, and others.

The availability of trained personnel

Andean countries are lacking a reliable diagnosis which would quantify the real needs for training; as a first step, the prescription of present levels of training has been suggested. This would enable the design of basic curricula for guards, technicians, and management officials, and the formulation of formal, long-term programs in themes such as management and administration, relations with local communities, and control mechanisms, all of which are categorized as the most pressing needs.

Though the magnitude of training needs has not been quantified, there is full agreement among the Andean countries that without question this is an area of top priority. Moreover, several Andean countries have manifested that training is one of the elements that is poorly implemented at the national level, and actions that are carried out in this area are not lasting. The lack of trained personnel capable of satisfying the needs –increasingly more demanding due to the strengthening received from national systems for protected areas– has become a recurring problem.

For the most part, the Andean systems for protected areas do not have their training needs covered; this is especially true of those Andean regions that are a distance from large urban centers. Professional involved in Andean protected areas are mostly biologists, forestry experts, agronomists or veterinarians, whereas park rangers have only elementary or secondary education; occasionally a professional or forestry technician will occupy a middle-level management post. Due to this situation, and to

the diversity of requirements, training needs are of great magnitude. There is consensus concerning the need for updated training courses and demonstration centers for park rangers and other officials.

Present training activities are scarce in the different countries, and are carried out by the governmental institution responsible for the national system for protected areas, relying in some cases on the cooperation of non-government organizations, universities and bilateral cooperation. Some countries are working on the design of policies for training personnel and on didactic materials to be used in future activities.

2.3.2. Management elements

The level of information available

The level of information available for the management of Andean protected areas differs from one country to the next; there are even differences in the degree of priority assigned to ecological inventories and setting up of databases. Furthermore, the methodologies used in the diverse fields of investigation differ among the countries. Save exceptional cases, such as the Data Centers for Conservation, there is no system set up for the exchange of information on situations like threat, rarity or relative fragility of components of the Andean protected areas. Budgets are scarce and the compilation of information is usually developed under difficult conditions.

In many cases value has not been placed on the importance of implementing information and follow-up systems for the activities carried out within Andean protected areas that could be used to support actions and the work of the authorities and institutions involved in the management of Andean protected areas. There are, however, some initiatives of Andean countries that indicate that this situation may change.

Given that these initiatives are recent, most Andean countries have declared that the generation and management of information is an element showing only fair implementation at the national level, and very often the little existing information is not disseminated adequately in the interior of the countries. Exchange of information between countries is even more limited, and coordinated work at the subregional level to generate information and databases with common criteria is practically non-existent. This is a crucial element if a bioregional planning strategy for the management of Andean protected areas is to be applied, and done so through biological corridors that enable the connectivity of protected border areas.

Definition of limits and land sanitation

In Andean protected areas very often differences arise between the limits specified in the decrees that establish protected areas and the situation observed within the land itself. Quite frequently the limits of Andean protected areas are erroneous, either because easily recognizable reference points have not been used (for example, rivers, high peaks, or other geographic features), or there have been topographical errors made. Despite this, there are also some countries that state that the definition of limits for boundaries is one of good implementation by the institution responsible for the handling of protected wild areas. In point of fact, some countries have come up with a re-delimitation process for the areas in order to clear up some confusing situations or to eliminate conflicts on land ownership.

Land sanitation is often linked to these processes of redefining boundaries, as the latter is quite frequently the principal cause, especially when problems of land ownership arise on the periphery of protected areas. Excessive pressures on these

portions of the areas constitute a problem that negative affects their management, and literally result in litigation, which could be averted with adequate delimitation and land sanitation. It would appear that land sanitation is particularly relevant in the Andean environment, as several countries have declared that this element has only reached fair implementation by the institution responsible for the management of protected areas. Studies carried out in this regard some years ago appear to still be in effect; these studies mentioned that though many South American areas have been protected for several decades, disputes with local populations caused by agricultural and livestock activities, illegal land occupation and utilization of the resources in the area posed and continue to pose problems.

The problem of sanitation becomes complex when litigation over land ownership concerns the centrally located land of protected areas, and in those sectors that contain natural resources that were the reason it became a protected area. In this case the strategy for solving this type of conflict needs to be radically different, as usually the government institution will never put up the budget to acquire the properties needed, especially if there is any speculation on land price. Participative and coordinated work with these human settlements in protected areas takes on special significance in such a case, and even more so if the population in question are ethnic groups (as is often the case in the Andes), with their own customs and traditions imbued with cultural value.

The availability, applicability and monitoring of management plans

In general, most Andean countries have stated they possess a current management plan for their Andean protected areas. This plan may have different names (master plan, operative plan, management guide, etc.), and differing characteristics and scope, yet it constitutes an approved –or undergoing the approval process– planning document of the competent body. Several countries have gone so far as to catalogue the availability of current management plans as being of good implementation for the Andean protected areas.

However, if the applicability of said plans is analyzed, the situation does not appear to be as favorable. Almost none of the countries considers that the management plans they have are applicable in light of the existing reality of Andean protected areas. There is agreement on the part of many of the countries concerning the fact that the start-up of their plans has been thwarted for several reasons, among them the scarce participation of the local population, low financing and the need for personnel and equipment that has not been covered.

On the other hand, there is agreement that monitoring of plans has been very limited in practically all cases. Almost all of the countries have stated that monitoring of plans and community participation at al levels of planning has received poor implementation at the national level.

Therefore, the general characteristic of Andean protected areas in matters of management planning is that plans are available, though poorly implemented and with poor participation (save a few exceptions), and a lack of information on whether or not these plans are bringing about the desired effect on the development of protected areas and averting adverse effects. Under these circumstances, coordinated work among the countries and sharing of accumulated experiences gain particular importance to fill the voids in methodology for planning and participative monitoring.

Participative processes, working with indigenous communities and the availability of management programs for buffer zones

Participative processes, working with indigenous communities and management programs for buffer zones are crucial elements for bioregional planning that Andean countries wish to promote. This type of planning requires the establishment of a greater umber of alliances with all parties affected by the establishment of protected areas, and broad cooperation with these players, so that all may harmoniously focus actions toward common goals, using shared, complementary management criteria. This aspect takes on even greater importance when dealing with initiatives for coordinated efforts that involve two or more countries with similar ethnic groups, that live in similar ecosystems, and that often migrate from one country to another within the Andean environment. It is precisely in such situations where concerted criteria must be employed to manage Andean protected areas, and seek a balance of the experiences and knowledge of the personnel in charge of management activities for local communities.

Andean settlers have long lived in areas relatively isolated from urban regions and from the markets in the lowlands. They have developed a way of life that is characteristic of mountain environments, based on the awareness of a vast environmental diversity that is unique to mountainous regions and takes advantage of seasonal resources in a broad array of ecosystems. Nevertheless, Andean areas are undergoing rapid cultural, economic and environmental changes, mostly due to improved transportation and communications, greater integration into national economies, population growth and development of tourism. The structure of Andean communities is gradually changing due to migration to urban centers and the influence of new residents.

This panorama, which includes communities either inserted in protected areas or neighboring, brings with it the threat of a loss of cultural and aesthetic values, thus putting the planning and management of natural resources in protected areas at risk. The attempts to gain the commitment of local residents for conservation and development of these areas is a growing need. In recent years the work carried out by non-governmental organizations in this field has increased, though it is often obstructed by the absence of clear regulations and incentives.

The processes for local participation in planning for protected areas are relatively recent, and some Andean countries possess greater experiences than others in this field. In some countries this type of participation is very scarce, and in general is an element that is considered poorly implemented if one analyzes Andean protected areas.

Other countries are just beginning participative processes, which thus far have been used experimentally, and in some cases only temporarily. In few cases have they been fully incorporated into neighboring communities for the purpose of discussing management plans. These exceptions have been carried out under the framework of indigenous legislation, or under legal instruments to evaluate the environmental impact of development projects in protected areas that welcome public participation.

Even though community participation in planning of Andean protected areas is still a recent process, the advantages to this strategy are widely recognized. For example, joint decision-making assists in the acceptance of these same decision on behalf of the communities, building local capacity.

Participative processes and work with indigenous communities has occurred mostly in buffer zones in Andean protected areas, even though no agreement has been reached

among the countries to clearly define these zones. Some consider the buffer zones to be external and peripheral territory, outside the protected areas; yet others consider them as management areas within the boundaries of protected areas.

Aside from this issue of the conception of buffer zones, which is important to determine laws for the territory, the buffer zones in Andean protected areas are for the most part not subject to legal regulation; when they are, in general these are not well-implemented. In most cases these regions are envisioned as a transition between land to be protected and land for human activity, which should provide local settlers with needed direct benefits without causing permanent impact on ecosystems. Nevertheless, this model has thus far not been well-implemented, save for exceptions, primarily de to a efficiency in technical guidance and in the legal instruments in force. A joint task is required among Andean countries if criteria for bioregional planning and the establishment of biological corridors is to be enforced.

In several Andean countries there is a need to reconcile ecological and socio-economic criteria to define the extension and dimension of zones of influence and buffer zones in protected areas. To do this certain aspects must be considered, such as the origin of basins, biological corridors and isolation processes. Andean countries are aware of the fact that the establishment of buffer zones must be an objective process, one that will not alter the concept of protected area nor the principal objectives of the system of protected areas. These regions should permit the experimental manipulation of natural resources, and should continue to provide stable and harmonious scenery, which results from the application of traditional modes of land use; all of these concepts are closely linked to bioregional planning. Under these guidelines, the Andean countries will recognize the feasibility of establishing specific projects and programs, both compatible and complementary to those for the management plan of the protected area, which in turn might also be designed in a comprehensive manner, directly involving the zone of influence.

It has also been observed that several of the units of the system of Andean protected areas, aside from being neighboring buffer zones, require areas and biological corridors that complement and make the protection of biodiversity in these units more effective. For example, the establishment of stations, resting places and corridors for migrating species descending from the high reaches in unfavorable seasons would help conservation and genetic flow. The creation of a system of natural areas, complementary to the national system of tutelage and local government management, in addition to private sector participation, is considered to be a good solution to the need propounded.

2.4. Conclusions of the diagnosis

The threats to Andean protected areas and the biodiversity of the ecosystems they represent stem from the diverse situations described in the diagnosis. There are also threats derived from the very nature of natural resources in the Andean environment (for example, fragility), in the components of systems of protected areas (for example, isolation and conflict resolution on land ownership).

However, it is quite clear that the threats considered to be of greatest scope, as evidenced in the diagnosis, are those resulting from the inadequate management of Andean protected areas and improper treatment in the way that these areas have been inserted in bioregional planning. Moreover, many of the threats stem from the inadequate use of neighboring land, denoting the lack of and need to enforce criteria of territorial ordinance that goes beyond the boundaries of the protected areas per se.

Thus, bioregional planning and the establishment of biological corridors take on vital importance.

The loss of habitat due to the extractive activities of the peripheral communities is considered to be one of the largest threats that the Andean countries face, a fact in keeping with historic appreciation. Multiple diagnoses have pointed to soil erosion, the felling of trees in natural forests for agricultural and livestock purposes and over-pasturing as the most tangible threats to Andean biodiversity. All of these threats are due to a lack of comprehensive and eco-systematic planning and to the weakness of institutions lacking in qualified personnel, the dearth of information and incipient horizontal cooperation by two or more countries.

Other broad threats are due to similar causes. The lack of regulation for agricultural and livestock activities, contamination of waterways and bodies of water are problems common to Andean protected areas and their zones of influence, and are derived from the scarcity of extension and training programs, of planning activities in these zones of influence, the lack of alliances with the different players involved, and lack of institutional coordination.

This last element, the lack of adequate institutional coordination, also spurs a series of other actions that significantly affect the integrity of protected areas and Andean biodiversity. This is the case of conflict over land ownership, uncontrolled human settlements, the lack of regulation of public services (hydroelectric dams, oil pipelines, gas pipelines, roads, and others), and lack of standardization concerning the utilization of native forests and strictly extractive activities, such as oil exploitation and mining.

Threats linked to the management and internal administration of a protected area are fewer, or at least are considered to be smaller in scope. Such is the case of forest fires, the regulation of public use of the area, and the introduction of exotic species, though these can also be associated to the lack of planning and institutional support.

The threats detected in the diagnosis of Andean protected areas and of the ecosystems they represent, including zones of influence, coincide with the primary management problems that affect them, and that are catalogued as problems that transcend the borders of the countries. For the purposes of this study the main weaknesses and management problems of Andean protected areas can be classified in three main groups: i) lack of application of bioregional planning criteria, ii) scarcity of information for planning and monitoring, and iii) lack of horizontal cooperation among the countries of the Andes to catalyze successful experiences and lessons learned, unify criteria and train personnel.

The enforcement of bioregional planning criteria to resolve the weaknesses of Andean protected areas have to do with diverse elements that the countries themselves point to as priorities. Among these are the institutional coordination among government agencies (national and local), non-government agencies and the private sector; the participation of the players, including local communities, in the management planning processes and decision-making concerning territorial ordinance; the establishment of new areas in light of the lack of coverage or representativity; and connectivity of protected areas through biological corridors, among others.

The needed gathering and management of information for the purposes of environmental planning and monitoring has been amply discussed in various forums of Andean countries. There are several elements associated to this strategy, including the formation of an information network specifically for the Andean environment, the strengthening of the national nodes that feed these databases that should be structured based on standardized criteria, the design of methodologies for the management of information for monitoring purposes, and others.

Horizontal cooperation, on the other hand, is envisioned as a concerted action between Andean countries to generate a much greater effect or impact than the sum of the initiatives taken on individually. The unquestioned importance of Andean countries working with unified criteria for methodology, directing actions toward concerted goals, using information that is equal in quality and quantity, sharing success stories and failures, complementing the actions of others, and training in matters of common agreement are classified as priorities.

III. Framework of policies for the conservation of biological diversity

Despite the fact that the countries do not have specific policies for the Andean protected areas, certain proposals for biodiversity conservation exist in the Andean nations for overcoming the limitations found in the diagnosis. The general objective of this framework of policies is to conserve and sustainably utilize biological diversity in order to guarantee its continuity and the maintenance of its regulatory functions and the ecological and evolutionary processes that sustain life, as well as to allow the generation of goods and services which can be exploited to the benefit of mankind. Some of the components of this policy framework are as follows:

3.1. Improve institutional capacities and strengthen the national systems of protected areas

1. Different international forums have dealt with the need to strengthen the institutional capacities of the bodies that have taken on the responsibility for the administration and management of protected areas. This desire for institutional development is intended in different regards, directing efforts toward coordinated action in a decentralized manner, and strongly reinforcing the participation of the different local governmental and non-governmental bodies in management decisions. At least as regards the Andean ambit, all of the countries want to strengthen the local administration of the protected areas within a broad framework of courses of action established at a central level. The keystone of this policy is aimed at achieving a greater commitment on the part of those who unquestionably feel closer to and more influenced by the results of the management of protected areas. The keystone also represents a quest for alliances among governmental organizations, non-governmental organizations, and the private sector in order to attain the goals set, which in fact go beyond the national boundaries.
2. Institutional reinforcement also involves other elements such as improved capacities for generating and administrating different forms of financing. All of the countries have expressed their ambition to favor the establishment of new funding mechanisms for the Andean systems to manage the protected areas. These include the mechanisms already begun by some, such as debt exchange through species in kind, uptake of CO2, or trust funds.
3. The quest for financing also highlights the need to generate means for attracting international co-operation and for bolstering subregional and binational co-operation in shared ecoregions. The preparation of a project portfolio for the Andean protected areas and the training of personnel for its planning, in keeping with the different international commitments of Agenda 21, are clearly desired by all the countries of the subregion.

4. In addition to adequate funding, institutional reinforcement also involves having sufficient available manpower with the proper levels of training. All of the Andean countries recognize the urgency to establish different means for improving the supply of staff using volunteer recruitment, civil service, in-service training, non-governmental organization collaboration, or other options.

5. The institutional debility of protected-area management that prevails in the majority of the Andean countries is one of the principal causes of the limitations which exist in their national systems. These limitations refer to the structure (management categories) and to the functioning as an authentic system, as well as to the gaps in ecological coverage. In this regard, the countries are endeavoring to strengthen the systems of protected areas so as to ensure an adequate biogeographic coverage and to establish a territorial code that leads to the conservation and sustainable use of biodiversity, using a broad spectrum of management categories.

6. In the same context of expanding the coverage and degree of representativeness of the Andean systems of protected areas, the express willingness exists on the part of the countries to ensure the functional feasibility of the existing ecosystems of the Andean subregion. All of the countries of the Andean subregion have thus clearly stated the need to promote the establishment of biological corridors among the existing areas, as well as transboundary units of subregional interest.

3.2. Improve the management of the protected areas so as to safeguard biodiversity and eliminate threats to it

7. It is widely admitted that the establishment of a system for protected areas in not sufficient to guarantee the conservation of their biodiversity. It is essential that these areas be properly managed in order to prevent or eliminate adverse effects generated by actions within their zone of influence, or by their own development programmes.

8. There is widespread concern in many Andean countries regarding the environmental impact on conservation units, not only as regards the management activities of the areas themselves but particularly as regards projects for generating services or the utilization of goods that oppose the objectives of the units, such as road construction, energy development, or others. Through the establishment of legal and regulatory instruments and the preparation of plans that consider expedite and participative processes, the Andean nations wish to promote policy for protecting biological diversity against possible dangers or negative impacts resulting from human activities.

9. There are different activities relating to the management of protected areas which, depending upon the way they are carried out, can constitute positive or negative elements as regards the conservation of biological diversity. The most traditional ones are tourism and recreational uses, those involving use for scientific or technological purposes, and the sustainable use of resources within certain permissible management categories.

10. As to tourism and recreational uses, there are various initiatives aimed at outlining a political framework regarding the role which this activity should play in the development of conservation units. This in fact constitutes a relevant alternative for public use in almost all of the Andean areas. Consequently, several countries of the subregion have formulated guidelines regarding the way in which to harmonize this potential for the economic and social good of the local communities, and society in general, avoiding the inherent risks. In this regard, the course of action that is

intended to be promoted through the management of the Andean areas is to encourage public use in keeping with the potential of each area, with a high educational factor, and within the possibilities granted by the respective management category. It is also hoped to minimize environmental impact and to make the benefit from these activities reach the local settlers.

11. Other uses as regards the management of the protected areas of the Andean countries are not envisaged as being as controversial as the danger of uncontrolled tourism and recreational use. Research, for example, is of little significance, for want of a budget, however, efforts are focused on encouraging this activity, contingent upon it being duly regulated and that it involve specific projects, preferably of benefit to the management of the areas.

12. As regards the sustainable use of biological diversity, there is a consensus among the Andean countries on the need to promote the development of models for the management of flora, fauna, water, and soil within those categories which permit it and that have appropriate zoning. One of the most concurrent points of policy in this regard is the willingness and efforts proposed to save traditional knowledge and to harmonize the protection of biological diversity and its sustainable use, to the good of local communities.

Various efforts are being made by the Andean nations to assess the direct and indirect potential of the products and services of the protected areas and, to extend the management applications to their corresponding outer buffer zones. These same buffer zones have acquired growing importance in all of the Andean countries, particularly at a time of strengthening ideas for bioregional planning. The commitment exists to encouraging a policy for including local communities in the planning and management, as well as in the promotion of activities aimed at saving the cultural heritage of the communities in and around the Andean protected areas.

IV. Regional strategy

The regional strategy proposed refers to the methodological processes and to the mechanisms that are deemed appropriate for contributing to resolving the weaknesses and problems of the Andean protected areas that are common to the different countries and where concerted action would have more beneficial effects than the unilateral actions of those same countries. All of the weaknesses identified in the diagnosis of the Andean protected areas, as well as in the policies that the nations have outlined for resolving their differences, are incumbent on the regional strategy that is being proposed. The differences that could arise refer more to the way in which to implement the strategy than to the issues it involves.

Thus, for example, strengthening the institutional capacity of the respective administrations of the protected areas might appear as a policy totally dependent upon the actions carried out within the countries. Notwithstanding, the exchange of experiences among the different national institutions can be a determining factor for individually achieving the successful implementation of the policy desired.

Based on the deficiencies found in the diagnosis and bearing in mind the framework of policies outlined by the national institutions and the opinions submitted by these institutions during the current study, the proposed strategy contains the following principal components:

- Bioregional planning and management of the protected areas and border biological corridors in the Andean environment.

- Gathering and handling of information on the Andean environment.
- Encouragement for horizontal co-operation on the Andean environment among the countries.

4.1. Bioregional planning and management strategy in protected areas and border biological corridors in the Andean environment

4.1.1. Conceptual elements

The relatively recent concept of bioregional planning and management came about as a result of a number of concerns regarding the political will and capacities of the governments to protect species of flora and fauna and to control existing wild areas. It also resulted from the consideration that in general, the majority of the protected areas are too small to maintain the entirety of their species of specific characteristics over prolonged periods. Another reason is that the results of research in recent years call for increasing the percentage of the surface area to be protected for each biogeographic region (from 10% in the early eighties to 40% at the present time).

Bioregional planning and management attempt to incorporate conservation measures in the protected areas as well as in all of their surrounding countryside, combining efforts among centralized public institutions, local governments, non-governmental organizations, and the private sector. This could be defined as a planning and management system in which ecological, social, and economic factors are balanced in order to achieve goals of conservation of biodiversity and human well-being. The geographic scale is defined based on the presence of specific problems (for instance, the migration patterns of fauna), on the functions of the ecosystems (such as the collecting of water resources), on economic activities (such as ecotourism), on natural cycles (such as volcanic eruptions), and on socio-cultural values (i.e., indigenous communities). Hence, this constitutes a change in scale in comparison with and as regards the traditional work of the planning and management of the protected areas done individually.

While the objective of working on the scale of a complete landscape or ecosystem might appear difficult to achieve, some Latin American countries have had very successful experiences in this field. These experiences have shown that when working at that scale, beyond the limits of the protected areas, the geographic space is sufficiently extensive to allow an analysis to be made of the diversity of habitat and the ecological functions and processes of the entire range of species and genetic resources.

In order to make work possible at a bioregional scale, three principal elements are required: Capacity, Participation of all affected and interested parties, Institutional cooperation.

Capacity

Bioregional planning and management is going to require scientific, technical, and political capacities that are difficult to find in one single institution with competence in the specific bioregion. Therefore, a bioregional planning and management strategy will require every type of human, infrastructure, institutional, and financial capacity. Thus, the challenge will be to establish the strategic alliances of co-operation that will lead to incorporating existing capacities, as well as to pinpoint the gaps and the ways in which to bridge them.

Participation of all affected and interested parties

Increasing the scale of planning and management beyond the limits of the protected areas to include an entire landscape and ecosystem significantly changes the number and type of affected and interested protagonists. Commonplace is that the territories close to the protected areas are privately owned, thus meaning they have human settlement and are being used by farmers, indigenous communities, companies, or local governments. The interest of these groups in the conservation of biodiversity may differ greatly, thus, the challenge will be to establish alliances in which those residents manage their territories in a manner conducive to conserving the biodiversity while reaping the benefits of its use. This challenge mainly refers to the innovative mechanisms that need to be employed so as to unite the efforts of institutions, and interested and affected parties toward a programme of common interest. In this regard, there are no valid recommendations for every situation, therefore, this matter must be dealt with on a case-by-case basis.

Institutional co-operation

To the degree that the work scale of the planning and management goes beyond the limits of the protected areas, the higher the number will be of institutions involved and the greater will be the probability of finding agreements already implemented that will probably be at odds with the conservation of biodiversity. Such is the case of the functions assumed by the central governments and how they fit in with the functions and standards applied by the provincial governments. There will also be unions, associations, indigenous councils, chambers of commerce, universities, research institutes, and private conservation organizations, among others.

The challenge in this case is establishing mechanisms that facilitate defining and focusing on common goals while respecting the respective mandates and missions of the institutions involved. More than just a simple negotiation, this very often means reviewing legislation, policies, and regulations and coordinating these elements with the management objectives that are sought.

4.1.2. Actions related to bioregional planning and management and border biological corridors

The actions associated with bioregional planning and management Andean biological corridors have been taken from the opinion of the national institutions that manage the countries' national systems of protected areas, as well as from the framework of policies formulated by the same institutions. These have been placed in ascending order, starting with the most important, according to the evaluation of these institutions and are as follows[(2)]:

The institutional and legal framework for bioregional planning and the generation of mechanisms for social participation

The institutional framework for bioregional planning takes on a high priority owing to the inherent complexity of this strategy and the necessity for this process to be permanent in time. Generally speaking, the institutions that administer the highly difficult protected areas are able to attend to at least part of the internal needs of the areas and are not normally qualified to assume responsibilities as regards the lands beyond their area of influence. On the other hand, participation refers to the strategy

(2) Annex II shows **Charter 3** which refers to the level of importance assigned by the national institutions polled concerning the different regional actions associated with bioregional planning.

of involving the variety of affected and interested protagonists through the application of criteria for bioregional planning and management and border biological corridors, strengthening the local administration of the Andean protected areas. This adds new challenges to the institutional framework.

Improvement to legislation: Establishment and management of border biological corridors and the legal instruments that back them

One of the solutions to the isolation seen in many of the Andean protected areas refers to the establishment of biological corridors that will facilitate the adaptation of nature to climatic conditions that change rapidly and will allow the migration of species to broader territories. The environment of these corridors can be protected or restored but in practice, it is highly probable that this will involve lands devoted to other uses, many of which would be incompatible with the conservation of biodiversity. The challenge then is to promote and support the transition of border protected areas to activity types such as agriculture, forestry, or the sustainable use of resources that enable the movement of native species over time. The development of biological corridors between or among the Andean nations is a significant aspiration and goal of all those countries and constitutes a long-term project that needs adequate backing in national legislation. In general terms, the Andean countries do not have legal instruments which back, regulate, or promote border biological corridors and this is a relevant issue for joint, coordinated and concerted work.

Institutional reinforcement and the formulation of criteria for establishing agreements and alliances applicable to buffer zones and to biological corridors

The criteria and mechanisms necessary for working jointly with the local settlers in the buffer zones and biological corridors can be highly varied. The objectives of biodiversity conservation will only be achieved to the degree that those inhabitants who protect and utilize biodiversity in the bioregion become guardians of their resources and manage their lands in a sustainable manner. These mechanisms must be innovative and fully accepted and they require strengthened national institutions in order to administer the new challenges of management in the buffer zones and biological corridors.

Developing new financing mechanisms

In light of the growing scarcity of state funds allocated to the Andean protected areas and within the context of their normal operational budget, there are various alternative options that need to be explored. It is hoped that the establishment of alliances through bioregional planning will increase these alternatives, mainly considering contributions from sources outside ordinary State budgets.

Developing educational and environmental communication programmes

One of the deepest ambitions of the Andean protected areas is to minimize the impact of public-use activities within the areas and to strengthen alliances with the local surrounding communities. Education and environmental communication are considered as one of the most effective tools for recruiting allies and seeking common denominators with the settlers in the area of influence.

Planning comprehensive management of border protected areas

Adjoining protected areas on the borders of the countries constitutes one of the ideal situations for connectivity and the Andean nations recognize their multiple benefits.

Notwithstanding, they also recognize different difficulties which need to be dealt with by way of specific strategies. These lands are generally difficult to reach, thus limiting contact among personnel working in the border areas. In addition, policies and laws among the countries are often contradictory, for instance, as regards trade in species or soil use. Consequently, the simple establishment of adjoining protected areas is, by itself, not a guarantee of connectivity. Mutual benefits will increase notably if the border area is managed in a coordinated manner, defining responsibilities and roles which correspond to each national institution and complementing them in the management programmes that are commonly agreed upon.

Formulation of common criteria for institutional co-ordination in bioregional planning

A recognized fact is that bioregional planning represents a great challenge in institutional co-ordination given that upon expanding the scale of work, the number and type of institutions involved grows considerably. Some Andean countries have made significant progress in this regard but within regional strategy, all of the countries place a high degree of importance on this element. Each Andean country presents a different situation with respect to their institutions but in the case of every country, they all have their governmental bodies responsible for the protected areas and rural development, local governments, non-governmental organizations, and the private sector. The strategy consists of harmonizing criteria through the exchange of experiences, be they positive or negative, in order to strengthen the coordinated work of the institutions so as to achieve common goals.

Formulation of common criteria for the establishment of new public and private areas

Bioregional planning involves the establishment of new protected areas in order to ensure the maximum possible coverage of biodiversity – one of the weaknesses of the Andean protected areas. It is also hoped to have a subregional system of protected areas that will function as such and where the entirety of the system in operation represents a higher value for conservation than the sum of the individual contributions of each of the countries. The information systems available or those that could be developed make it easier to identify the critical areas at a nation-wide level, however, if the intention is to systematize the Andean protected areas, then there must be agreed criteria for this to be established, bearing in mind the different management categories and the different options of property ownership or joint management – private, corporate, community, and non-governmental bodies or organizations.

Support for the development of infrastructure and equipment

While some countries feel that improvement to infrastructure and equipment is an important part of a regional strategy for resolving the weaknesses of the protected areas, there is also a significant number of nations that consider this to be a secondary element, probably corresponding to strategies of a national or local nature. In some respects, it could correspond to a regional level when it involves joint programmes for management in border areas (such as protection and security), or, infrastructure and mainly equipment to benefit communication and horizontal co-operation among the countries.

4.2. Strategy for information on the Andean environment

Bioregional planning strategy requires different methodological approximations, instruments, and mechanisms for their application in the Andean countries but above

all, it needs a considerable amount of scientific and technical information. Information is not only essential to the planning process but its veracity also helps by providing sound bases for decision making. While science recognizes that it is responsible for its own fragmentation, science itself shows that all environmental and social elements are related in some way or to some degree. This interrelation requires that the information be handled in a comprehensive manner and that the gathering, storage, and use of relevant information must be designed to provide facts rather than suppositions. Thus, one of the objectives of any effort toward bioregional planning must be the establishment of a permanent and dynamic database, with valid and accessible information on the physical, biotic, and socio-economic characteristics of the region.

Regional actions associated with the generation and handling of information on the Andean environment have been drawn from the opinion of the national institutions that administer the national systems of protected areas and from the framework of policies formulated by the same institutions. These have been placed in descending order of importance, starting with the highest, according to the evaluation of these institutions, and are as follows**(³)**:

4.2.1. Formation of a regional information network

The benefits obtained by the countries of the region from having a network have been clearly demonstrated in recent decades. In effect, this type of action has been classed as highly important by all of the existing national institutions. Consequently, institutional support is required in order to carry out this function, from a national viewpoint, for the gathering and handling of information based on uniform criteria agreed upon among the countries.

4.2.2. Developing a database for the Andean environment

One of the common necessities for the operation of a regional information network for the Andean countries is to have a means for the centralization and systematic use of the information as a basis for proper bioregional planning. The diagnosis has shown the scarcity of research and studies of a different nature, as well as the lack of systematization and co-ordination of the available information to the point where this has become one of the principal limiting factors in bioregional planning and management. This necessary gathering and handling of information needs to be centralized and available to all of the countries. In spite of its centralization, the design of the components of the database for the Andean environment must be harmonized among the different countries, beginning with the definition of goals and objectives, the establishment of methods for gathering the information, the scales to be used, the definition of its structure, and the designing of evaluation programmes. A degree of progress has been made by certain Andean countries as regards some natural resources, particularly in the case of Andean crops, which will serve as a valuable starting point.

4.2.3. Strengthening national agencies

Closely linked to the foregoing and in order to improve the existence and availability of information necessary to apply the criteria for regional planning, there is a need to balance the capacities of the national institutions as to the gathering and handling of information. In this regard, the need for uniform criteria and the availability of

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(3) Anexo II shows **Charter 4**, which refers to the level of importance concerning the different regional actions associated to creation and management of information.

equipment and qualified personnel, as well as permanent contact among the institutions for the exchange of information are elements worthy of important consideration.

4.3. Strategy for horizontal co-operation in the Andean environment

Activities of horizontal co-operation are considered a high priority by the Andean countries and considerable experience has already been gleaned through the Latin American Network for Technical Co-operation in National Parks and other Protected Areas, and Wild Fauna and Flora, whose International Secretariat is held by the FAO. Considering the principles and criteria of bioregional planning, this type of co-operation among the Andean countries acquires even greater importance.

Bioregional planning recognizes no international borders between countries and requires coordinated policies and plans. The individual and unilateral efforts made by some countries very often find themselves limited to those ecoregions that have a broad geographic distribution and go beyond the ambit of one single country, as an individual. The same context highlights the importance of orienting and developing concerted legal and administrative mechanisms that are necessary in order to apply bioregional planning criteria focused on the conservation of biological diversity, including the management of protected areas. There is also the unquestionable need to co-ordinate efforts among the Andean countries aimed at benefiting the development of the institutions that manage the protected areas so they may fulfil their role as a catalyst and coordinator in bioregional planning.

It is likewise necessary to resolve the inequalities that are evident among the Andean countries as regards protection of biological diversity. In many cases, these inequalities are the result of differences in the frailty of biodiversity among the countries owing to reasons of soil, geomorphology, and climate. Notwithstanding, in other cases, there is an evident scarcity of technical measures or information which could be transferred from one country to another so as to encourage the proper and sustainable use of biodiversity. In this regard, strengthening of the mechanisms for facilitating the exchange of technology and information acquires fundamental importance.

Regional actions concerning horizontal co-operation in the Andean environment have been drawn from the opinion of the national institutions that administer the national systems of protected areas and from the framework of policies formulated by the same institutions. These have been placed in descending order of importance, starting with the highest, according to the evaluation of these institutions, and are as follows**(4)**:

4.3.1. Activities relating to the creation of institutional mechanisms

Formation of an Andean Sub-Network for technical co-operation. The Latin American Network for Technical Co-operation in National Parks and other Protected Areas, and Wild Fauna and Flora, whose International Secretariat is held by the FAO, constitutes a solid international framework for bringing the Andean countries together. Despite the fact that by comparison with other thematic actions concerning the strategy of horizontal co-operation the creation of the Sub-Network did not receive the highest preference, all of the Andean countries consider this mechanism to be important. Some of the countries in fact consider it to be the most important of all. Linked to the Latin American Network, the Andean countries must organize themselves

(4) Appendix II shows **Charter 4** which in its second part refers to the degree of importance assigned to the regional actions associated with horizontal co-operation.

internally through a National Network that brings together the institutions and experts interested in bioregional planning. Without doubt, this mechanism will facilitate the exchange of information and the participation of all those to whom management and development proposals correspond.

4.3.2. Regional thematic activities

Horizontal co-operation among the Andean countries can come in different forms and can cover different issues. The list of activities shown further on was put in order of the priorities of the national institutions polled in this study. The subjects relating to financing mechanisms were the highest priority issues to be dealt with jointly among the countries through seminars or workshops. Similarly, training and technical exchange were also considered of interest as a strategy to improve institutional capacities. The full list of elements selected, in order of priority, is as follows:

- Development of workshops and training courses.
- Development of technical meetings on priority issues of common interest (for instance, a joint plan of action).
- Implementation of technical exchanges.
- Identification of needs and training strategies.
- Preparation of teaching materials and technical documents.
- Portfolio of successful experiences in bioregional planning.
- Development of a formal and an informal training plan.
- Preparation and distribution of technical educational materials.
- Roster of experts and institutions.

4.4. Institutional framework for the implementation of Regional Strategy

***Note**: This section will be developed further after its analysis at the International Workshop. Here, the institutional context deemed the most appropriate for channeling the implementation of Regional Strategy should be explained (for instance, Mercosur or another that will bring the participating countries together in a subregional context).*

V. Profile of a regional project for the GEF

I. Eligibility

Type of Project:	**Global Environmental Facility (GEF), Project Preparation and Development Facility (PDF), Block B**
Participating countries:	Andean countries of Latin America (Argentina, Bolivia, Colombia, Chile, Ecuador, Peru and Venezuela)
Title of Project:	Protected Areas and Bioregional Management for the Conservation of Biodiversity in the Andean Environment
Eligibility of the countries:	Ratification of the Convention on Biological Diversity
Focal Area of the GEF:	Biological Diversity
Operational Programme:	Forest Ecosystems, Arid and Semiarid Zones, and Mountains
Project Preparation and	US$350,000

Development Facility (PDF) requested:	
Agency of Implementation:	UNEP
Executing Agency:	International Technical Secretariat of the Latin American Network for Technical Co-operation in National Parks and other Protected Areas, and Wild Fauna and Flora (FAO)
Operational Focal Points:	Respective institutions of the Andean countries
National counterpart agencies:	Institutions which manage the national systems of protected areas of the Andean countries
Preparation of the Project:	18 months
Estimated starting date:	March 2000
Regional priority:	XI Meeting of the Forum of Environment Ministers of Latin America and the Caribbean, Lima, Peru, 1998 (Decision N° 2)

5.1. Link between the Project and National Priorities, Action Plans, and Programmes

All of the participating countries have ratified the Convention on Biological Diversity and have, in varying stages of development, some type of document which constitutes a national strategy for the conservation of biodiversity, closely linked with documents on policy for national systems of protected wild areas. In every case, the priorities of action that these documents establish are closely connected with the Project. In those policy documents, some countries in fact expressly specify promoting strategies for the implementation of ecoregional corridors intended to establish connectivity between protected areas and to generate larger territorial spaces which contain them, in a framework of social harmony and sustainable development.

The Convention on Biological Diversity stresses that the fundamental demand for the conservation of biological diversity is the *in situ* conservation of ecosystems and natural habitats and the restoration of viable populations of species in their natural environments. In this regard, the Convention binds the countries participating in the Project to take significant actions in different key matters vital to the preservation of biodiversity.

The countries have also assumed other international commitments for the conservation of biological diversity. These include: the Convention for the Protection of Flora, Fauna, and the Natural Scenic Beauty of the Countries of America; the Convention for the Protection of the World's Cultural and Natural Heritage; the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); the Convention on Wetlands of International Importance, especially as the Habitat of Aquatic Wildfowl (RAMSAR); and Agenda 21, among others.

In addition, several initiatives for regional technical co-operation have had some relationship with critical ecoregions of South America that have made it possible to identify action priorities regarding the conservation of biological diversity and that urgently require appropriate follow-up. Such is the case of the FAO/UNEP Programme developed between 1985 and 1995, including specific activities related to the management of protected areas, and wild flora and fauna. During that entire period, the aforementioned Programme strengthened the activation of the Latin American Network for Technical Co-operation in National Parks and other Protected Areas, and Wild Fauna and Flora, whose International Secretariat is held by the Regional Office of the FAO for Latin America and the Caribbean and which brings together more than 1,000 experts and institutions from 19 countries of the region.

Within the context of the above-mentioned FAO/UNEP Programme and in the framework of the activities of the Park Network, important proposals were tabled for the Andean subregion. Over the years, these proposals made it possible to initiate among the countries specific and joint activities regarding different topics; for instance, the rational management species of fauna of commercial interest and the management of border protected areas. In addition, proposals were drawn up on policies, strategies, and actions for the conservation of biological diversity in the Andean environment that require adequate implementation and follow-up.

Also in the context of the Park Network, the FAO, the IUCN, and the Government of Colombia together organized the First Latin American Congress on National Parks and other Protected Areas (Santa Marta, Colombia, May 21 through 28, 1997). On that occasion, all of the Latin American countries analyzed the progress achieved, as a follow-up to 4th World Congress on National Parks (Caracas, 1992) and defined the actions and strategies for the following five years. At this event, the countries agreed to very strongly promote and reaffirm the concepts of nucleus zones, bioregions, corridors connecting bioregions, networks at all levels, restoration, and systems of protected areas. The proposals for action likewise showcased the need to foster subregional and binational co-operation given the fact that several countries share important ecoregions, protected areas, and environmental resources that are dynamically related. In the latter regard, considerable emphasis was placed on the urgency of developing conservation strategies flexible and complementary to the protected areas, promoting connectivity among natural spaces within the bioregional framework.

The mechanism of the Park Network has been sought by the countries of the region for the formulation of a Regional Project which deals with the key needs for the conservation of biodiversity in priority shared ecoregions of Latin America and the Caribbean. Precisely one of the decisions to emerge from the 11th Meeting of Environment Ministers of Latin America and the Caribbean held in Lima, Peru, on March 10 through 12, 1998, was to support the preparation, presentation, and negotiation of a project of this nature before international financial organizations. The same decision called for the FAO, together with other international organizations, to move forward with the negotiations necessary to support the countries of Latin America and the Caribbean in the definitive formulation of the Project and its submission to the Global Environment Facility (GEF).

Following those recommendations and within the framework of the Latin American Park Network, the Regional Office of the FAO for Latin America and the Caribbean organized the Meeting of National Network Coordinators held in Brazil in May 1998. Those present at the meeting discussed and approved the outlines of this proposal, originally put forward by the entire region. The difficulty involved in efficiently dealing with an initiative that covers all of the priority ecoregions and the need to strongly focus on activities in each ecoregion led to the decision to prepare subregional proposals that solely involve certain priority shared ecoregions so as to initiate a gradual process of bioregional planning. Thus, the Andean environment emerged as a priority to begin this process, which has received the support of the UNEP Regional Office for Latin America and the Caribbean, based on the Park Network agreements.

The Project is in line with different national priorities, plans of action, and programmes, and includes specific plans and proposals for biological corridors. Such is the case of the Andean sector of the Isiboro Securé National Park and Indigenous Territory (Bolivia), the Andean environment of the Amboró National Park and Comprehensive Management Area (Bolivia), the Andean sectors of the Carrasco and Pilón Lajas National Parks (Bolivia), and the National Andean Fauna Reserve (Bolivia). In addition, priorities and plans exist for a comprehensive management of binational protected

areas such as the Lauca National Park (Chile), the Sajama National Park (Bolivia), the Vicente Pérez Rosales National Park (Chile), the Nahuel Huapi National Park (Argentina), the Lanín National Park (Argentina), and the Villarrica National Park (Chile). There are also plans for the comprehensive management of trinational protected areas, including the sustainable use of species of fauna, as is the case of the Eduardo Avaroa Natural Andean Fauna Reserve (Bolivia), the National Flamingo Reserve (Chile), and the Laguna Pozuelos Biosphere Reserve (Argentina).

5.2. Justification, Strategies, and Objectives of the Project

5.2.1. Summary of the Project

The PDF Project proposes formulating a Total Project aimed at global sustainable development through the application of criteria for bioregional**(5)** planning and management in the administration and development of protected areas as a key strategy for the conservation of biodiversity and the generation of environmental goods and services in the Andean countries. By way of a highly participative process in the two identified areas of action of the Project, the PDF will develop strategies for strengthening the conservation of biodiversity through the establishment of new protected spaces and connectivity between the protected areas using bioregional planning criteria. The PDF will generate a detailed work programme for the areas of action and for demonstration border areas to be chosen, it will lay the foundations and will develop harmonious actions so that this programme may be implemented through a Total Project. In addition, will design a work programme to strengthen horizontal co-operation and institutional development through technical exchanges and training activities.

5.2.2. Justification of the Project

Owing to a variety of natural processes, biological diversity is not evenly distributed on earth. At a world level, more than two thirds of the species are found in the tropics and the variability within the species of this area is probably also even greater. As a result, biological diversity is found in what today is the string of developing countries among which, Latin America and the Caribbean is a privileged region owing to its exceptional variety of habitats. Nevertheless, this great variability of ecosystems, species, and genetic resources of the region is in grave danger for different reasons. These include the deterioration and fragmentation of the habitat, the invasion of introduced species, the over-exploitation of live resources, pollution, agriculture and industrial forestation, as well as a changing world climate.

Total conviction exists that the best way to conserve species is to maintain their habitats, prevent the defacement of key natural ecosystems, and manage and protect them efficiently. In this regard, *in situ* conservation is the most appropriate for guaranteeing continuity in the evolution of endangered environments.

As a result of the foregoing, the countries of Latin America and the Caribbean have established over 2,000 protected wild areas which cover a surface area of more than 200 million hectares. The principal criteria currently applied for establishing these conservation units are the presence of biological wealth, the existence of fauna

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(5) "Bioregions" are understood as meaning the collection of land and aquatic ecosystems defined by their climate, vegetation, soils, landscapes, culture, and history. "Bioregional planning" refers to the programming of actions within a bioregion aimed at establishing a work strategy where ecological, social, and economic factors can be balanced in order to achieve goals of conservation of biological diversity and community support.

conservation sites, the protection of hydrographic basins, the existence of unique or representative plant communities or formations, the presence of endemic species and genetic resources, and the geomorphologic or landscape value.

Nevertheless, the existing protected areas are not sufficient guarantee for the conservation of biological diversity and the governmental organizations responsible for those lands are exposed to permanent clashes with the traditional productive sectors. As a result, a lack can still be seen of effectiveness for protecting the entirety of the endangered ecosystems, as well as deficiencies in the management of the existing protected areas. This problem worsens if one considers that many of the protected areas of Latin America are surrounded by agricultural land and only constitute a fragment of the extensive lands which were once the habitat of many species of plants and animals.

The dangers and risks to fragmented environments increase as the distance widens between the fragments, which is an evident tendency in Latin America. On the one hand, the survival of ecosystems, species, and genetic resources depends upon the availability of surface areas large enough to maintain viable populations. On the other hand, there is a growing lack of extensive surface areas in an adequate state of conservation in order to establish new protected areas of different categories and that do not compete with other land uses.

Under these circumstances, the coordinated work of the countries of the region as regards the conservation of biological diversity takes on special significance, more so when dealing with priority**(6)** ecoregions which recognize no administrative frontiers. In this situation, all actions for the conservation of biological diversity will have an important catalyst effect and will strengthen ecological interactions and the flow of genetic resources within these valuable natural environments.

It has been stressed at recent international events that actions for the conservation of biological diversity must be oriented toward four essential goals: i) maintain and restore high-priority sites for the value of their biological diversity; ii) ensure migratory paths for species; iii) promote comprehensive management; and, iv) interconnect normally isolated protected areas through the establishment of biological corridors. This new bioregional planning strategy well ensures human well-being, as well as the survival of the ecosystems, species, and highly valuable genetic resources.

The new bioregional planning strategy takes into consideration the following four elements:

- A nucleus zone attempted to be kept free from human intervention, except for actions which do not alter the biological diversity.
- A buffer zone, around the nucleus zone, with management activities that minimize any impact on the natural values of the nucleus zone.
- Biological corridors which among each other, interconnect with various nucleus zones and their respective buffer zones and allow ecological interaction and genetic flow to occur.
- Bioregions – that constitute the settlement area and niche of the nucleus zones, the buffer zones, and the biological corridors – where the local communities, landowners, and the users of the resources live and work.

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(6) Of priority I or Ia, according to Dinerstein, E., D.M. Olson, D.J. Graham, A.L. Webster, S.A. Primm, M.P. Bookbinder, and G. Ledec. 1995. *An evaluation of the state of conservation of the land ecoregions of Latin America and the Caribbean.* World Bank. Washington, D.C.

The administration and management mechanisms to link different protected areas and buffer zones, with a high value of biological diversity, and using biological corridors in the critical ecoregions of South America, constitute one of the essential elements of this Project. It should be mentioned that South America contains six out of the nine bioregions identified for all of Latin America and the Caribbean, 11 major types of habitats, and 98 ecoregions (World Bank, 1995).

5.2.3. Summary of the general strategy of the Project

The general strategy of this Project is: i) act upon valuable initiatives already formulated or in force for the Andean countries (Argentina, Bolivia, Colombia, Chile, Ecuador, Peru and Venezuela) in order to reinforce the successful experiences in the conservation and utilization of biological diversity; ii) act in critical regions of the seven countries that are classified as having a high world-wide priority; and, iii) utilize bioregional planning processes that are being promoted in every region of the world as a modern-day tool for the management of natural resources and the conservation of biological diversity and involve the participation of governmental organizations at different levels, non-governmental organizations, and the private sector through participative planning processes.

5.2.4. Geographic areas of action of the Project

The geographic areas of action of the Project have been analyzed in recent years at different meetings of the Park Network. During the last Meeting of Park Network Coordinators held in Brazil in 1998, these geographic areas were defined using the following basic criteria:

> *Take as a base the proposals from the study on the state of conservation of the land ecoregions in Latin America and the Caribbean (World Bank, 1995), prioritizing those natural environments considered to be critical and endangered.*

From among the critical and endangered natural environments, assign preference to those shared by two or more countries in order to foster coordinated and harmonized work among the countries, to their common benefit.

Based on these criteria, the following geographic areas of action of the Project were defined for the Andean environment: Andean Mountainous Tropical and Subtropical Moist Forests (Argentina, Bolivia, Colombia, Ecuador, Peru and Venezuela), and Andean Subpolar Forests (Argentina and Chile). These geographic areas include 11 ecoregions classified in one of the two highest levels of priority for conservation (Level I, ecoregions with the highest priority on a regional scale and level Ia, ecoregions raised to the highest priority so as to achieve bioregional representation), according to the World Bank study (Dinerstein, E., D.M. Olson, D.J. Graham, A.L. Webster, S.A. Primm, M.P. Bookbinder, and G. Ledec. 1995. *An evaluation of the state of conservation of the land ecoregions of Latin America and the Caribbean.* World Bank. Washington, D.C.).

5.2.5. Objectives of the Project

General objective

The general objective of the Total Project is to contribute to global sustainable development by strengthening the role of the Andean protected wild areas as strategic spaces for the conservation of biodiversity and the generation of environmental goods and services in Latin America and the Caribbean. By way of a highly participative

process in the geographic areas of action, the Project will reinforce the conservation of biodiversity through the establishment of new protected areas and by strengthening those that already exist, as well as biological connectivity in the protected areas using bioregional planning criteria.

Specific objectives

The specific objectives of the Total Project are as follows:

- Formulate strategies and plans of action for linking the national systems of Andean protected wild areas in priority ecoregions shared by the countries.
- Carry out coordinated demonstrations among the Andean countries in border protected areas.
- Improve national capacities to generate and handle information conducive to enabling bioregional planning and connectivity among the Andean systems of protected areas.
- Strengthen technical co-operation among the Andean countries.

5.3. General Results Expected from the Project

1. The priority areas of action of the Project in the Andean countries will have available and will be implementing a bioregional planning strategy complementary to national biodiversity strategies, for harmoniously linking among the countries their national Andean systems of protected areas. This strategy that will be implemented will include the creation of new protected areas, the redefinition, whenever necessary, of those already existing, and will place particular emphasis on the connectivity of these initiatives in the form of transboundary biological corridors, with the active participation of the private sector, non-governmental organizations, central governments, local governments, and the communities so as to ensure their feasibility and future funding.
2. A series of management actions in border protected areas will have been implemented and they will be monitored in the Andean environment of the countries of Argentina, Bolivia, Colombia, Chile, Ecuador, Peru and Venezuela. These management actions implemented will be centered on border protected areas and their zones of influence – those already existing or that have been established as the result of the activities of the Project. Management actions will have been developed within the actual protected areas under a scheme of planning coordinated among the countries for their border areas and aimed at connectivity among them. This series of demonstrations will have been duly planned and agreed upon by the countries and will have been incorporated into the processes of regional development in each of the countries with the participation of the private sector, non-governmental organizations, local governments, and community organizations, among others, having established every kind of alliance in order to make the implementation of the bioregional plans feasible. These demonstrations will have been spread widely in the countries of the region so they may serve as models in other priority shared ecoregions in Latin America.
3. Mechanisms of information and monitoring will be operating for the Andean environment of the respective countries. These mechanisms will use existing information nodes in the countries, reinforced by the Project, constituting and implementing an information network for the Andean environment which will make

it possible to carry out, over time, adequate monitoring of the actions undertaken by the Project.

4. The Andean countries will have improved their institutional capacities through the operation of the appropriate mechanisms of co-ordination and horizontal co-operation that will benefit continuity of the actions implemented under the Project. These mechanisms will make it possible, over time, to keep up the processes of coordinated work relating to bioregional planning among the Andean countries, including the management of the border protected areas, the exchange of experiences – positive as well as negative – among institutions and experts as regards the management and administration of the territories involved, and the keeping of a roster of experts and technical and educational materials. These horizontal co-ordination mechanisms will also have led to national and regional actions for training, and improving institutional capacities, with the active participation of the private sector, non-governmental organizations, central governments, local governments, and community organizations, with a significant multiplying effect.

5.4. General activities planned to achieve the results of the Project

5.4.1. Formulation of strategies to make bioregional planning feasible, including border biological corridors, in the geographic areas of action of the Project

This group of activities will be centered on formulating strategies in the geographic areas of action of the Project, complementary to eventual national biodiversity strategies. The lines of action will be as follows:

1. Prepare a diagnosis of each geographic area of action of the Project which contains the general information on the state of conservation of the biodiversity, the description of its use, the description of the existing protected areas, the degree of their representativeness and coverage, and their insertion into the development process.
2. Analyze the institutional and legislative framework of the respective countries in order to detect gaps and needs for action so as to give feasibility to bioregional planning and the establishment and management of biological corridors.
3. Identify the areas that need to and can be feasibly protected through the implementation of actions conducive to the creation of new protected areas, or, the redefinition of those already existing, whenever necessary, with the inclusion in this process of the private sector, non-governmental organizations, and local governments so as to ensure connectivity, representativeness, coverage, and the feasibility of the protected areas in each geographic area of action of the Project.
4. Propose the necessary social agreements and institutional conventions aimed at guaranteeing the sustainable use of biodiversity and the stability or restoration of landscapes in the processes of socio-economic development. The purpose of this is to achieve connectivity and linkage among the protected areas, based on territorial zoning using bioregional planning criteria, including biological corridors.
5. Design new mechanisms of financing for the bioregional planning processes that involve the protected areas and biological corridors, with the participation of the private sector, non-governmental organizations, and local governments.

5.4.2. Implementation of demonstrations in border protected areas

This group of activities will be focused on developing demonstrations in border protected areas and in their zones of influence that will be identified within the ecoregions involved in the Project. The activities will be as follows:

1. Agree on the coordinated planning and management of the selected border areas and their zones of influence, including biological corridors.
2. Support their development and equipping in accordance with the plans for their management.
3. Encourage the incorporation of the demonstration areas in the regional development processes, with the participation of the private sector, non-governmental organizations, and local governments, establishing new kinds of alliances so as make bioregional planning feasible.
4. Promote and carry out programmes in environmental education and communication, community training, and nature interpretation.
5. Generate mechanisms for social participation in the conservation and sustainable use of biodiversity.

5.4.3. Developing mechanisms for information and monitoring in the geographic areas of action of the Project

These activities will be aimed at developing mechanisms for the generation, concentration, and shared use of the information on the geographic areas of action of the Project as a basis for decision making and the adoption of common strategies. To this end, the Project will carry out the following actions:

1. Identify the existing nodes of information on the different geographic areas of action of the Project, strengthen the national counterpart agencies, and provide the inputs to be able to access these nodes, forming a regional information network.
2. Agree on and apply a monitoring mechanism that will make it possible to evaluate the actions undertaken and to expand the ecoregional databases through the incorporation of all the information produced during the implementation of the Project.

Amongst other data, this information will contain: basic and thematic cartography; coverage and representativeness of the protected areas, current and potential land use; forms of utilization of the natural resources; socio-economic information on the populace; traditional use of the biodiversity; projects and experiences in the management of natural resources; the application of standards for biosafety, and the management of superimposed protected areas developed in the region, among others.

5.4.4. Promotion of horizontal co-operation

This group of activities will constitute the integrating component of the Project at regional level and refers to institutional co-ordination at local, national, subregional, and regional levels which will require new procedures for analysis and methodology planning. The actions will be:

1. Strengthen horizontal technical co-operation based on the existing mechanisms in the region, with special emphasis on the procedures already established by the Latin American Network for Technical Co-operation in National Parks and other Protected Areas, and Wild Fauna and Flora, particularly by way of the following elements:

- A roster of experts and national as well as international institutions involved in biodiversity and the Andean protected areas.
- A short and medium-term programme for intraregional technical exchange.
- A portfolio of the most suitable practices for the conservation and sustainable use of natural resources in both protected areas as well as buffer zones and biological corridors.
- A set of technical and educational materials.

At the present time there exists a variety of situations regarding the management and administration of protected areas in Latin America and the Caribbean which constitutes an active technical, legal and operational instrument capable of generating added value for the region. The exchange of experiences of such situations – positive or negative – could bolster the procedures for managing the Andean protected areas and their application in the different priority ecoregions.

2. Support national and regional initiatives for training, as well as new strategies for formal and informal education that will make it possible to improve the capacity of institutions and society, exploiting key strengths.

   Training will target officials of the services that administer the protected areas and to the communities directly involved with the priority ecoregions. This includes the following actions:

   - Identify the training needs of the human resources directly involved in the Project.
   - Prepare a training plan, in a participative manner.
   - Develop workshops, courses, and audio-visual or printed materials defined for carrying out the Plan.

II. Description of the proposed activities submitted to the Project Preparation and Development Facility (PDF Block B)

The proposed activities submitted to the Project Preparation and Development Facility (PDF) that will make it possible to develop the details and arrangements for the implementation of the Total Project will be carried out within a period of 12 months, executed through the Latin American Network for Technical Co-operation in National Parks and other Protected Areas, and Wild Fauna and Flora (FAO-RLC).

The FAO-RLC will co-ordinate the project and will be responsible for the general running of the PDF. A PDF Administrator will be responsible for the day-to-day labors of the Project, with the support of three other experts in : i) strategic planning and incremental costs; ii) management of the protected areas; and, iii) bioregional planning and rural development.

The PDF will be carried out in such a way that each activity outlined for the Total Project will complement the activities underway in the geographic areas of action of the Project and will be considered as a baseline. This will make it easier to identify the incremental cost of the actions of the Total Project as regards the conservation of biological diversity in the region. All the plans and programmes underway will be carefully evaluated given that there are various national initiatives on the conservation of biological diversity and several countries are receiving considerable outside financial help for environmental affairs. The incremental cost will depend on the alternatives

that provide regional and global benefits over and above those that are obtained from the baseline. For this reason, it is essential that the PDF work team have an expert in the formulation of projects based on incremental costs.

The PDF will focus on structuring the components of the Total Project, bearing in mind its bioregional planning approach where special emphasis will be placed on the different options for establishing new protected spaces in the geographic areas of action of the Project, including biological corridors, and, options will be designed for the utilization of new financing mechanisms. Emphasis will also be placed upon the implementation of demonstrations in selected border protected areas and their zones of influence, and upon including the participation of the private sector, non-governmental organizations, and local governments.

Activity 1: A Project Administrator and the rest of the experts for the work team will be sought out and recruited, with the latter falling under the supervision of the Administrator. In addition, a Project Executive Committee will be installed. This will be comprised of the Project Coordinator (FAO), the Project Administrator, three representatives from the Park Network (one each from the northern, central and southern Andes, respectively), one representative from UNDP/UNEP, and from other international or multinational non-governmental organizations considered pertinent. The function of this Committee will be to analyze the detail of the PDF components, review the execution of the work plan, and co-ordinate the channels of communication among the areas of action of the Project.

> **Products:** Work Plan, selection of the Work Team, institutional co-ordination in the geographic areas of the Project.

Activity 2: In close contact and collaboration with the respective National Park Network Coordinators who will be installed in counterpart institutions, the PDF work team will compile the bibliographic information available on biodiversity resources, land use and holding, and protected areas in each geographic area of action, and, it will analyze the national and regional projects and activities of the Andean countries, particularly all of the projects that involve the conservation and sustainable use of biological diversity. The National Biodiversity Strategies being prepared in the Andean countries will be analyzed in detail so as to establish their co-ordination in the Project. These studies will make it possible to establish an information baseline.

> **Products:** Technical documents on biological diversity, dangers and their causes, and an analysis of the approach of the projects on biodiversity and the specific needs in each geographic area of action of the Project.

Activity 3: The PDF work team will explore options for the generation, concentration, and shared use of the information on the geographic areas of action of the Project as a base for decision making and the adoption of common strategies. To do this, it will identify the already existing information nodes in the different geographic areas of action of the Project, and will visualize the needs and type of inputs in order to access these nodes with a view to establishing a regional information network. The type of background to be analyzed in the information nodes will include, amongst other things: basic and thematic cartography, coverage and representativeness of the protected areas, current and potential land use, forms of utilization of the natural resources, socio-economic information on the populace, traditional uses of biodiversity, projects and experiences in the management of natural resources, the application of biosafety standards, and, management of superimposed protected areas developed in the region, among others.

> **Products:** Technical documents that will make it possible to visualize the alternatives for the start-up of a database and the magnitude and type of

information to be included on each of the geographic areas of action of the Project.

Activity 4: The work team will analyze the institutional elements in the areas of action of the Project, it will establish contact with the corresponding institutions, and will set up broadly participative Subregional Committees; one for each area of action of the Project. These Committees will collaborate in the planning and organization of the Project activities in each of the foregoing areas and will be comprised of representatives from the corresponding national counterpart institutions and other organizations considered pertinent, including non-governmental organizations, the academic sector, and the private sector.

Products: Strategies for institutional co-ordination, identification of interested and affected parties in the areas of action of the Project, and, Subregional Committees for the areas of action.

Activity 5: An analysis will be made of the areas of action of the Project specifically aimed at identifying the priority needs and the elements and activities considered relevant as components of the Total Project, with a proposed work plan for each one of the areas, as well as strategies for the execution of said plan. The proposed work plan will include the potential for the creation of new areas, gaps in ecological coverage, the magnitude of the needs for redefining the existing protected areas, criteria for gauging the effectiveness of the management of existing areas, the potential for biological corridors, and options for local-government and private-sector contribution, among others. In the execution of these studies, close contact and the exchange of information will be maintained with the Subregional Committees and field visits will be made.

Products: Discussion documents detailing the work programmes in the areas of action of the Project based on the considered to be priority, as well as their potential. These will include proposals for the selection of border protected areas and their zone of influence, with potential for developing demonstrations.

Activity 6: Workshops will be held in the areas of action of the Project so as to analyze and agree on the content of a work plan and on the specific protected areas where demonstrations are to be centered, based on the studies carried out on each one of the areas of action. These Workshops will be broadly participative and will include all of the bodies and institutions involved, i.e., governmental, non-governmental, and private, and will be coordinated by the respective Subregional Committees.

Products: Objectives, goals, concerted work plans and programmes in the areas of action of the Project, and the selection of border protected areas and their zones of influence in order to concentrate demonstrations as basic inputs for the Total Project.

Activity 7: A detailed study will be carried out in each one of the border protected areas, including their surrounding zones, selected for their potential or current capability for demonstrations, within the geographic areas of action of the Project. The purpose of this is to analyze in detail the following elements:

1. Options for planning and management coordinated among the institutions involved.
2. Programmes and plans for financing and the generation of income from the protected areas.
3. Level of requirements of infrastructure and equipment, based on management plans.

4. Degree of integration of demonstration-area management in the processes of regional development.
5. Potential and alternatives for carrying out programmes for educational and environmental communication, community training, and nature interpretation.
6. Potential for social participation in the conservation and sustainable use of biodiversity.

   Products: Technical work documents detailing specific proposals for carrying out work programmes and plans in selected border protected areas and their zones of influence for the concentration of demonstrations.

Activity 8: Workshops will be held in each one of the selected border protected areas and their zones of influence within the areas of action of the Project in order to analyze and agree on the content of a work plan for demonstrations, based on the studies carried out on the areas of action. These Workshops will be broadly participative and will include the academic sector and all the bodies and institutions involved – governmental, non-governmental, and private.

> **Products:** Objectives, goals, concerted work plans and programmes in the areas of action of the Project, and the selection of border protected areas and their zones of influence in order to concentrate demonstrations as basic inputs for the Total Project.

Activity 9: The PDF work team will analyze the options and magnitude of a group of activities that will constitute the integrating component of the Total Project for the entire Andean environment. This activity will consist of detecting operational mechanisms for strengthening horizontal co-operation and the possible tools to be developed through the Total Project, such as the following:

1. Keep a roster of individual experts and national as well as international institutions competent in the subject.
2. The options and topics for intraregional technical exchange.
3. The type of practices most appropriate for the conservation and sustainable use of natural resources in the nucleus protected areas, as well as their buffer zones and biological corridors.
4. The needs and alternatives for producing a set of technical and educational materials.
5. Specific needs and options for personnel training.

   Product: Technical document with the alternatives and magnitude of the actions of horizontal technical co-operation as a basic input for the Total Project.

Activity 10: Taking as a base the above-mentioned activities, the PDF work team will formulate a draft for Project Proposal. This discussion document will include a specific and detailed description of the activities and methods proposed so that through the Total Project, the following is achieved:

1. Prepare strategies for the conservation of biodiversity, complementary to and coordinating with national strategies on the subject, and an information baseline on the geographic areas of action of the Project, as a basis for decision making and the adoption of common strategies.
2. Strengthen mechanisms for the generation, concentration, and shared use of the information on the geographic areas of action of the Project.

3. Develop demonstrations in the border protected areas and their zones of influence identified for each ecoregion, including the establishment and management of biological corridors.
4. Revitalize the integrating component of the Total Project throughout the Andean environment, including training and institutional co-ordination with all of the protagonists at local, national, subregional, and regional levels.
5. Evaluate the baseline and incremental costs of the Total Project.

   Product: Draft discussion document for Proposal of the Total Project, including calculations of the baseline cost, as well as the incremental costs.

Activity 11: The draft for Project Proposal will be distributed among the countries of the region and will be analyzed at an International Workshop. Following the Workshop, the final preparation of the Project Proposal will begin, in the corresponding format. The final-revision Workshop will include the participation of the Project Executive Committee, the National Park Network Coordinators, representatives from UNDP, UNEP, the World Bank, and other international or multinational non-governmental organizations considered pertinent. Based on this revision, the final version of the Project Proposal will be prepared and submitted to the GEF for consideration.

Product: Project Proposal Document.

III. Eligibility and strategy for the implementation of the Total Project

The Project qualifies within the GEF Operational Programme corresponding to Forest Ecosystems, Arid and Semiarid Zones, and Mountains, and responds to the commitments assumed by the countries of Latin America and the Caribbean upon subscribing and later ratifying the Convention on Biological Diversity. It is hoped that the Total Project will provide models for comprehensive management and connectivity among the protected areas in critical environments for the conservation of biological diversity and that these models are replicable in other environments in the region, or beyond.

IV. Input from the countries

This Project is the result of the will and lengthy negotiation of the countries of Latin America and the Caribbean, particularly through the Latin American Network for Technical Co-operation in National Parks and other Protected areas, and Wild Fauna and Flora, under the aegis of the International Secretariat of the FAO-RLC. It is widely supported by all the directors of the systems of protected areas and by the institutions of the countries responsible for the conservation of biological diversity. The negotiation process culminated in the decision to support the Project adopted at the 11th Meeting of Environment Ministers of Latin America and the Caribbean held in 1998 in Lima, Peru (Decision N° 2).

The countries will contribute significantly to the funding of the Project, earmarking financial resources from other outside sources, as well as internal sources. In addition and as national counterparts, all of the countries will place their full technical and institutional capacities at the disposal of the Project so as to properly develop the activities planned. In specific terms, they will input the technical capacities for the co-ordinations referred to in this proposal.

V. Input from the FAO

Technical staff from the FAO will participate in the execution of the PDF for the formulation and initial implementation of the Total Project, as input from the Organization. It might also help in the funding of the necessary international technical assistance of the PDF through a Project for Technical Co-operation.

VI. Relationship between national activities funded by the GEF and other initiatives

The Project is in line with different national activities and priorities, some more advanced than others, but all closely linked with the Project. Such is the case of the Andean sector of the Isiboro Securé National Park and Indigenous Territory (Bolivia), the Andean environment of the Amboró National Park and Comprehensive Management Area (Bolivia), the Andean sectors of the Carrasco and Pilón Lajas National Parks (Bolivia), and the National Andean Fauna Reserve (Bolivia). In addition, priorities and plans exist for a comprehensive management of binational protected areas such as the Lauca National Park (Chile), the Sajama National Park (Bolivia), the Vicente Pérez Rosales National Park (Chile), the Nahuel Huapi National Park (Argentina), the Lanín National Park (Argentina), and the Villarrica National Park (Chile). There are also plans for the comprehensive management of trinational protected areas, including the sustainable use of species of fauna, as is the case of the Eduardo Avaroa Natural Andean Fauna Reserve (Bolivia), the National Flamingo Reserve (Chile), and the Laguna Pozuelos Biosphere Reserve (Argentina).

In addition, there are other recent binational proposals whose consideration is essential. One such example is the Condor Mountain Range shared by Peru and Ecuador. The new Treaty signed by both countries provides the political framework for the creation of new protected areas shared by both countries in one of the largest and most intact remaining Lower Andean Forests. This initiative contemplates determining the state of the flora and fauna, establishing a soil-referenced GIS database, delimiting, zoning, and preparing a management plan for a border protected area between Peru and Ecuador, contributing to the mitigation of dangers to biodiversity, encouraging the participation of the native communities, and developing an environmental monitoring system.

There are also national initiatives which should be carefully coordinated with the Project. One such case is the GEF project (PDF block A) on Public-Private Mechanisms for the Conservation of Biological Diversity in the Valdiviana Forest Zone in Chile. This initiative becomes linked with the Project by developing and testing the feasibility of mechanisms which involve the regional authorities as well as the local communities in the management of protected areas and, by allowing the financial, technical, and administrative participation of the private sector in the protection of critical areas. The aforementioned objectives are closely related to the bioregional planning, including biological corridors, that it is intended to establish manage through the Project.

Another case is that of Colombia which currently has a PDF block A for the formulation of a project for the Colombian Massif zone that includes five areas under the National Park System and whose objective is the reinforcement and consolidation of the already existing protected areas. Colombia is also going ahead with resources from a PDF block B in a project for the Andean zone. This includes the component of protected natural areas, scientific research, and the implementation of actions for the rationalization of uses toward more sustainable agricultural systems.

The Project will operate under the modality of "Regional Execution", which differs considerably in its approach and ambit from the action of varied national initiatives funded by the GEF, or other sources, thus constituting more of an integrating and catalyzing component of the initiatives underway. In fact, the relationship of this Project with national projects funded by the GEF was carefully considered by the countries when formulating its components.

This is the way in which the Project will co-ordinate with other projects already being executed and the PDF will allow an analysis of the options considered most appropriate for this purpose. The Total Project will place emphasis on specific actions in environments shared by two or more countries, a subject which no current project is dealing with. In addition, the approach of the Project is oriented toward joint and concerted action among the countries aimed at obtaining far greater benefits than could any country acting on its own. The Project includes integrating activities such as regional training and technical as well as co-operation exchanges among the countries of the region – a considerable gap in the projects currently underway.

Lastly, it should be mentioned that the Project will generate practical models for management and connectivity in transnational protected areas, replicable in other priority ecoregions in Latin America and the Caribbean, as well as in territories outside the region. In this regard, a close link will exist between the Project and the development of other complementary initiatives on the same subject. One such example is the proposal from the World Resources Institute and the IUCN put to the GEF on the theory and conceptualization of a global model for bioregional planning and corridors.

VII. Special features of the Project

The Project has several demonstrative and methodological elements, replicable with the adaptations that are pertinent in other situations with similar problems of the conservation of biodiversity and which constitute lessons for like initiatives in other regions of the world. This is particularly valid for the following elements:

- Coordinated management among the countries in existing border protected areas, including operational plans and actions for concerted management.
- The establishment of new protected areas which complement the existing ones, using modern criteria for bioregional planning and availing of shared information.
- Management of the zones of influence of the protected areas, including the participation of local communities and other interested and affected parties involved with the conservation units.
- The establishment of biological corridors, including mechanisms for the participation of local governments, various governmental and non-governmental organizations, and the private sector.
- Harmony and improved collaboration and joint work among the numerous protagonists involved in bioregional planning.
- Harmony on issues of common interest among the institutions that administer the protected areas of the region.

VIII. Budget for the PDF project by type of activity

Activities	Criteria	Budget (US$)
Project Administrator	US$ 4,000 per month for 12 months	48,000
Consultants on management of protected areas	US$ 2,500 per month for 10 months	25,000
Consultants on bioregional planning and rural development	US$ 2,500 per month for 8 months	20,000
Consultants on strategic planning and incremental costs	US$ 2,500 per month for 4 months	10,000
National studies on diagnostics, priority needs and detailed work plan and components of Total Project in each area of action of the Project	US$ 15,000 per country	120,000
2 Subregional Workshops on work plan in each area of action of the Project	US$ 15,000 for each one	30,000
Analysis of the protected areas selected for demonstrations as components of the Total Project	US$ 1,000 average per area	5,000
Workshops in the selected protected areas in order to define a work plan	US$ 12,000 per each one	60,000
Draft for the Project Proposal in standard format		5,000
Workshop for analysis of the Draft Project Proposal		20,000
Final Preparation of the Project Proposal		7,000
TOTAL		**350,000**

Chapter III - Annex I
Ecoregions included in the Regional Project([7])

Mountainous Andean Tropical and Subtropical Moist Forests

(49) Forests of the Venezuelan Andes (Venezuela, Colombia)

(46) Mountainous Forests of the East Mountain (Colombia, Venezuela)

(50) Moist Forests of Catacunbo (Venezuela, Colombia)

(44) Mountainous Forests of the Magdalena Valley

(47) Mountainous Forests of the Real Oriental Mountain Range (Ecuador, Colombia, Peru)

(51) Warm Valleys of (Peru)

(52) Warm Valleys of (Bolivia, Argentina)

(53) Warm Valley of the Andes (Argentina, Bolivia)

Sub-Antarctic Andean Forests

(87) Winter Rain Forests of Chile (Chile)

(88) Temperate forests of Valdivia (Chile, Argentina)

(89) Subpolar forests of Nothofagus (Chile, Argentina)

(7) Described in the study by Dinerstein,E., D.M. Olson, D.J. Graham, A.L. Webster, S.A. Primm, M.P. Bookbinder, and G. Ledec. 1995. *Una evaluación del estado de conservación de las eco-regiones terrestres de América Latina y el Caribe*. (An evaluation of the state of conservation of land eco-regions in Latin America and the Caribbean World Bank. Washington, D.C. (numbers in parentheses correspond to the code for the above-mentioned study).

Chapter III - Annex II
Statistical Charts of the responses to the survey

Chart 1. Need for action (in decreasing order) in regard to coverage and representativity, institutionality and management in the Andean protected areas([8])

Actions pertaining to coverage and representativity	Level of Implementation Average
Connectivity between protected areas (biological corridors)	2,0
Appropriate ecological representativity	1,9
Appropriate criteria for selecting new areas	1,7
Appropriate ecological coverage	1,7
Diversification of the management categories	1,7
Institutional Actions	
Work in coordination with neighboring countries	2,5
Coordination with private conservation initiatives	2,3
Coordination with local governments	2,3
Training of personnel	2,1
Coordination between state institutions	2,0
Work with indigenous communities	1,7
Coordination with non-governmental organizations	1,6
Management Actions	
Monitoring of management plans	2,7
Management programmes for buffer zones	2,7
Applicability of existing management plans	2,4
Land Sanitation	2,4
Appropriate level of information	2,0
Participatory processes in plans	2,0
Management plans in force	1,9
Definition of limits	1,6

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(8) Scale of 1 to 3, where 1 means **Good Implementation**; 2 **Fair Implementation** and 3 **Poor Implementation**

Charter 2. Need for action (in decreasing order) in order to mitigate threat to Andean protected areas([9])

Actions for mitigating threat	Level of Implementation Average
Prevention of pollution of currents and bodies of water	2,4
Regulation of agriculture and livestock in order to prevent soil erosion	2,4
Prevention of the loss of habitat due to extraction activities in peripheral communities	2,4
Prevention of the introduction of exotic species	2,3
Regulation of public services (hydroelectric stations, roads)	2,3
Regulation of oil exploitation	2,2
Prevention of forest fires	2,1
Regulation of pipelines, gas lines and power lines	2,0
Solution to conflicts regarding land tenure	2,0
Supervision of fishing, gaming or poaching of wild fauna	2,0
Regulation of public use	1,9
Regulation of mining	1,7
Regulation of the utilization of natural forests	1,7
Control of settlements	1,5

Chart 3. Level of importance (in decreasing order) of regional actions of bio-regional planning in protected border areas and biological corridors in the Andean environment([10])

Actions	Level of Importance Average
Generating mechanisms for social participation	1,0
Establishment and management of biological corridors in protected border areas	1,1
Criteria for creating agreements and alliances applicable to the buffer zones and biological corridors	1,1
Identification and development of innovative financing mechanisms	1,3
Development of environmental education and communication programs	1,3
Planning comprehensive management of the protected border areas	1,4
Creating common criteria for the institutional coordination of bioregional planning	1,4
Creating common criteria for establishing new public and private areas	1,7
Support for the development of infrastructure and equipment	1,9

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(9) Scale of 1 to 3, where 1 means **Good Implementation;** 2 **Fair Implementation** and 3 **Poor Implementation**
(10) Scale of 1 to 3, where 1 means Very Important Action; 2 Semi-important Action and 3 Not important Action.

Chart 4. Level of importance (in decreasing order) of regional actions relative to information and cooperation between the countries in terms of protected areas in the Andean environment[11]

Actions pertaining to information	Level of Importance Average
Creation of a regional information network	1,0
Development and application of follow-up mechanisms and database	1,3
Strengthening national actions	1,4
Actions pertaining to cooperation between countries	
Development of workshops and training courses	1,0
Development of technical meetings on priority topics of common interest (for example a joint action plan)	1,1
Implementation of technical exchange programmes	1,1
Identification of training needs and strategies	1,3
Preparation of teaching material and technical documents	1,4
Creation of an Andean Sub-network in the context of the Latin American Network of National Parks.	1,4
Portfolio of success stories in bio-regional planning	1,6
Development of a formal and informal training plan	1,7
Preparation and dissemination of technical educational material	1,9
Roster of specialists and institutions	1,9

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(11) Scale of 1 to 3, where 1 means Very Important Action; 2 Semi-important Action and 3 Not important Action.

Chapter III - Annex III
Statistics of Andean protected areas

1. Andean Protected Areas in Argentina

NAME	Local denomination	IUCN	Ecoregion	Surface area (ha)	International Category	Administrating body	Year of creation
ACONCAGUA	Provincial Park	II	Andean Highlands	70000		Provincial	1983
ALTO ANDINA DE LA CHINCHILLA	Provincial Reserve	VI	Andean Highlands	119730		Provincial	1992
BATEA MAHUIDA	Forest Reserve	VI	Patagonian Forests	1206		Provincial	1968
CAÑADA MOLINA	Natural Monument Provincial	III	Patagonian Forests	50		Provincial	1993
CERRO CURRUMAHUIDA	Forest Reserve	VI	Patagonian Forests	3250		Provincial	1982
CERRO PIRQUE	Parque Provincial	II	Patagonian Forests	770		Provincial	1993
COPAHUE – CAVIAHUE	Provincial Park	II	Patagonian Steppe	28300		Provincial	1962
CUARTEL LAGO EPUYÉN	Forest Reserve	VI	Patagonian Forests	20000		Provincial	1964
CHAÑY	Forest Reserve	VI	Andean Highlands	2039		Provincial	1986
DOMUYO	Provincial Reserve de Flora	VI	Andean Highlands	3620		Provincial	1989
DON CARMELO	Multiple Use Private Reserve	VI	Andean Highlands	35000		Mixed	1993
EL DESEMBOQUE	Provincial National Park	V	Patagonian Forests	0		Private	1990
EL PUELO	Forest Reserve	VI	Patagonian Forests	60		Scientific and Technical (Nat.)	1955
IRA HITI	Estancia Rincón	VI	Patagonian Forests	15000		Private	1992
ISLA DE LOS ESTADOS	Tourist Historical Ecological Provincial Reserve	VI	Patagonian Forests	52000		Provincial	1991
ISLA HUEMUL	Tourist Historical Ecological Municipal Reserve	V	Patagonian Forests	74		Municipal	1988
LA ESPERANZA	Private Wildlife Sanctuary	VI	Patagonian Forests	15036		Private	1991
LAGO BAGGILT	Natural Protected Area	VI	Patagonian Forests	1500		Provincial	1996
LAGO GUACHO	Forest Reserve	VI	Patagonian Forests	1000		Provincial	1986
LAGO PUELO	National Park and National Reserve	II	Patagonian Forests	23700		National Parks	1971
LAGUNA BLANCA R.	Natural Reserve Integral	VI	Plateau	770000	Biosphere Reserve	Provincial	1979
LAGUNA BRAVA	Vicuña Reserve and Protected Ecosystem	IV	Andean Highlands	405000		Provincial	1980
LAGUNA DE LOS POZUELOS M.N.	Natural Monument	III	Plateau	16000	Biosphere Reserve	National Parks	1979
LAGUNA DE LOS POZUELOS R.	Biosphere Reserve	VI	Plateau	364000	Biosphere Reserve	Mixed	1980

NAME	Local denomination	IUCN	Ecoregion	Surface area (ha)	International Category	Administrating body	Year of creation
LAGUNA DEL DIABLO	Reserva Recreativa Natural	VI	Patagonian Forests	3		Municipal	1991
LAGUNA DEL DIAMANTE	Natural Provincial Protected Area	II	Andean Highlands	28000		Provincial	1994
LAGUNA FANTASMA	Municipal Intangible Area	V	Patagonian Forests	1		Municipal	1994
LAGUNA GUATRACHE	Natural Reserve	VI	Andean Highlands	0		Provincial	1991
LAGUNA LOS JUNCOS	Wildlife Sanctuary	VI	Patagonian Forests	37		Private	1985
LAGUNAS DEL EPULAFQUEN	Provincial Reserve	VI	Patagonian Steppe	7450		Provincial	1973
LANIN	National Park and National Reserve	II	Patagonian Forests	379000		National Parks	1937
LE MARTIAL	Natural Protected Area	VI	Patagonian Forests	0		Provincial	1990
LOMA DEL MEDIO Y RIO AZUL	Forest Reserve	VI	Patagonian Forests	2435		Scientific and Technical (Nat.)	1948
LOS ALERCES	National Park and National Reserve	II	Patagonian Forests	263000		National Parks	1937
LOS ANDES	Provincial Fauna Reserve	VI	Plateau	1444000		Provincial	1980
LOS ARRAYANES	National Park	II	Patagonian Forests	1840		National Parks	1974
LOS GLACIARES	National and National Reserve	II	Patagonian Forests	717800	World Heritage Site	National Parks	1937
LOS MORRILLOS	Private Wildlife Sanctuary	I	Andean Highlands	23500		Private	1993
LOS REPOLLOS	Forest Reserve	VI	Patagonian Forests	100		Scientific and Technical (Nat.)	1941
LLAO LLAO	Municipal Park	II	Patagonian Forests	1226		Municipal	1989
NAHUEL HUAPI -1-	National Park and National Reserve	II	Patagonian Forests	490160		National Parks	1934
NAHUEL HUAPI -2-	National Park and National Reserve	II	Patagonian Forests	222000		National Parks	1934
NANT Y FALL(Arroyo Las Caídas)	Natural Tourism Reserve	VI	Patagonian Forests	50		Provincial	1995
OLAROZ-CAUCHARI	Fauna and Flora Reserve	VI	Andean Highlands	180000		Provincial	1981
PENINSULA DE MAGALLANES	Provincial Reserve	VI	Patagonian Forests	39800		Mixed	1993
PERITO MORENO	National Park and National Reserve	II	Patagonian Forests	115000		National Parks	1937
RIO AZUL - LAGO ESCONDIDO	Natural Protected Area	VI	Patagonian Forests	80000		Provincial	1994
RIO TURBIO	Provincial Park and Forest Reserve	II	Patagonian Forests	50000		Provincial	1994
SAN GUILLERMO	Biosphere Reserve	VI	Andean Highlands	811460	Biosphere Reserve	Provincial	1972
SAN GUILLERMO N.P.	National Park	II	Andean Highlands	170000	Biosphere Reserve	National Parks	1998
SAN LORENZO	Provincial Reserve	VI	Patagonian Forests	24000		Provincial	1993
TIERRA DEL FUEGO	National Park	II	Patagonian Forests	63000		National Parks	1960

NAME	Local denomination	IUCN	Ecoregion	Surface area (ha)	International Category	Administrating body	Year of creation
TREVELIN	Forest Reserve	VI	Patagonian Forests	3030		Scientific and Technical (Nat.)	1944
VALLE TIERRA MAYOR	Natural Reserve	V	Patagonian Forests	29500		Provincial	1994
VOLCAN TUPUNGATO	Provincial Park	II	Andean Highlands	110000		Provincial	1985
EL LEONCITO	Strict Natural Reserve	I	Andean Highlands	74000		National Parks	1994
Total Number	**56**		**Surface area**	**7.277.727**			

2. Andean Protected Areas in Bolivia

Management category	Name of the protected area	Surface (ha)	Year of creation	If it is a border area, indicate border area and country (ies)	Existence of current management plan (Yes/No)	Equivalent IUCN category
National Park and Natural Management Area	Madidi	1.895.750	1995	Peru – Bahuaja Sonene, Reserva Tambopata – Candamo	No	National Park and Biosphere Reserve
National Park	Carrasco	622.600	1991	-	No	National Park
Fauna Reserve	Ulla Ulla	240.000	1972	Peru	Yes	National Fauna Reserve
Fauna Reserve	Eduardo Avaroa	714.745	1973	Chile - Reserva los Flamencos Argentina –Biosphere Reserve Lagunas Pozuelos	Yes	National Fauna Reserve
National Park	Sajama	100.230	1939	Chile – Lauca National Park	No	National Park
National Park and Comprehensive Natural Management Area	Cotapata	58.620	1993	-	No	National Park and Biosphere Reserve
Biosphere Reserve and Indigenous Territory	Pilón Lajas	400.000	1992	-	Yes	Biosphere Reserve
Flora Reserve	Tariquía	246.870	1989	-	No	Flora Reserve
Biological Reserve	Cordillera de Sama	108.500	1991	-	No	Biological Reserve
National Park	Torotoro	14.447	1992	-	Yes	National Park
Natural Integrated Management Area	El Palmar	59.484	1997	-	No	National Park and Biosphere Reserve
National Park	Tunari	300.000	1962	-	No	National Park

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3. Andean Protected Areas in Colombia

Management category	Name of the protected area	Surface (ha)	Year of creation	If it is a border area, indicate border area and country (ies)	Existence of current management plan (Yes/No)	Equivalent IUCN category
National Park	Sierra Nevada de Santa Marta	383.000	1964	No	No	National Park
National Park	Catatumbo-Bari	158.125	1989	No	No	National Park
National Park	Cueva de los Guacharos	9.000	1960	No	No	National Park
National Park	Purace	83.000	1968	No	No	National Park
National Park	Munchique	44.000	1977	No	No	National Park
National Park	Nevado del Huila	158.000	1977	No	No	National Park
National Park	Picachos	439.000	1977	No	No	National Park
National Park	Farallones de Cali	150.000	1968	No	No	National Park
National Park	Las Hermosas	125.000	1977	No	No	National Park
National Park	Sumapaz	154.000	1977	No	No	National Park
National Park	Chingaza	53.385	1977	No	No	National Park
National Park	Los Nevados	58.300	1973	No	No	National Park
National Park	Pisba	45.000	1977	No	No	National Park
National Park	El Cocuy	306.000	1977	No	No	National Park
National Park	Tamá	51.900	1977	Yes with Táma NP (Venezuela)	No	National Park
National Park	Paramillo	400.000	1977	No	No	National Park
National Park	Orquídeas	32.000	1973	No	No	National Park
National Park	Tatama	51.900	1986	No	No	National Park
Fauna and flora Sanctuary	Isla de la Corota	8	1977	No	No	Natural Monument
Fauna and flora Sanctuary	Iguaque	6.750	1977	No	No	Natural Monument
Fauna and flora sanctuary	Guanenta-Alto Río Fonce	10.429	1993	No	No	Natural Monument
Fauna and flora sanctuary	Otún-Quimbaya	489	1996	No	No	Natural Monument
Fauna and flora sanctuary	Galeras	7.615	1985	No	No	Natural Monument
Single Natural Area	Los Estoraques	640	1988	No	No	Natural Monument

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4. Andean Protected Areas in Chile

Management category	Name of the protected area	Surface (ha)	Year of creation	If it is a border area, indicate border area and country (ies)	Existence of current management plan (Yes/No)	Equivalent IUCN category
National Parks	Lauca	137.883	1970	Sajama NP, Bolivia (*)	Yes	National Park
	Volcán Isluga	174.744	1967		Yes	
	Nevado de Tres Cruces	62.460	1994		Yes	
	Laguna Laja	11.889	1958		Yes	
	Tolhuaca	6.374	1935		No	
	Conguillío	60.832	1940		No	
	Huerquehue	12.500	1967		No	
	Villarrica	61.000	1940	Lanín NP,ARG.	No	
	Puyehue	106.875	1941	Nahuelhuapi NP, ARG.	Yes	
	Vicente P. Rosales	250.000	1926	Nahuelhuapi NP, ARG.	Yes	
	Alerce Andino	38.906	1983		Yes	
	Hornopirén	49.063	1988		Yes	
	Bernardo O'Higgins	3.524.648	1969	Los Glaciares NP, ARG	No	
	Laguna San Rafael	1.742.000	1959		No	
	Queulat	154.093	1983		Yes	
	Río Simpson	40.827	1967		Yes	
	Alberto de Agostini	1.460.000	1965	T. del Fuego NP, ARG. **(**)**	No	
	Torres del Paine	242.242	1959	Los Glaciares NP, ARG.	Yes	
	Cabo de Hornos	63.093	1945		No	
National Reserves	Las Vicuñas	209.131	1983		Yes	Protected Area with Managed Resources
	Los Flamencos	73.986	1990		Yes	
	Río Clarillo	10.185	1982		Yes	
	Río de los Cipreses	38.582	1985		Yes	
	Los Bellotos del Melado	417	1995		Yes	
	Ñuble	71.790	1978		Yes	
	Ralco	12.421	1972		Yes	
	Malalcahuello-Nalcas	31.205	1931		Yes	
	Malleco	17.371	1907		Yes	
	Alto Bio-Bio	30.040	1912		No	
	China Muerta	11.168	1968		No	
	Villarrica	53.755	1912		No	
	Lago Palena	41.380	1965		No	
	Llanquihue	33.906	1912		No	
	Mocho-choshuenco	7.536	1994		No	
	Cerro Castillo	139.552	1970		No	
	Coyhaique	2.150	1948		Yes	
	Lago Carlota	18.060	1965		No	
	Lago Las Torres	16.516	1965		No	
	Laguna Parrillar	18.814	1977		Yes	
	Lago Rosselot	12.732	1968		No	

Management category	Name of the protected area	Surface (ha)	Year of creation	If it is a border area, indicate border area and country (ies)	Existence of current management plan (Yes/No)	Equivalent IUCN category
	Alacalufes	2.313.875	1969		No	
	Katalalixar	674.500	1983		No	
	Lago Jeinimeni	38.700	1967		No	
Natural Monuments	Salar de Surire	11.298	1983		No	Natural Monument
	El Morado	3.000	1974		Yes	

(*) 40 km from Lauca National Park

(**) 50 km fromAlberto de Agostini National Park

5. Andean Protected Areas in Ecuador

Management category	Name of the protected area	Surface (ha)	Year of creation	If it is a border area, indicate border area and country (ies)	Existence of current management plan (Yes/No)
National Parks	Cajas	28.808	1997	No	No - 1993
	Cotopaxi	33.393	1975	No	Yes - 1996
	Llanganates	219.707	1996	No	Yes - 1998
	Podocarpus	146.280	1982	No	Yes - 1997
	Sangay	517.765	1975	No	Yes - 1998
	Sumaco	205.249	1994	No	Yes - 1995
Ecological Reserve	Antisana	120.000	1993	No	No (in progress)
	El Angel	15.715	1992	No	Yes - 1994
	Cayambe – Coca	403.103	1970	No	Yes - 1998
	Cotacachi – Cayapas	204.420	1968	No	No - 1983
	Los Llinizas	149.900	1996	No	No
Geobotanical Reserve	Pululahua	3.383	1966	No	No - 1990
Fauna Reserve	Chimborazo	58.560	1987	No	No - 1992
Wildlife Sanctuary	Pasochoa	500	1996	No	No - 1990
National Recreation Area	El Boliche	400	1979	No	No - 1995

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6. Andean Protected Areas in Peru

Management Category and name of area	Surface Area (ha)	Minimum Altitude (m)	Maximum Altitude (m)	Range	IUCN Category
Protected Forest					
Pagaibamba	2.078	2.450	3.400	1.010	I
Pui-Pui	60.000	2.000	3.700	1.700	I
Hunting Grounds					
Sunchubamba	50.735	900	4.100	3.200	IV
National Park					
Huascarán	340.000	2.500	6.768	4.268	II
Manú *	78.173	365	4.000	3.635	II
Río Abiseo *	18.392	320	4.200	3.880	II
National Reserve					
Calipuy	64.000	800	3.600	2.800	IV
Junín	53.000	4.080	4.125	45	IV
Pampa galeras	6.500	3.800	4.200	400	IV
Salinas y Aguada Blanca	366.936	3.400	6.057	1.657	IV
Titicaca	36.180	3.830	4.220	390	IV
Historical Sanctuary					
Chacamarca	2500	4.000	4.400	400	II
Machu Picchu *	9.256	1.800	6.270	4.470	II
Pampas de Ayacucho	300	3.250	3.800	550	II
National Sanctuary					
Ampay	3.636	2.500	5.652	3.152	III
Calipuy	4.500	3.600	4.100	500	III
Huallay	6.815	4.078	4.593	515	III
Reserve Area					
Apurimac	235.400	0	2.300	2.300	III

(*) Only the surface area in the Andean environment is considered

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7. Andean Protected Areas Protegidas in Venezuela

Management Category and name of area	Surface Area (ha)	Minimum Altitude (m)	Maximum Altitude (m)	Range	IUCN Category
National Park					
1. Chorro del Indio	10.800	800	2.600	1.800	II
2. Dinira	42.000	1.400	3.500	2.100	II
3. El Avila	85.192	120	2.765	3.174	II
4. El Guácharo	62.700	900	2.430	1.880	II
5. El Tamá	139.000	320	3.500	3.180	II
6. Guaramacal	21.400	1.500	3.100	1.600	II
7. Perijá	295.280	200	3.500	3.300	II
8. Páramos del Batallón y La Negra	95.200	1.200	3.900	2.700	II
9. Sierra Nevada	276.500	300	5.007	4.707	II
10. Sierra de la Culata	200.400	800	4.700	3.900	II
11. Yacambú	14.580	1.400	2.160	760	II
12. Yurubí	23.670	500	2.770	1.870	II
13. Terepaima	18.650	300	1.675	1.375	II
Tapo Caparo	270.000	400	2.800	2.400	II

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Chapter III – Annex IV
Some national institutions involved with Andean Protected Areas

1. Bolivia

PROTECTED AREA	NON-GOVERNMENTAL ORGANISATION	ACTIVITY
Madidi National Park and Comprehensive Natural Management Area	CI. VSF CARE	Ecology and Ecotourism Projects and Loans Food and Health
Carrasco National Park	CIPCA FEPADE CASDEC CIDRE CEDEAGRO DESEC	Agricultural Social Assistance Agricultural Social Assistance Agricultural Social Assistance Agricultural Social Assistance Agricultural Social Assistance Agricultural Social Assistance
Eduardo Avaroa National Fauna Reserve	PROQUIPO SARTAWI ASCA	Camelidae Assistance Programmes Camelidae Association
Sajama National Park	AIGACAA	Camelidae
"Ulla Ulla" Bisosphere Reserve – National Fauna Reserve	CECI ALPACA CECI BOLIVIA ISQANI CETHA AYNIKUSUM HOSANA IGLESIA LUTERANA MAN AIGACAA COPROCA	Peasant Development Sustainable Development Camelidae Training Health – Environment Camelidae Improvement Agricultural and Livestock Production Livestock and Financing Marketing Camelidae
Tariquía National Flora and Fauna Reserve	PROMETA	Ecology
Torotoro National Park	ACT	Toro Toro Conservation Association

2. COLOMBIA

Instituto de Investigaciones Alexander Von Humboldt – Cristian Samper – Director General, Calle 37 # 8 – 40, teléfonos: 3383900 extensión 388/390, Telefax: 2889564,
Apartado portal 8693 Santafé de Bogotá, Colombia. www.humboldt.org.co

3. CHILE

REGION	INSTITUTION	ADDRESS	TELEPHONE
I	Universidad de Tarapacá	General Velásquez 1775, Arica	(58) 222600
	Corporación Norte Grande	Borgoño 135, Arica	
	Sernanorte	Borgoño 135, Arica	
X	Universidad Austral	Independencia 641, Valdivia	(63)221302
XI	Raleigh	El Verdín, Casilla 130, Coyhaique	(67)235882
XII	Instituto de La Patagonia	Casilla 113-D, Punta Arenas	(61)207000
IX	CONADI	Montt 794, Piso 3º, Temuco	(45)235071
R.M.	CODEFF	Av. Francisco Bilbao 691, Santiago	251.0287

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Chapter IV
PDF A: Project Proposal for preparing the PDF B

Part I: ELEGIBILITY

1. Name of the Project:	Conservation of Biodiversity in the Gran Chaco Americano
2. Implementing Agency GEF:	UNDP
3. Countries where the Project is being implemented:	Argentina, Bolivia and Paraguay
4. Eligibility of the countries:	Ratification of the Convention on Biodiversity Notification of participation in the restructured GEF
5. Focal Area of the GEF (and relevant issues):	Biodiversity
6. Operational Program/Short Term Measure:	Forestry Ecosystems Arid and Semi-arid areas

7. How the Project Relates to National Priorities, Action Plans and Programmes:

In Argentina the Project is part of the priorities listed in the National Strategy on Biodiversity, created in 1998, and of the National Strategy of Protected Areas, created in 1999. Both strategies consider the three regions of the Gran Chaco (Moist Chaco, Sierra Chaco or mountainous savahannas of Cordoba, and arid and semi-arid Chaco) as national, regional and global priorities. In a complementary manner, in Argentina a GEF project on the Conservation of Biodiversity in Protected Areas is underway, by means of which five national parks are being created and implemented in priority ecoregions. One of them is represented by El Chaco, in the Copo National Park, to be created in the future, as the Maximum Regional Priority in the field of conservation of ecoregions in Argentina, and due to its global importance. In the same Copo sector, there are plans for an important network of biological corridors for all the land in the North East, on the international border with Paraguay.

In Bolivia, the Project is also in response to the guidelines of the National Strategy on Biodiversity. Due to its vulnerability, the Gran Chaco Americano is considered a very high priority for the systems of the protected areas of Bolivia, and the national action plans and national programmes underscore the need for bioregional planning in that ecoregion, including the creation of new areas, the establishment and management of biological corridors and their international interconnections, as well as training. In this context, the Macroregional Plan for Economic and Social Development of the Chaco was created, which has the following main objectives, complementary to the bioregional planning of the proposed Project:

- Identify the regional potential for the rational utilization of its resources.

- Define policies and projects conducive to consolidating a process of sustainable development, in the national and international context.
- Orient medium and short-term investment in a selective, comprehensive, concurrent and joint fashion.
- Enable the articulation and complementarity of the plans, programmes and projects of the three departments involved in the region.
- Promote financing for the projects having inter-departmental impact.

In Paraguay, the National Constitution of 1967 establishes the mandate regarding the rational use of the natural environment and the conservation policies focus on the establishment of a biogeographically representative system of protected areas. From this perspective, in 1992, in collaboration with the FAO, the government identified the main conservation priorities and their needs for policies, making it possible to create a Master Plan for the System of Protected Areas. In 1995, the country published its National Strategy for the Protection of Natural Resources, in an effort to integrate the objectives of environmental management in intersectorial policies, strategies and activities. In this context, environmental conservation of the Chaco has received high priority, which is expressed in plans to establish a Biosphere Reserve, including core areas (Daniel Cáceres, Guarani-Timane, Defensores del Chaco, Teniente Enciso, y Río Negro National Parks; Chovoreca Natural Monument); buffer zones, biological corridors and sustainable use of resources in the context of bioregional planning. This interest has also been expressed in the Paraguayan Initiative for the Protection of Wildlife Areas, in the GEF assessment stage, oriented toward promoting conservation actions in four regions of protected areas. This initiative focuses on establishing six main products in the four regions of protected areas:

- Implementation of a system of participatory planning.
- Strengthening implementation in protected areas.
- Developing training.
- Incentives for the sustainable use of resources.
- Environmental education in communities.
- Management of critical habitats and biological corridors in the buffer zones.

Two of the regions selected in this initiative are the Gran Chaco of Paraguay (Marsh/Chaco and Savannah Chaco, which are a valuable complement to this Project.

8. Status of the Letter of Endorsement of the GEF Operational Focal Point:

Submitted: Acknowledged: Endorsed:

(in progress) (in progress) (in progress)

9. Reasoning and Objectives of Total Project:

The Gran Chaco Americano is a biogeographical region that has been described and classified as unique due to the singular way its ecosystems operate, and to the existence of unique natural phenomena for this type of savannah and forest environments. Also noteworthy is the broad expanse of 1,010,000 square kilometers in Argentina, Bolivia and Paraguay, and a relatively small portion of Brazil. This broad expanse presents a high potential for little known genetic resources, which nevertheless already provide a series of goods and services to the local communities and general population that inhabits the Chaco.

However, many of the goods and services that they can provide are at present not taken advantage of due to the unsustainable management of resources, framed by a subsistence economy. The lack of awareness concerning genetic resources is an important factor, but productive practices and emerging social relations are determinants in the critical situation the region is undergoing.

Ecological awareness is relatively recent in the Chaco, and there are still numerous questions concerning this particular environment, especially as concerns the reaction of the ecosystems to anthropic historical stimuli and important natural processes, such as forest fires and deep flooding. These stimuli and processes, permanent over time, have caused dramatic changes in the organization of biophysical components; the present slow process toward new adjustments and balance are still not clearly focused. Despite the relative amount of information concerning the Gran Chaco, the basis for territorial ordinance is gradually being set down, aimed toward the sustainable use of biological diversity, avoiding irreversible negative processes caused by unplanned human intervention.

A distinctive feature of the Chaco is the brusque change from a dry phase to a moist one, which heavily conditions productive activities, the lifestyle of the inhabitants and the adaptive strategies of fauna and flora. Moreover, these brusque natural processes appear to be surprisingly devoid of medium indicators, with catastrophic pluvial and fluvial behavior, seriously affecting the balance of any type of productive activity. Flooding and drought are accompanied by numerous natural and provoked fires, hurricanes and other unique phenomena, such as plagues of enormous magnitude, the cross-flow of rivers from one basin to another, and the slow recovery –or irreversibility– caused by such alterations.

The Chaco displays contrasting situations as concerns the present status of its biological diversity and the potential for sustainable use. The processes to intensify the use of natural resources prevail, flowing from the surrounding urban nuclei. Counterpoint to population expansion are the consequences of historic over-exploitation of the natural resources of the Chaco. The potential for intensifying the utilization of resources still available for use brings with it the risk of causing irreversible destructive processes, if one considers that the recovery of ecosystems can only be attained over long periods of time. In this context, the spatial planning of the ecosystem, from the preservation of representative and single source samples through the sustainable use of productive natural resources, takes on added importance and is considered the only viable option to improve the quality of life of the populations, especially those in rural communities, and conserve a critical ecosystem of global value.

In light of this critical situation and the needs of the Chaco, the countries embracing this environment are developing important initiatives to strengthen their systems for wild protected areas, considered to be one of the most effective methods of *in situ* conservation of biological diversity. Argentina, Bolivia and Paraguay are developing national projects geared to improving the management of these protected areas and increasing ecological coverage, with various sources of financing; the GEF (Global Environment Facility) is playing a very important role in this.

There are still important voids to be covered at present, and we particularly underscore the lack of joint actions among the countries to meet common objectives. The fundamental premise on which this Project Proposal is based is that concerted action among the countries comprising the shared Chaco ecoregion will produce much greater effect and impact than the sum of the individual initiatives of these countries. Without a doubt the importance of the three countries working with agreed methodological criteria, focusing actions on concerted goals, using information equal in quality and quantity,

sharing successes and failures, complementing the actions of others, and training in matters of common agreement is classified as a priority. It is important to underscore that the three countries are members of Mercosur, and the Project constitutes an important opportunity to jointly consolidate the chapter on environmental policies of Mercosur, currently underway.

In the past, very little emphasis has been placed on concerted initiatives in the Chaco shared environment, classified as a crucial ecosystem due to varied threats, and because it contains particularly valuable biological diversity that transcends the borders of one single country. The need for joint and coordinated work among the countries takes on greater relevance yet in light of the present upsurge in the concept of "bioregions"**(12)**, advancing on the path toward the management of larger areas that encompass an entire setting of scenery, with the purpose in mind of satisfying both the priorities of conservation and sustainable use and rural development.

The concept of bioregional planning **(13)** reconciles human needs and the conservation of biological diversity, in which the protected areas become a part of the natural and semi-natural environment. A bioregion will contain several categories of protected areas, including strict protection, local, regional or national parks, areas for controlled extraction and those permanently wooded for the production of timber wood; all of the preceding are crucial elements. It has been foreseen that this concept will contribute increasingly to fulfil the objectives of conservation and development within a widely participative process, given that as a principle it involves central and local government bodies, civil society, affected and interested non-government organizations, and local communities.

There is a need to systematize the isolated experiences of bioregional planning, begin to implement concerted and specific actions for the conservation of the environments of the Gran Chaco –a priority, due to their fragility and high value– and develop actions for training and an exchange of experiences that might benefit all the countries that make up this critical environment.

The design of a Project that addresses the needs described and utilizes existing mechanisms of horizontal cooperation, based on incremental costs, has long been a top priority for the countries of the Gran Chaco region.

The project answers to the commitments taken on by the Gran Chaco countries (Argentina, Bolivia and Paraguay) by subscribing to and subsequently ratifying the Convention on Biological Diversity. In a more specific manner, the Chapter on the Environment of Mercosur declared the Gran Chaco to be a priority for the conservation of biodiversity and sustainable development. It is expected that the Total Project will provide models for comprehensive management and connectivity between protected areas in the critical environment of the Gran Chaco for the conservation of its biological diversity, and that these models will be replicated in other environments of the Region and beyond.

This Project is the result of the will and prolonged management of the Gran Chaco countries, and of all the Member States of the Latin American Network of Technical Cooperation in National Parks, other Protected Areas and Wild Fauna and Flora, under the FAO-RLC International Technical Secretariat. The project is amply backed by all

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(12) "Bioregions" is understood as the set of land and water ecosystems defined by climate, vegetation, soil, scenery, culture and history.

(13) "Regional planning" is understood as the programming of actions within a bioregion, aimed at establishing a work strategy in which the ecological, social and economic factors will be balanced, in order to reach the target of the conservation of biological diversity and sustainability for the community.

institutions that manage the national systems of protected areas and the institutions responsible for the conservation of biological diversity of the countries. The management process resulted in the adoption of the support decision for the Project at the XI Meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean, in Lima, Peru, 1998. (Decision No. 2).

General Objective of the Total Project

The general objective of the Total Project is to contribute to sustainable global development through strengthening the role of protected wild areas and biological corridors, among others, as strategic spaces for the conservation and sustainable use of biological diversity, and the generation of environmental goods and services in the Gran Chaco Americano. Through a highly participative process in this specific geographic region of action, the Total Project will strengthen the conservation of biodiversity through the establishment of new protected spaces, improved management of existing ones, and the biological connectivity of areas protected under the criteria of bioregional planning. The Project will also improve institutional capacity for coordinated work in policy design, and the development of mechanisms for technical cooperation and training.

10. General Results Expected from the Total Project:

The Gran Chaco Americano region in the countries of Argentina, Bolivia and Paraguay will have available and will implement a bioregional planning strategy, complementary to national strategies on biodiversity, for harmonious linkage of the national systems for protected areas for those shared priority ecoregions. The strategy to be implemented will include the creation of new protected areas, the redefinition of existing ones, when necessary, and will especially emphasize the connectivity of these initiatives in the form of biological corridors, with the active participation of the private sector, non-government organizations, the central government and local governments to ensure viability and future financing.

A series of management actions in priority areas will have been implemented and will be monitored in the Gran Chaco Americano countries of Argentina, Bolivia and Paraguay. These implemented management actions will focalize on protected border areas and their zones of influence, either existing ones or those established as a result of the activities of the Project. Actions for management within the protected areas themselves will have been developed under a planning system coordinated among the countries for their border areas, and biological corridors will have been established to favor the connectivity of the areas, which will be under appropriate management and monitoring. These demonstrations will have been duly planned and agreed on by the countries, and incorporated into the regional development process with the participation, in each of the countries, of the private sector, non-government organizations, local governments, community organizations and others, having established many types of alliances to render viable the implementation of bioregional plans. These demonstrations will have been broadly disseminated in the countries of the Region so they might function as models for other shared priority ecoregions in Latin America.

Information and follow-up mechanisms will be operating in the Gran Chaco Americano countries of Argentina, Bolivia and Paraguay. These mechanisms will use the information nodes that already exist in the countries, strengthened by the Project, constituting and implementing a network of information for the Chaco environment which will facilitate providing adequate follow-up over time to the actions assumed by the Project.

The Gran Chaco Americano countries of Argentina, Bolivia and Paraguay will have improved their institutional capacities through the application of appropriate coordination mechanisms that will enhance the continuity of the actions implemented by the Project. These mechanisms will enable maintenance over time of the coordinated work processes in matters of bioregional planning among the countries of the Gran Chaco, including the management of protected border areas and biological corridors, and the exchange of experiences, both positive and negative, among institutions and specialists concerning the management and administration of the territories involved, and the maintenance of a roster of specialists and of technical and education materials. These horizontal mechanisms for coordination will have made possible national and regional training actions, thus improving institutional capacities, with the active participation of the private sector, non-government organizations, central government and local governments, as well as community organizations, all with an important multiplier effect.

11. General Activities Planned to Achieve the Results of the Total Project:

To summarize, the Total Project for the Gran Chaco Americano will:

a) Formulate and implement a bioregional planning strategy, complementary to national biodiversity strategies, to harmoniously link the national systems of protected areas of the countries insofar as concerns the shared priority ecoregion of the Gran Chaco Americano. This set of activities shall include:

- An analysis of the situation of the Gran Chaco Americano, with general information on the status of biodiversity, the characterization of its use, the description of existing protected areas, the degree of representativity and coverage of the same, and its insertion in the development process.
- The identification and management of needed and feasible spaces to be protected through the implementation of actions that are aimed at the establishment and management of new protected areas -or the redefinition of existing ones when necessary- and the establishment and management of biological corridors to connect the protected spaces, incorporating into the process the private sector, non-government organizations and local governments in order to ensure connectivity, representativity, coverage and viability of protected areas of the Gran Chaco.
- The implementation of social agreements and necessary institutional agreements that tend to guarantee over time the sustainable use of biodiversity, the stability of recovery of the scenery in the processes of socio-economic development , in addition to the stable connectivity and linkage of protected areas based on territorial zoning and the establishment of biological corridors that are viable in the long term.
- The design of innovative financing mechanisms for the future to ensure the permanence of the bioregional planning processes that involve protected areas and biological corridors, with the participation of the private sector, universities, non-government organizations and local governments.

b) Implement management actions for those protected border areas and their zones of influence that have been identified as having the greatest priority and the highest multiplier effect for the Gran Chaco, and begin a process of permanent monitoring of these. This set of activities includes:

- A plan of action and its implementation for the management and coordinated planning of selected border areas and their zones of influence, including biological corridors.
- The development of infrastructure and equipment for selected protected border areas and their zones of influence, including biological corridors, according to management plans.
- Encourage the integration of demonstration areas into the processes of regional development, with the participation of the private sector, non-government organizations and local governments, and establish new types of alliances in order to render bioregional planning more feasible and enable the generation of a permanent process.
- The design and execution of environmental education and communication, community inclusion and interpretation of nature.
- The generation, development and implementation of mechanisms for social participation in the conservation and sustainable use of the biodiversity of the Gran Chaco.

c) Develop and implement information and follow-up mechanisms to generate, concentrate and share information on the Gran Chaco, that will be ongoing and used as a basis for decision-making and adoption of common strategies, both present and future. This set of activities includes:

- The identification and strengthening of existing nodes of information on the Gran Chaco, developing the capabilities of national counterpart agencies, and providing the necessary material for permanent access to these nodes, under the context of a regional information network for that ecoregion.
- Drafting agreements and enforcing the follow-up mechanisms that permit the evaluation of actions assumed and the expansion of the ecoregional database for the Gran Chaco, through the incorporation of all the information produced throughout the implementation of the Project. Among other things, this information will contain: basic and thematic cartography, coverage and representativity of protected areas, current and potential land use, forms of utilization of natural resources, socio-economic information on the populations, traditional uses of biodiversity, projects and experiences in the management of natural resources, enforcement of biosafety standards, and management of superimposed protected areas developed in the region, among others.

d) Build institutional capacity and coordination among the different players at local and national levels among the Gran Chaco countries of Argentina, Bolivia and Paraguay, which demands innovative procedures of analysis and planning methodology. This set of activities includes:

- Strengthen existing mechanisms in the region, with special emphasis on the procedures and means already achieved but the Latin American Network for technical Cooperation on National Parks, other Protected Areas and Wild Fauna and Flora, especially through the following elements:

    1. A roster of experts, either national or international institutions or individuals related to the Gran Chaco ecosystem.
    2. A short and medium term program for technical exchange among the countries of the Gran Chaco.

3. A portfolio for best practices for the conservation and sustainable use of natural resources, in protected areas, buffer zones and other corridors in the Gran Chaco.
4. A set of technical, educational and dissemination materials.

At present, the management and administration of the protected areas of the Gran Chaco are immersed in diverse situations, which is true of all Latin America in general; these require technical and legal operations, and instruments to function and possibly even generate value added for the set of countries involved. The exchange of experiences –both positive and negative– could potentialize the management procedures for protected areas for the situation of the Gran Chaco Americano.

- Support the programming and execution of national and international training initiatives, as well as the design of new formal and informal educational strategies that will strengthen the institution and society as well, banking on their key strengths. Training will address the officials of the management services for protected areas in the Gran Chaco, and the communities directly involved in this ecoregion. This includes the following actions:

1. Identifying the training needs for human resources directly involved in the Project.
2. Design a training plan for the Gran Chaco region, and do so in a fully participative manner.
3. Develop Workshops, Courses and audiovisual or printed Materials for the Plan.
4. Design and implement evaluation and follow-up mechanisms for the activities carried out by the Plan.

In general terms, the activities to be carried out under the Project for the Gran Chaco Americano region will be designed according to concertation processes between the central government and local governments, farming and indigenous communities, associations and civil society as a whole. The Project will promote the value and importance of the use of environmental goods and services that support the protected areas and their zones of influence on society, and do so through the concerted actions of the diverse players involved.

The activities focused on directing policies and complementing bioregional plans in the Gran Chaco region will be developed under the principle of promoting the linkage to protected areas and the good use of natural resources, as an integrating element for the multiple conservation efforts carried out. The Project premise is that concerted action among the countries comprising the shared priority ecoregion of Gran Chaco will have a much greater effect than the sum of the individual initiatives of the countries involved, both present ones and future ones. Varied management actions will be scheduled to evaluate and produce samples for demonstration concerning the social and economic benefits for the Gran Chaco protected areas and their zones of influence. Actions of technical cooperation and institutional coordination among the countries will be carried out to disseminate practices designed to improve the management of protected areas and the linkage of these to the environment. Technical cooperation will be centered on themes such as improvement of marketing processes, marketing of non-traditional forest products; training, as an indispensable element for building institutions and raising the professional standards of the management of protected areas; the implementation and operation of a regional information network that will allow for the obtention, management and access to information on biological diversity;

and the dissemination of these demonstrations developed by the Project, of great importance for regional experience.

12. Relevant players involved in the Project:

Administration of National Parks of Argentinean National Services for Protected Areas of Bolivia (SERNAP)Administration Board for National Parks and Wild life of Paraguay. central and local government bodies, civil society, non-government organizations, academic institutions, the private sector and local communities. Regional Office of FAO for Latin America and the Caribbean Latin American Network for Technical Cooperation in National Parks and Other Protected Areas and Wild Flora and Fauna.

One of the Project's central elements will be its co-ordination with other initiatives that arise at the regional Gran Chaco level, and are considered complementary to the Project. Such is the case of the Subregional Program for Sustainable Development of the Gran Chaco, that brings together the authorities of the three governments, with the support of the UNDP, UNOS (Office to Combat Desertification and Drought), and the GEF, and the eventual collaboration of GTZ (German Technical Cooperation). The Project will also maintain close linkage and develop joint work with a recent joint initiative of the IUCN (The World Conservation Union) and the TNC (The Nature Conservancy), which is directly related to the project and focalizes on compliance of the following objectives:

- Delving into the environmental problems of the Chaco.
- Promoting a dialogue and exchange of experiences among the different players to design environmental policies and strategies.
- Design a strategic plan to contribute to solving the environmental problems of the Chaco and prepare projects that will assist in making the plan operational.
- Design concerted, specific policies for the conservation of hydric resources.

Part II – Information of the activities of SFP (PDF) Block A

13. Activities to be financed by the PDF block A:

PDF block A resources are being requested to design a PDF block B proposal following the previously described guidelines. PDF A will schedule the following activities:

a) Compile and analyze information on the Gran Chaco Americano as concerns specific threats to its biological diversity, policies, institutions and present conservation methods for this critical environment, including a detailed analysis of the projects currently being implemented or recently concluded and the articulation of these to the Project proposal. In-depth analysis will be pertinent to the implementation of PDF block B.

b) Identify, describe and analyze specific areas of action for the Total Project, in keeping with the priorities assigned by the countries of the Gran Chaco and analyzing the particular needs of bioregional planning and of the institutions involved, interested or affected.

c) Based on the above, prepare a draft discussion document as a preliminary PDF block B proposal that includes thematic cartography of the established protected areas, proposals for new areas and plans for connectivity through biological corridors.

d) Hold an International Workshop with the participation of the national institutions of the three countries (Argentina, Bolivia and Paraguay) in charge of defending the national systems of protected areas in order to analyze and enrich the preliminary PDF block B proposal. At this meeting representatives of the Administration of National Parks of Argentina, and National Services for Protected Areas of Bolivia (SERNAP), and the Administration Board for National Parks and Wildlife of Paraguay will participate, in addition to representatives of international bodies linked to the topic.

e) On the basis of the results of the International Workshop, prepare a final PDF block B proposal, following the GEF model. Said proposal should: a) clearly describe the principal threats that affect the biodiversity of the Gran Chaco Americano; b) carry out a preliminary analysis of the baseline to determine until what point the plans and programs for national development in the Chaco support the conservation of biodiversity; c) identify the existing voids in the baseline and corresponding necessary actions to effectively mitigate the threats and ensure the efficient conservation of the Chaco biodiversity; d) carry out a preliminary analysis on whether the actions are incremental in nature and consequently eligible for GEF financing (meaning activities or measures that are not justifiable on the mere basis of domestic benefits and are probably closer to generating global benefits than regional or local). Greater intensification of analysis of this aspect is a matter pertinent to the PDF block B implementation, where the necessary resources will be considered; e) describe the objectives and activities of the Total Project, specifically those activities proposed in the PDF block B, expected results and products, the budget requested of the GEF and external contributions.

14. Expected results and conclusion dates:

The PDF block A will produce the following results:

a) The identification and analysis of specific threats to the biological diversity of the Gran Chaco and the causes that originate these threats.

b) An analysis of policies, institutions and current methods of preservation for this critical environment, including a detailed analysis of projects currently underway or recently concluded, and their articulation to the Project proposal.

c) A description and analysis of the objectives and activities of the Total Project, specifically those activities proposed in the PDF block B, their expected results and products, the budget requested of the GEF, and external contributions.

d) The identification, description and analysis of specific areas of action for the Total Project, in keeping with the priorities assigned by the Gran Chaco countries, taking into account the particular needs of bioregional planning.

e) The identification of and participation plan for involved, interested or affected institutions.

f) A PDF block B proposal in the respective format.

The PDF block A will be completed in a period of five months.

15. Other possible contributions (donors and amounts):

The technical personnel of the FAO will participate in the execution of PDF A to assist in the design of the proposal, as a contribution to the Organization. This FAO contribution in kind for the execution of the PDF is valued at US$ 7,000.

During the execution of the PDF the participation and financial contribution of other international bodies will be encouraged.

The countries will also contribute significantly to financing the Project, allocating financial resources from other external as well as internal sources. As national counterparts, the countries will also endow the Project with technical and institutional capabilities for the adequate development of planned activities. The contribution in kind of the countries for the execution of PDF A is valued at US$ 12,000, and will be incremented significantly in other stages of the Project.

16. Total budget and information on how these costs are to be met (including the PDF A resources):

Activities	Contribution GEF (US$)	Countries (US$ in kind)	FAO (US$ in kind)	TOTAL (US$)
Analyze the information on the Gran Chaco Americano (threats to its biological diversity, causes for it, policies, institutions, projects)	3.500	3.000	1.000	7.500
Identify, describe and analyze specific areas of action in the Total Project	3.500	3.000	1.500	8.000
Prepare a draft document for PDF block B discussion	3.500			3.500
Hold an International Workshop with the national institutions of the three countries (Argentina, Bolivia and Paraguay)	10.000	6.000	3.000	19.000
Prepare a final proposal for PDF block B	4.500		1.500	6.000
Sub-total	25.000	12.000	7.000	44.000
Grand Total				44.000

Part III. Information about applicant institution

17. Name:

Argentina: Administration of National Parks of Argentina

Bolivia: National Service for Protected Areas (SERNAP) of Bolivia

Paraguay: Board of Administration for National Parks and Wildlife of Paraguay

18. Date created, number of professionals and authority:

Argentina: Institution created in 1934; at present employs 824 full-time individuals, of which 80 are technicians and 256 are professional park rangers; the institutions is headed by a Board, and has a President, Vice-President, and four representatives from the State Ministry of Natural Resources and Sustainable Development, the Ministry of Tourism, and the ministers of Defense and the Interior, respectively.

Bolivia: The National Service for Protected Areas (SERNAP) was created through Supreme Decree Number 25158, dated September 4, 1998. The Service was created through reconversion of the Unit for Protected Areas of the general Administration for Biodiversity, dependent on the Vice-minister of the Environment, Natural Resources and Forestry Development of the Ministry of Sustainable Development and Planning.

Paraguay: The Board of Administration for National Parks and Wildlife of Paraguay was established in 1987 through Decree 19.165. This Board is under the Subsecretariat of Natural Resources and the Environment of the Ministry of Agriculture and Livestock.

19. Mandate/terms of reference:

Argentina: The institution is autonomous and its mandate is to manage and administer the national parks of the country. The current federal system is comprised of 32 national parks and other categories managed, covering a total surface of 3,2 million hectares.

Bolivia: The National Service for Protected Areas (SERNAP) of Bolivia is a de-concentrated operational structure under the Ministry of Sustainable Development and Planning. It has its own structure and competence within the national sphere, and its mission is to co-ordinate the operations of the National System of Protected Areas, ensuring the comprehensive management of protected areas of national concern, with the purpose of conserving biological diversity in its area of competence.

Paraguay: The Board of Administration for National Parks and Wildlife of Paraguay is sub-divided into Departments in order to manage the system of protected areas and conserve biological diversity: administration and development of protected areas, wildlife, environmental education, Data Center for Conservation and biological inventories.

20. Sources of income:

Argentina: Federal operational budget which in 1998 and 1999 reached US$ 28,800,000.

Bolivia: The National Service for Protected Areas (SERNAP) has diverse sources of financing, among which stand out: trust funds, special funds, internal resources, IDB resources, USAID, CARE, Endangered Parks, GTZ and others. This has enabled the projection of financing programs in protected areas for the 1999-2003 period.

Paraguay: The Board of Administration for National Parks and Wildlife of Paraguay has state funding and various activities that provide external financing.

21. Activities/recent programs, especially those relevant to the GEF:

Argentina: GEF Project, underway, on Conservation of Biodiversity in Protected Areas.

Bolivia: GEF II Project, with a total programmed budget of US$ 15,000,000; the objective is to attain the sustainability of the National System of Protected Areas of Bolivia. It comprises the following three components:

- Develop a medium and long term vision for the National System of Protected Areas through the generation of planning instruments and proposals to optimize the Service.
- Achieve the sustainability of the National System of Protected Areas through implementing administration, coordination and participation mechanisms.
- Consolidate the National Service of Protected Areas through prioritizing operations.
- Establish a Program for Monitoring and Managerial Evaluation and Biodiversity in the National System of Protected Areas.

The results expected from the Project are as follows:

- Have a Master Plan for the National System of Protected Areas.
- Have a Strategic Plan for Administrative Development and Financing.
- Have a Planning System for the Service.

- Have proposals for reclassification, re-delimitation, and reducing negative effects.
- Have proposals for ecological corridors.
- Generate the coordination of the management of the Service with other bodies.
- Have mechanisms for administration of the Trust Fund Account for the National System of Protected Areas.
- Have a strategy for promoting the National System of Protected Areas.
- Have mechanisms for participation in the management of protected areas.
- Have mechanisms and instruments to generate benefits.
- Harmonize currents standards.
- Generate the theory framework to prioritize and operate protected areas.
- Have a management system for the National Service of Protected Areas.
- Have a system for monitoring and evaluation of protected areas.

Paraguay: Project submitted to the GEF on the Paraguayan Initiative for the Protection of Wild Areas.

Part IV. Information to be completed by the implementing agency

22. Project identification number:

23. Contact person at the implementing agency.

24. Project link to implementing agency programs.

25. Implementation agreement.

Chapter V
Mesoamerican Biologic Corridor

I. Project Context

The Mesoamerican region is comprised of the seven Central America countries - Belize, Costa Rica, El Salvador, Guatemala, Honduras. Nicaragua, and Panama - and the five southernmost states of Mexico (Campeche, Chiapas, Quintana Roo, Tabasco and Yucatan). lt. constitutes a land area of approximately 768,990 km2 - corresponding to 0.51 % of global emerged lands - and contains around 8% of the planet's biodiversity.

The diversity and high level of plant and animal endemism in this region is illustrated by the following examples: Panama contains more avian species (929) than Canada and the United States combined; Belize, with a surface area of only 22,965 km2, contains more than 150 species of mammals 540 species of birds and 151 species of amphibians and reptiles; Costa Rica - smaller than Denmark - is comprised of 55 distinct biotic units, containing more than 365,000 species of arthropods; Nicaragua has more than 800 species of orchids divided into 150 genera, identified principally in the highland areas of the north- central part of the country; and in Guatemala, up to 70% of the vascular flora of the high mountains has been found to he endemic. As a whole, Central America has approximately the same number of vascular plant species as the United States or Peru (20,000-25,000), despite being 15 - 4 times smaller respectively. According to A *Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean***(14)***,* of the 33 Ecoregions found in Mesoamerica, the conservation status of 11 is rated as critical with an equal number rated as endangered.

There are three *principle proximate causes* of biodiversity loss 'in Mesoamerica: a) direct habitat conversion (400,000 ha/yr.) to agriculture, ranching, infrastructure and urban development (including tourism); b) progressive ecosystem degradation from over-exploitation of biotic and other resources (timber extraction, hunting, fishing, egg-gathering, ornamental plant gathering, etc.); and c) increasing fragmentation of natural habitats.

Intermediate causes of biodiversity loss are due to a number of factors including land ownership patterns and low agricultural productivity on small-holdings, generalized lack of information and knowledge regarding biodiversity at the regional level, insufficient education and public awareness regarding the importance and value of biodiversity to economic development and the causes of biodiversity loss, limited access to financial resources by conservation groups, relevant public sector institutions, and small-holders, deficient legislation and policies for conservation and sustainable use of natural resources, lack of proper incentive mechanisms for large-scale commercial enterprises (e.g., banana and pineapple plantations, citrus orchards or cattle ranches) to safeguard biodiversity; and lack of institutional capacity for planning, monitoring or managing programs for conservation and sustainable use of biodiversity and other natural resources.

(**14**) 'Dinerstein E., D. M. 01son, D.J. Graham, A.L. Webster, S.A. Primm M. P. Bwkbinder and G. Ledec. The International Bank for Reconstruction and Development/ The World Bank.

Ultimate causes for the accelerated loss of biodiversity in Mesoamerica lie in the high proportion of the region's population residing in rural areas, often in conditions of poverty or extreme poverty ; the high rate of population growth (total population estimated to double by 2030); and the slow pace of economic development. In the absence of sustained economic growth, rural poverty can be expected to continue to exert strong pressures on biological resources with further expansion of the agricultural frontier and unsustainable extractive pressures on weakly staffed protected areas, and increased fragmentation of remaining natural habitat.

Over the years each country in Mesoamerica has individually responded to both economic development priorities and the loss species and habitat through the formulation of policies and programmes and the creation of specific institutional structures to plan, manage, and monitor land use. These institutions are, at the Ministerial level, MARENA in Nicaragua, MINAE in Costa Rica, MINREC in Belize, SEMA in El Salvador, and SEMARNAP in Mexico. In the remainder of the countries specific institutes or commissions for this purpose include INRENARE in Panama, CONAMA in Guatemala, and CODEHFOR in Honduras (see Annex I for brief description).

To counter the loss of biologically diverse habitat, the governments of Mesoamerica have, over the past thirty years, declared 461 protected areas (in Central America, these have been recently organized into the Central American System of Protected Areas – SICAP). This trend has resulted in 31% of the territory of Belize receiving some kind of protection, followed by Guatemala with 27%, Costa Rica and Panama, 24%, and Honduras, Nicaragua, Mexico and El Salvador, with approximately 2% each: region-wide, this corresponds to a total land area of over 18 million hectares. Nevertheless, at least 270 of these areas are considered too small to be able to realistically fulfill their purpose in terms of long-term biodiversity protection unless functionally linked to other protected areas. Half of all protected areas are not staffed, only 12% have management plans, most are poorly demarcated and barely 40 host any kind of research program. Only a few select areas enjoy the appropriate institutional and legal frameworks to further the conservation of biodiversity and long-term sustainable generation of goods and services necessary for the region's development.

Many individual protected areas, as well as specific national systems of protected areas have received or are now currently receiving funding to address the problems highlighted above; this includes funding for activities in buffer zones to mitigate human pressures on the habitat and species of core protected areas. Nevertheless, funding falls short of overall biodiversity conservation needs across the region; neither SICAP nor the Mesoamerican portion of the Mexican system of protected areas include representative areas from all important ecoregions or habitats under threat; funding is unevenly distributed across the region and within protected area systems; duplication of efforts often occurs with more than one donor agency or institution providing similar inputs to a single project area; experience gained from project design and implementation in one project is often not readily available to other projects under similar conditions; inter-sectorial collaboration may be weak or non-existent causing conflicting mandates and programmes working ant cross-purposes; high-quality information produced as part of diagnostic exercises, scientific research and other activities is often unavailable to planners and managers; and the awareness of all strata of the region's societies regarding the value of biodiversity to economic development and human well-being is slight.

At the same time, there is growing recognition that a regional protected areas system even when fully staffed and financed - will be insufficient, in and of itself, to conserve the biodiversity of Mesoamerica. Expected demographic and socio-economic trends

over the coming decades will result in increasing pressures on remaining natural habitats, protected areas and their resources. For biodiversity to be effectively protected over the long-term, it must occur a region-wide matrix of protected areas and areas of sustainable resource use managed for the region's economic development; the cardinal guiding principle of this strategy must be one of avoiding fragmentation of wildlands and the consequent isolation of protected areas as vulnerable "islands" of high biodiversity surrounded by modified landscapes.

Over the past decade, the countries of the region have increasingly worked together to build consensus around common environmental goals. In December 1989, the Presidents of the Central American nation signed the Central American Environmental Protection Agreement and established the ***Central American Commission on Environment and Development (CCAD)***, in which Mexico participates as an observer. Among CCAD's main achievements to date are the elaboration and subsequent ratification of Regional Conventions (Biodiversity, Climate Change, Forests, Toxic Wastes, etc.) and the preparation of a Central American Environmental Agenda which constituted the basis for a joint regional position at the Rio Earth Summit of 1992. It is also responsible for ensuring that environmental issues are addressed at the highest political level in the region the biannual Presidential Summits. Moreover, CCAD actively mobilizes and channels a significant stream of resources for environmental and resource-related projects and programs to the region (see Annex II).

In June 1992, as part of the broader regional integration process dealing with environmental and natural resource policies, the Presidents of the Central American countries signed the *Central American Convention for the Conservation of Biodiversity and Protection of Priority Protected Areas*. As part of this Convention, the Central American Council on Protected Areas (CCAP) was created and charged with coordinating regional efforts for the development of the aforementioned Central American System of Protected Areas (SICAP) under the supervision of the CCAD.

In October of 1994, the governments of Central America formed the ***Alliance for Sustainable Development*** (ALIDES) to coordinate short, medium- and long-term actions aimed at modifying conventional development approaches in order to ensure environmental, economic, social and cultural sustainability. As part of ALIDES, the region's governments are directed "to protect and conserve biodiversity of all species of plants, animals, other organisms, of genetic populations within each species and the variety of ecosystems". As such, ALIDES specifically advocates the creation of a regional "***biological corridor*** to strengthen the respective national systems of protected areas."

Given increasing pressures in rural areas (expansion of the agricultural frontier; large-scale agro-industrial investment), biodiversity will be most effectively protected through a multisectorial strategy aimed at integrating biodiversity conservation with economic development within a regional land-use planning framework. This framework will be designed around the criteria and requirements for biodiversity conservation and rural economic development with the aim of crating, over time, a regional network of protected areas and their buffer zones, linked through biological corridors. This network when taken as a whole, will constitute a regional biological corridor extending from southern Mexico to eastern Panama.

The Mesoamerican Biological Corridor (MBC) thus constitutes a central development concept for the sub-region, integrating conservation and sustainable use of biodiversity within the framework of sustainable economic development. The agreement to establish the MBC was formally approved in February 1997 by the Ministries responsible for natural resources and environmental affairs in Central America and

officially endorsed by the Presidents of the region in their XIX Summit Meeting of July 1997.

II. Project rationale and objectives

The principle objective of this project is the establishment of a Programme for the Consolidation of the Mesoamerican Biological Corridor System. Construction of the MBC is expected to be a long-term, multi-dimensional process. This project will, over eight years, build, integrate and initiate implementation of the basic components of the Programme, as detailed below, by providing the technical assistance that will allow the governments and societies of Mesoamerican countries to jointly establish the MBC as a system integrating conservation and sustainable uses of biodiversity within the framework of economic development priorities over the medium to long term.

In the past and currently, a large number of national initiatives and a lesser number of regional ones, have or are supporting the general goals of the MBC (e.g., Paseo Pantera, PROARCA, GTZ, Dutch and GEF-financed national initiatives). However, none explicitly addresses the long-term establishment of the Corridor as a regional system integrating conservation and development. With development and conservation initiatives expected to continue in the future, unless a regional programmatic effort is made to guide and manage the process of establishing the MBC system, the potential global impact of these individual projects will not be fully realized.

GEF programming in Mesoamerica has already begun to reflect this regional approach as a result of inter-agency consultations during preparation of this regional proposals, as well as corresponding national and regional initiatives. National projects approved by the GEF in Panama, Nicaragua, Honduras and Guatemala focus on conservation of biodiversity in geographic areas consistent with Corridor priorities and have adopted the objectives of the MBC as their overall project goals at the national and local levels.

Equally, the GEF-financed Global Environment Account of the Central American Fund for Environment and Development (FOCADES) will incorporate strategic objectives and project selection criteria from MBC system as a basis for awarding grants in the biodiversity thematic area. The GEF Small Grants Programme – active in Belize, Guatemala and Costa Rica – will finance local, small-scale initiatives, which are responsive to local priorities and contribute to the overall objectives of the Corridor.

The development of National Biodiversity Strategies and Action Plans – currently underway in all countries of the region – will assist in the definition of priorities for the Programme and the manner in which these may be addressed most effectively on a regional scale. In addition, existing National Biodiversity Committees – entrusted with implementation of CBD Enabling Activities – will coordinate with Programme implementation at the nation levels.

At the end of the eight-year life of this project, the Programme will consist of:

1. A representative, Regional Operations Coordinating unit capable of coordinating, planning, monitoring, evaluating, and mobilizing resources for, the long-term construction and maintenance of the Corridor.
2. A Strategic Action Plan for the long-term consolidation of the Corridor at both national and regional levels. Over the course of the project, three Strategic Action Plans will be produced (years one, three and six) reflecting priority activities required for the effective establishment and operation of the Programme. Consequently, these Strategic action Plans will reflect an interactive and sequential process of "adaptive management" involving regional stakeholders.

3. Appropriately harmonized national and regional policy frameworks to support consolidation of the MBC system.
4. An information and monitoring system to ensure ongoing, systematic generation and access to relevant information regarding the status of the MBC, its biodiversity, the economic development of this human communities, bilateral and multilateral support to conservation and development projects in the MBC, legal and policy analyses and reforms, as well as capacity building programmes and initiatives.
5. A capacity building sub-programme to strengthen the region's principal stakeholder groups and the existing cadre of planning, management and operational personnel in the different productive and conservation sectors and to catalyze the incorporation of biodiversity and MBC themes into formal and non-formal educational programmes at both national and regional levels.
6. An awareness raising and outreach sub-programme aimed at increasing the knowledge of the region's societies and governments regarding the value of biodiversity to the region's sustainable development.
7. Concrete mechanisms for the participation of stakeholder groups in national and regional planning, management and monitoring of MBC development and sustainability.
8. A series of key regional products derived from the priorities identified in the Strategic Action Plans aimed at jump-starting MBC consolidations efforts and activities at a programmatic level, at gaining knowledge and experience of key problems and potential solutions of regional significance to the MBC, and at maintaining and broadening political and popular support for the MBC: these would include a region-wide Ecosystem Restoration Strategy, recovery of indigenous knowledge of biodiversity and its uses, regional analysis of international trade in biodiversity resources, regional analysis of tourism and positive and negative effects on biodiversity, etc.

III. Description of project components

1. Programme Coordination and Strategic Planning

(GEF: US$3.0 million; co-financing USUS2.5 million)

Consolidation of a fully functional MBC is along term process which will require a technical Regional Operations Coordinating Unit representative of the principal stakeholders on which the success and sustainability of this initiative will depend. As such, the coordinating group will respond to the SICA Environment Secretariat (presently, CCAD) and liaise directly with National MBC Commissions comprised of representatives of the principal stakeholder groups, including the national directors of ongoing GEF and other related projects.

The regional Coordinating Unit's principal responsibilities will be coordination, planning, management, monitoring and resource mobilization for the effective fulfillment of the Programme's principal components as described in detail below. For this purpose, the regional coordinating group will be directly responsible for the formulation of periodic Strategic Action Plans (3-4 years) which will define the priority activities in each of the Programmes's components – required to achieve the short and medium term goals leading to the overall long-term consolidation of the MBC. The Strategic Action Plans, while continuing to embody the Programme´s components, will be adapted to reflect

progress made in MBC consolidation and changing circumstances al local, national, regional and global levels.

Under this component, the project will establish the Coordinating Unit based on a consensus-based process, provide its members with analytical and conceptual training regarding the scope and objectives of the MBC, build their capacities to effectively fulfill their planning, managerial, coordinating, and monitoring responsibilities, and establish the group's basic operational infrastructure.

Principal outputs under Component A will include:

1. A fully functional, representative Coordinating Unit responding to the Environment Secretariat of SICA, and liaising directly with National MBC Commissions.
2. Induction workshops for the members of the Coordinating Unit.
3. Workshops to build planning, managerial, coordinating, monitoring and resource mobilization capacities.
4. A high –level Technical Advisory team to assist the Coordinating Unit in the execution of its functions, comprised of high level technical experts in institutions.
5. Steering Committee composed of CCAD, regional stakeholder groups, NGOs, Technical Advisory Team, UNDP and the Project Director.
6. Three Strategic Action Plans – the first by end of year one (start-up plan), the second by end of year three, and the third by end of year six.

2. Resources Mobilization for MBC Consolidation

(GEF US$1.0 million; co-financing USUS1.3 million)

The capacity to mobilize and orient financial and technical resources towards agreed strategic priorities from a regional perspective is key to the full consolidation of the MBC. This will require training of the Coordinating Unit and the Environment secretariat – as the institution entrusted with the highest regional responsibility over the MBC – in the identification of financing gaps (demand) and potential funding sources (supply), including the provision of training and technical assistance to potential projects proponents in proposals development and presentation to funding sources. As such, the establishment and maintenance of a data base on relevant cooperation projects, initiatives, and donors of financial and technical resources will be required.

In parallel, this component will also include technical assistance and training to policy and decision makers regarding the identification, development and application of economic instruments (e.g., taxes, users fees, preferential credits) to generate resources and/or promote alternatives to current production practices consistent with the goals of the MBC, as well as financial mechanisms to ensure channeling of resources to support conservation and sustainable uses of biodiversity.

Principal outputs under Component B will include:

1. Training materials, and materials for dissemination to regional stakeholders groups and National MBC Commissions regarding development of proposals.
2. Roster of locally available experts in project design and formulation.

3. Training programme for the regional Coordinating Unit, National Commissions and Environment Secretariat in regard to resource mobilization strategies, project selection criteria, proposal development and presentation.
4. Resource mobilization plan for long-term programme support.
5. Data base cooperation projects and other initiatives in the MBC, including national and international funding resources. to be included in the MBC information system described in the following section.
6. Portfolio of potential economic instruments and financial mechanisms.
7. Multisectorial dialogues regarding role of economic instruments for resource generation and modification of production practices.
8. Regional seminars on economic instruments with policy and decision makers, including representatives of the Environment and Economic Secretariat of SICA, the Central American Parliament (Parlacen), and appropriate national ministries.

3. Information and Monitoring

(GEF US$3.0 million; co-financing US$1.3 million)

The MBC information system – CORRE-NET – will be designed specifically for the Mesoamerican Biological Corridor to allow efficient access to the large amount of existing data and information about the MBC, its biodiversity, conservation and development programs, and technologies, institutions and organizations involved. Information available will include maps, satellite images, ethno-botanical information, biodiversity inventories, ecoregion and vegetation classification materials. As well, it will provide examples of best practices and lessons learned regarding conservation and sustainable use of biodiversity (e.g., participatory or co-management schemes, agroforestry systems) mainly in the Corridor areas, but not restricted to them. Examples will be included reflecting both positive and negative experiences, in order to extract the corresponding lessons. In addition, it is envisaged that CORRE-NET will contain an educational "tool box" for use by different users in activities related to the Corridor: fire control, how interpretive trails are made, establishment of agroforestry systems, sustainable forestry methods, co-management of protected areas, etc.

The majority of this information will not reside in the system itself, but rather will be accessible through electronic links to institutions and organizations which have relevant information and maintain electronic databases and websites. Information will be accessible to a wide range of users including government officials, civil society organizations, academic institutions, community groups and institutions, private enterprise, communications media, donors and other development and conservation actors. The formats in which the information will arrive at the final users will depend on access to equipment and on their capacities (Internet, paper, CD-ROM, diskettes, audio/video, etc.).

Key regional stakeholders groups will be assisted in establishing connectivity, developing their own websites, where appropriate, and building the capacities of constituents to generate and access CORRE-NET information and other information sources such as the clearing house mechanisms of the CBD Secretariat and the World Conservation Monitoring Center.

A the same time, MBC Quarterly Reports will be produced to enhance the quality of participation of the wide variety of stakeholders in the MBC consolidation process. This Report will consist of information regarding the benefits and progress of the MBC at

local, national and regional levels, barriers to its successful consolidation with identification of means to their removal, lessons learned and best practices from projects both within the region and elsewhere, and other issues. While the content of the Report will remain the same, its presentation, including translation, will reflect the different stakeholders groups being targeted (Government, NGOs, sectorial representatives, communities and other stakeholder groups) and their capacities to access information.

Monitoring of the development of the MBC will constitute a key activity of the regional coordinating group which will enable it to effectively manage the Programme and the fulfillment of the corresponding Action Plans. Information generated by monitoring activities will be stored on CORRE-NET, by making appropriate use of Geographic Information Systems (GIS), and other relevant data bases. For standardized in-situ monitoring at local and national levels, decentralized monitoring methodologies will be designed based on extensive stakeholders participation.

Principal outputs under Component C will include:

Information

1. Design, installation and maintenance of the MBC Information system (CORRE-NET accessible through electronic networks (Internet). Among other activities, this would imply the development of databases (and meta-databases) and an MBC Web site.
2. Identification, organization and public dissemination of information related to the MBC.
3. Identification of examples of programmes and projects focusing on the consolidation of protected areas and the sustainable management of natural resources and systematization of experiences.
4. Development of an educational "tool box" for different users, in practical activities related to the Corridor: fire control, how interpretive trails are made, integration of biodiversity elements into agricultural systems, etc.
5. Training on the use of CORRE-NET.
6. Promotion of connectivity of key regional groups and stakeholders.

Monitoring

7. Development of standardized criteria and indicators to quantify trends and status of protected areas and the state of biodiversity in general in the MBC.
8. Use of technologically advanced and economically appropriate tools, such as satellite imaging and GIS databases to collect and analyze monitoring information.
9. Connection to relevant databases to exchange updated data.
10. Development of decentralized monitoring mechanisms to involve local populations in participatory monitoring of the areas they know and live in.
11. Measurement of the progress in the (physical) building process of the MBC: detection of changes in land use within MBC protected areas. Collection of data on the status of buffer zones and individual corridors within the MBC.
12. Special monitoring of critical ecoregions/habitats.

4. Capacity Building and Intraregional Exchanges

(GEF US$2.4 million; co-financing US$1.6 million)

Successful consolidation of the MBC will depend on the ability of its stakeholders to effectively adopt, replicate and sustain policies and practices consistent with conservation and sustainable use principles and the region's decentralization and devolution policies. As such, under this component the project will develop a capacity building sub-programme aimed at the principal regional stakeholder groups such as the Central American Federation of Municipalities (FEMICA), Indigenous Council of Central America (CICA), Association of Central American Peasant Organizations for Cooperation and Development (ASOCODE), Committee of Mesoamerican Members of IUCN (COMIUCN), Federation of Private Sector Entities of Central America and Panama (FEDEPRICAP), the Central American Councils on Forests and Protected Areas (CCAB and CCAP), etc. Priority will be given to groups with broad coverage, representation, credibility and the willingness to train their constituents.

The capacity building sub-programme will identify best practices in agroforestry systems and alternative production practices for buffer zones and biological corridors (including eco-labelling), sustainable uses of species and ecosystems, co-management of protected areas, participatory analytical and decision making processes, conflict resolution, marketing of non-development, and other topics to be determined on the basis of demand and consistency with the Strategic Action Plans. Rather than targeting stakeholders directly at the local level, this sub-programme will complement existing national initiatives by adopting a training-of-trainers strategy aimed at building the capacities of the regional stakeholder groups who will be responsible for the training of their constituents.

In parallel, the sub-programme will organize a series of intraregional exchanges among stakeholder groups with the aim of sharing their experiences regarding methods, practices, and technologies related to conservation and sustainable uses of biodiversity in the context of the Strategic Action Plan. For example, farmers familiar with a specific agroforestry system used in biological corridors in one area of the MBC will host farmers from another area to exchange views regarding issues related to productivity, marketing, labor requirements, etc. Another example might be that technical staff from a relevant institution in one area of the MBC would meet community stakeholders in another to exchange views regarding co-management of local protected areas.

The capacity building sub-programme will also target the formal educational sector with the aim of incorporating biodiversity and sustainable use issues into existing curricula at different levels.

Principal outputs under Component D will include:

Training of Trainers:

1. Short to medium term strategy and plan for training of trainers.
2. Portfolio of best practices in methods, practices, and technologies in conservation and sustainable use of biodiversity and alternative production for buffer zones and biological corridors, and development of educational materials for use in training of trainers sessions.
3. Roster of regionally available experts in the areas mentioned above to train the trainers.

Intraregional Exchanges

4. Short to medium term strategy and plan for intra-regional exchanges.
5. Series of intra-regional exchanges.

Formal Educational Sector

6. Workshops to define most effective way to incorporate MBC educational material and modules into formal educational curricula.
7. Educational materials.
8. Modules or courses for incorporation into school curricula.

5. Participation, Awareness Raising, and Outreach

(GEF US$2.2 million; co-financing US$1.4 million)

The successful consolidation and long-term sustainability of the MBC will depend on popular support for its objectives at regional, national and local levels. in the context of profound rural poverty and pressing national needs for economic development, it is imperative that the MBC initiative be seen as a regional effort to achieve a biodiversity-friendly landscape where conservation and economic development are integrated rather than an initiative to just preserve biodiversity in protected areas. Under this component, the project will a) establish or strengthen mechanisms for stakeholder participation at the national and regional levels in the programme aimed at raising the awareness of the general public and the principal stakeholder groups regarding the scope, objectives and potential benefits of the MBC to sustainable development.

Principal outputs under Component E will include:

1. Multi-stakeholder National MBC Commissions, incorporating or building on existing multisectorial structures, to provide country-specific priorities guidance and contextual information to the regional coordinating group. Periodic (biannual) meetings of each Commission's representatives will take place at the regional level.
2. Workshops at the national level to build the analytical, conceptual, planning, monitoring, awareness raising and outreach capacities of the National Commissions.
3. A Mesoamerican Biodiversity Forum consisting of a series of events aimed at assembling stakeholder groups to explore issues, debate perspectives, and build consensus views leading to proposals and recommendations for action by the ***Programme***. Electronic fora on CORRE-NET regarding the status and activities of the MBC, mediated by an NGO from the region.
4. Multi-stakeholder thematic working groups at the regional level for the analysis of key issues relevant to the overall consolidation of the MBC, e.g., trade in non-timber forest products, ecotourism development. Information generated will be used as input to policy dialogue, awareness raising and outreach campaigns, capacity building initiatives.
5. Outreach and awareness raising strategy for the different sectors and stakeholder groups over the short, medium and long term.
6. Workshops for the mass media to inform of the scope, objectives and potential benefits of the MBC to sustainable development.

7. Preliminary series of mass media products regarding the MBC for transmission in the region and adapted to specific audiences.

6. Policy Harmonization

(GEF US$1.5 million; co-financing US$0.6 million)

Consolidation of MBC will inevitably require harmonization of sectorial policies and incentive/regulatory frameworks. Since sectorial policy directly affects productivity and economic development no single country should feel at a disadvantage from reforming policy aimed at achieving global benefits. Consequently, the emphasis placed on policy harmonization is warranted not only from an ecosystem management perspective but also from a socio-economic and political standpoint. Activities under this component will feed the ongoing, established regional policy formulation and integration process by identifying the key issues and sectorial activities affecting biodiversity conservation and sustainable use, as well as providing viable recommendations for policy reforms and adoptions by SICA.

Principal outputs under Component F will include:

1. Analyses and reports on key issues, identified by National Commissions through the Coordinating Unit and Environment Secretariat, affecting conservation and sustainable use of biodiversity common to MBC countries, as well as recommendations to address them.
2. Reviews of existing resource-related legislation, commissioned by the regional coordinating group with recommendations for sectorial policy reforms.
3. Proposals for standardized incentive/regulatory frameworks.
4. Proposals for economic instruments.
5. Proposals for mechanisms for conflict resolution.
6. Workshops for analysis of reviews and recommendations with the National Committees and the relevant SICA Secretariats.
7. High-level policy review workshops regarding policy development and reform.

IV. Rationale for GEF financing (US$)

This project is within the scope of the Forests Operational Programme of the GEF. It is also within the priorities set by the CBD under Article 8, and particularly under Annex 1. The project uses the incremental costs approach to obtain added global biodiversity benefits to those of existing and planned national efforts in the region. Maximum protection of the unique biodiversity of Mesoamerica requires national efforts, such as the ones currently being made with GEF and other financing and those planned, but also regional efforts to ensure that geographical continuity effects are also obtained: *a continuous conservation system extending throughout the region has greater conservation power than the sum of isolated local or national efforts.* Countries are aware of this important biodiversity management principle, but cannot find such a regional endeavor out of their own limited resources. Therefore, to maximize the biodiversity benefits of such a large conservation initiative in Mesoamerica, the support of GEF is needed.

V. Sustentability and participation

The preparation of this project involved a large number and variety of meetings, workshops and consultations at regional, national and local levels in which a large number of governmental, non-governmental, academic, and community leaders and stakeholders participated. These encounters occurred over a period of approximately four months with the participation of over 400 individuals. National consultations were held in Guatemala, Belize, Honduras and Panama, while two regional consultations took place in Guatemala. A detailed map was produced as part of this process; delineating the different areas of the MBC and classifying them in terms of potential contribution to its consolidation, with objectives ranging from protection to multiple use (see Annex III). it represents the integration of 8 national maps created by regional specialists.

During these meetings, participants assessed the institutional weakness of the agencies and institutions charged with administration of protected areas and natural resources, determined financial needs and requirements, identified stakeholder groups interested in co-management of protected areas and buffer zones, identified the negative impacts resulting from specific adjustment policies on the administrative efficiency of institutions responsible for natural resources planning and management, identified a wide variety of urgent actions at local, national and regional levels to establish or strengthen protected areas and to mitigate human impact on biodiversity through sustainable uses, and identified further opportunities for participation of stakeholders in the development of the Mesoamerican Biological Corridor.

Stakeholder participation in the *Programme for the Consolidation of the Mesoamerican Biological Corridor System* will be systematically promoted and structured through the establishment of representative National MBC Commissions a representative Regional MBC Commission and the formation and operationalization of multistakeholder thematic commissions to analyze key issues relevant to the successful consolidation of the MBC system and provide recommendations to address them.

Stakeholder participation in the *Programme for the Consolidation of the Mesoamerican Biological Corridor System* will be systematically promoted through the activities of the *Programme's* awareness, outreach and participation sub-programme. At the same time, their participation will be enhanced by strengthening their analytical, conceptual, planning, proposal development and monitoring skills through the *Programme's* capacity building sub-programme. The Mesoamerican Biodiversity Forum and electronic fora on CORRE-NET (mediated by a regional NGO) will provide widely accessible public venues for continuous discussion of the scope, objectives and activities of the Programme and the MBC System. At the same time, regional stakeholder groups will be assisted in establishing or enhancing internet connectivity and in improving their access to, and generation of information for CORRE-NET.

Sustainability of the *Programme* overall is significantly bolstered with the foregoing emphasis on stakeholder participation, the development of planning, management, monitoring and resource mobilization capacities of the Regional Operations Coordinating Unit, CCAD (Environment Secretariat), and the National MBC Commissions, and by the recent Ministerial and Presidential Resolutions calling for the establishment of the *Programme.* Financial sustainability of the *Programme* itself will be actively sought through proposals to SICA for the development of appropriate economic instruments and financial mechanisms (e.g., scaled fees for environmental services). Programme sustainability will be enhanced through the assistance of a high-level Technical Advisory Team, comprised of national, regional and international technical experts and institutions.

VI. Lessons learned and technical review

This project has benefited from a long gestation and the conceptual and technical input of a wide variety of individuals representing governmental institutions and regional intergovernmental bodies, national and international NGOs, regional stakeholder groups, academia, and multilateral and bilateral cooperation agencies. This proposal has evolved from originally attempting to resolve the immediate local needs of a limited number of specific protected areas within the MBC to one of establishing the institutional and programmatic framework required for long term advocacy and action. This strategic approach resulted from discussions, analysis and consultations which recognized a) that successful completion of a functional MBC system will be a long-term effort (minimum 30 years). b) that no single project could successfully finance all the disparate activities required to establish the MBC across the entire region over the short-term. c) that planned, ongoing and future national initiatives are better placed to address local and national conservation needs within a regional framework, but that the sum of national initiatives is insufficient to achieve the global benefits of a regional approach. and d) that there are significant economies of scale and other benefits to be obtained from a strategic, regional approach given language commonality (with the exception of Belize) and the existing regional integration process and structures (SICA-CCAD).

Comments by the STAP Roster Expert (see Annex VI) have been incorporated into this final version of the Project brief. These include incorporation of a pro-active outreach strategy to complement the information, awareness raising and participation sub-programmes. the establishment of a regional biodiversity forum as a complement to the project's proposed participation mechanisms. and systematic reporting on MBC status and progress (MBC Quarterly Reports). The demonstration of biodiversity friendly land/aquatic use practices is addressed as part of the identification of best practices under the *Capacity Building and Intra Regional Exchange* and will be further detailed in the final Project Document.

VII. Project financing budget

The following matrix shows the project components and their costs split by GEF and non GEF contributions.

Programme Groups	Governmental in kind	Co-financing	GEF US$ Financing
A. Coordination and Planning	300	2,700	2,200
B. Resource Mobilization	700	1,500	1,300
C. Information and Monitoring	950	1,800	2,500
D. Capacity Building/Intra-regional exchanges	850	1,200	1,900
E. Participation and Awareness Raising	500	800	1,200
F. Policy Harmonization	700	600	1,500
TOTAL	4,000	8,600	10,600

VIII. Incremental costs

The standard incremental costs analysis is shown in Annex VII

IX. Issues and risks

This will be an innovative and complex project, involving eight countries. The success of the project will depend on many factors, the majority of which can be addressed through the adequate formulation and management of the Programme. Those outside the project´s control are outlined in the Project Planning Matrix (see Annex VIII) and discussed below. Project design has been done in such a way that the risks associated with project components are of insufficiently high probability and damage potential to warrant aborting the MBC Programme initiative. It is, however, critical to monitor and assess their potential influence and impacts during the course of implementation, as part of the project´s overall monitoring strategy (see below).

Among the foremost assumptions for project success is continued government support, at both national and regional levels, for the development of the MBC system. Presently, the establishment of the MBC constitutes a formal regional priority, which to become an institutional and programmatic reality will require policy and decision making at the national and local levels which faithfully reflecting MBC objectives. The programme has been designed to foment and sustain government and stakeholders support to the MBC by demonstrating the economic benefits of this strategic approach in terms of more sustainable production of ecosystems goods and services, the attraction of both internal and external financial support to conservation an development initiatives in the MBC through a coordinated approach, and the development of economic instruments aimed at generating resources to offset the costs of ecosystems protection and to ensure equitable distribution of the benefits associated with biodiversity conservation.

As such, a threat to the consolidation of the MBC would be a public perception that the Corridor is only about conservation of protected areas. It will be fundamentally important, for the sustainability of the initiative, to make the public (particularly in corridor areas)n aware that the MBC system aims at striking a balance between protecting and using biological resources sustainably for economic development. Governments, media and peasant and indigenous associations will al need to play a disseminating role regarding the advantages of an operational Corridor system. In addition, there is a need for the National Corridor Commissions to be perceived as representative, transparent, credible and neutral (i.e., not dominated by any one sector).

It is expected that internal and external financial assistance to the MBC will be attracted by the benefits of supporting an innovative, high – visibility, impact – oriented initiative designed to: produce quantifiable and measurable outputs. eliminate duplication of efforts through periodic gap analyses and reporting. identify successful initiatives and best practices based on monitoring and conservation and development activities in the MBC for further support. and assist governments and stakeholders to produce well-designed proposals for financial support.

An additional assumption relates to the role and functions of CCAD within the Central American Integration System (SICA), which until now has channeled substantial government interest towards the Corridor. In the context of restructuring SICA, CCAD will assume a more prominent role – converting to an Environment Secretariat – thereby corroborating the project’s assumption in regard to long-term institutional stability for environmental governance. While transition adjustments could potentially affect the pace of project implementation, adaptive measures will be factored into annual operational workplans.

X. Project implementation and management

The project will be implemented under the following management and decision making structure:

a. Regional Operations Coordinating Unit (ROCU) comprised of a Project Director and technical administrative staff, will be primarily responsible for project implementation and coordination through the identification, awarding, supervision and monitoring of subcontracts. I will report to the Project Steering Committee and CCAD.

b. Project Steering Committee, comprised of representatives from CCAD, regional stakeholders groups, NGOs, the project's Technical Advisory Team, the Project Director and UNDP, will undertake the following functions: oversee project implementation by the project's Regional Operations Coordinating Unit, commission monitoring and evaluation reports, review and approve annual workplans, review and approve TOR for subcontracts and approve major subcontracts and expenditures, report to the CCAD on project progress and other issues. The Steering Committee will meet every four months via teleconferencing and electronic mail (to offset travel costs where possible and appropriate), as well as annual gathering. GEF Implementing Agencies and other bilateral and multilateral organizations will be invited to participate in the Steering Committee meetings.

c. Technical Advisory Team, comprised of high-level national and international experts with experience in the principal components of the project i.e., policy and regulatory reform, the development of incentive systems and economic instruments, participation, strategic planning, etc., will provide substantive assistance to ROCU upon request, including technical trouble-shooting and support missions, review and comments workplans, TORs, subcontracts and progress reports. Advisory Team members will be contracted on a retainer basis providing their assistance individually, with the exception of biannual meetings to assist in the formulation of workplans and the standard annual evaluation meetings to assess project progress.

The management and decision making structure outlined above will, over the course of project implementation (o years), establish the institutional framework for the Programme and its implementation over the long- term. This will include building the technical, planning, managerial and coordinating capacities of the CCAD and the national MBC Commissions to assume their roles and functions as the principal executors of the Programme. As such, it is expected that, over the course of the project's lifetime, responsibilities for decision making and operations management will be progressively transferred to the CCAD and the National MBC Commissions.

To maximize programme impact and avoid duplication of efforts, close collaboration with World Bank and UNEP as GEF Implementing Agencies with activities in the region will be established and maintained throughout the life of the project. Aspects of collaboration will include close coordination with initiatives operating at national levels, participation of WB and UNEP in Steering Committee meetings, exchange of technical expertise, and potential involvement in specific project activities.

XI. Monitoring and evaluation plan

The project's Monitoring and Evaluation arrangements encompass the collection, analysis, and dissemination of data and information on issues related to implementation progress and impact assessment. Monitoring the progress of project implementation will be carried out internally and permanently by ROCU, and evaluation of implementation and impact of the project will take place in the middle, at the end and after completion of the project, as commissioned by the Steering Committee.

Based on its monitoring and evaluation activities, the project will be able to capture and share "lessons learned". This will assist project management to systematically assess the timely and qualitative fulfillment of workplan objectives and, if necessary, to take corrective measures. M&E findings will be fed back directly into decision making and enhancement of project quality, as well as to ongoing and forthcoming GEF initiatives. lessons learned will be compiled, published and disseminated to raise public awareness of the *Programme's* activities and substantiate its credibility.

Baseline data and permanently updated data are crucial in order to measure progress of project implementation and impact indicators, including the means and sources of verification. Emphasis will be placed on collecting and systematizing data already available from various sources in order to avoid the costly collection of primary data.

Current UNDP project monitoring and reporting strategies (Tripartite Project Review-TPR, Programme Performance Evaluation Reports – PPER, Mid Term – and Final Review) will be applied and complemented by GEF M&E procedures such as the annual Project Implementation Review (PIR) and independent project and portfolio evaluations.

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