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PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT FROM THE

GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF SDR 11.5 MILLION

TO NACIONAL FINANCIERA, S.N.C.

FOR A

MEXICO MESOAMERICAN BIOLOGICAL CORRIDOR PROJECT

November 6, 2000

Colombia, Mexico and Venezuela Country Management Unit
Environmentally and Socially Sustainable Development Unit
Latin America and the Caribbean Regional Office

CURRENCY EQUIVALENTS

(Exchange Rate Effective October 24, 2000)

Currency Unit = Mexican Pesos
1 Mexican Peso = US$0.1048
US$1 = $9.534

FISCAL YEAR

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

CAS	Country Assistance Strategy
CCAD	Central American Commission for Environment and Development (Comisión Centro Americana para el Desarrollo)
CHM	Clearing House Mechanism
CICY	Scientific Research Center of Yucatan (Centro de Investigación Científica de Yucatán)
CIFOR	Center for International Forestry Research
CINVESTAV	Research and Advanced Studies Center (Centro de Investigación y Estudios Avanzados)
CONABIO	National Commission for the Knowledge and Use of Biodiversity (Comisión Nacional para el Conocimiento y Uso de la Biodiversidad)
CONANP	National Council for Natural Protected Areas (Consejo Nacional de Areas Naturales Protegidas)
COPLADE	State Planning and Development Committee (Comité de Planeación y Desarrollo Estatal)
COPLADEMUN	Municipal Planning and Development Committee (Comité de Planeación y Desarrollo Municipal)
CSC	Corridor State Council
EA	Executing Agency
Ejido	Territorial unit managed and owned by villagers
GEF	Global Environment Facility
GIS	Geographic Information System
GOM	Government of Mexico
GTZ	German Technical Assistance Agency (Deutsche Gesellschaft fur Technische Zusammenarbeit)

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Country Manager/Director:	Olivier Lafourcade
Sector Manager/Director:	John Redwood
Sector Leader:	Adolfo Brizzi
Task Team Leader/Task Manager:	Raffaello Cervigni

IBRD	International Bank for Reconstruction and Development
ICRAF	International Center for Research in Agroforestry
INE	National Ecology Institute (Instituto Nacional de Ecología)
INI	National Institute of Indigenous Peoples (Instituto Nacional Indigenista)
MBC	Mesoamerican Biological Corridor
MBS	Mexican Biodiversity Strategy
MIS	Management Information System
MMBC	Mexico Mesoamerican Biological Corridor
MSP	Medium-Sized Project
NAFIN	National Financier (Nacional Financiera)
NCC	National Corridor Council
NEA	National Executing Agency
NGO	Non-Government Organization
NPA	Natural Protected Area
NTU	National Technical Unit
OEPFZM	Union of Forestry Ejidos in the Maya Zone (Organización de Ejidos Forestales en la Zona Maya)
PMR	Project Management Report
PMU	Project Management Unit
PRODER	Regional Sustainable Development Program, implemented by SEMARNAP (Programa de Desarrollo Regional Sustentable)
PROFEPA	Federal Office of Environmental Protection (Procuraduría Federal de Protección al Ambiente)
PROMAD	Program of Environmental Management and Decentralization (Programa de Manejo Ambiental y Descentralización)
RTU	Regional Technical Unit
SAGAR	Ministry of Agriculture, Livestock and Rural Development (Secretaría de Agricultura, Ganadería y Desarrollo Rural)
SCT	Ministry of Communications and Transport (Secretaría de Comunicaciones y Transporte)
SEA	State Executing Agency
SECOFI	Ministry of Commerce and Industrial Development (Secretaría de Comercio y Fomento Industrial)
SEDESOL	Ministry of Social Development (Secretaría de Desarrollo Social)
SEMARNAP	Ministry of Environment, Natural Resources and Fishery (Secretaría de Medio Ambiente, Recursos Naturales y Pesca)
SEP	Ministry of Public Education (Secretaría de Educación Pública)
SHCP	Ministry of Finance (Secretaría de Hacienda y Crédito Público)
SINAP	National System of Protected Areas (Sistema Nacional de Areas Protegidas)
SOE	Statement of Expenditures
SRA	Ministry of Agrarian Reform (Secretaría de Reforma Agraria)
SSA	Ministry of Health (Secretaría de Salud)
TC	Technical Committee
UACH	University of Chiapas (Universidad Autónoma de Chiapas)
UADY	University of Yucatán (Universidad Autónoma de Yucatán)
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNORCA	National Union of Regional Farming Organizations (Unión Nacional de Organizaciones Regionales Campesinas Autónomas)
UYCC	Unprotected Yucatan Coastal Corridor
WRI	World Research Institute

Mexico
Mesoamerican Biological Corridor

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G. Main Grant Conditions

Annexes

Mexico
Mesoamerican Biological Corridor

Project Appraisal Document

Latin America and the Caribbean Region
Colombia, Mexico and Venezuela Country Department

Date: November 6, 2000	Task Team Leader/Task Manager: Raffaello Cervigni
Country Manager/Director: Olivier Lafourcade	Sector Director: John Redwood;
	Sector Leader: Adolfo Brizzi
Project ID: MX-GE-60908 Sector: VM	Program Objective Category: EN
GEF Supplement ID:	Focal Area: Biodiversity
Lending Instrument:	Program of Targeted Intervention: [ ] Yes [X] No

Project Financing Data [ ] **Loan** [ ] **Credit** [ ] **Guarantee** [ ] **Grant** [X] **Other: GEF Grant**

For Loans/Credits/Others:

Amount of the requested GEF Grant: SDR 11.5 (equal to US $14.84M)

Financing plan US$: $ 90.05 M

Source	Local	Foreign	Total
Government [a]	66.99	0.00	66.99
Cofinanciers (GTZ - Estimate to be finalized)	0.00	2.44	2.44
IBRD [b]	4.25	0.00	4.25
GEF	9.02	5.82	14.84
CONABIO	1.24	0.00	1.24
Beneficiaries	0.28	0.01	0.29
Total	81.78	8.27	90.05

[a] Includes US$ 57.72 million of baseline development programs
[b] Estimated amount from IBRD APL loan "Rural development in Marginal Areas" Project, phase II to be applied to project area

Estimated disbursements (Bank FY/US$M):	2001	2002	2003	2004	2005	2006	2007	2008
Annual	1.34	2.08	1.91	2.12	2.09	1.83	2.08	1.39
Cumulative	1.34	3.42	5.33	7.45	9.54	11.37	13.45	14.84

Borrower: Not Applicable
Recipient: Nacional Financiera, S.N.C.
Responsible agency: National Commission for the Knowledge and Use of Biodiversity (CONABIO) through its private Trust Fund "Fideicomiso Fondo para la Biodiversidad"
Project implementation period: 2001 – 2008 (seven years, in two phases of four and three years respectively)
Estimated effectivenes date: January 31, 2001
Estimated closing date: June 30, 2008

A. PROJECT DEVELOPMENT OBJECTIVE

Project global objective and key performance indicators (see Annex 1):
The global objective of the project is the conservation and sustainable use of globally significant biodiversity in five biological corridors in southeast Mexico, through mainstreaming of biodiversity criteria in public expenditure, and in selected local planning and development practices.

Key performance indicators are (see Box 1 on page 6 below for clarifications on terminology):

1. After 7 years, in focal areas (15% of corridors total surface):

a) rate of native habitat loss is decreased, and/or area under native vegetation cover is increased (with specific targets varying across individual focal areas);

b) degree of perturbation of populations of corridor-specific indicators species (e.g. selected birds, mammals, insects, plants) is decreased.

2. Communities (and/or producers groups) in focal areas are engaged in different forms (depending on levels of organization) of local planning oriented towards conservation and sustainable use:

a) Awareness raising (at least 80% of focal areas' surface and/or 80% of communities)

b) Problem assessment (at least 50%)

c) Priority setting (at least 30%)

d) Development of action plans (at least 10%)

3. In focal areas, no more than 30% to 50% (depending on each focal area) of production (in area or producers) is associated with selected, high-impact resource use practices detrimental to biodiversity (e.g. uncontrolled agriculture fire use, inadequate waste disposal, overfishing, over-hunting) in native ecosystems.

4. In focal areas, at least 30% to 50% (depending on individual focal areas) of production (in percentage of area, or of producers, or value) is generated by financially sustainable, biodiversity-friendly selected practices of use of natural resources (forest products, honey, maize, vegetables, ecotourism activities, etc.) in the productive landscape.

5. In the various corridors, at least 40% of (existing and new) public programs and at least 20% of public spending with impacts on natural resource base take into account biodiversity considerations, including:

a) programs re-oriented from potentially harmful to biodiversity friendly or neutral activities;

b) programs actively promoting activities of sustainable use of biodiversity.

B. STRATEGIC CONTEXT

1a. Sector-related Country Assistance Strategy (CAS) goal supported by the project (see Annex 1):
Document number: R99-92, IFC/R99-82 **Date of latest CAS discussion:** 06/08/99

The Country Assistance Strategy for Mexico identifies three core themes for World Bank Group assistance to Mexico: social sustainability, removing obstacles to sustainable growth, and effective public

governance. Within this broad framework, the CAS identifies a few priority areas for Bank involvement in the environment sector, including institutional development and decentralization of environmental management, better management of natural resources (e.g. forests, water and biodiversity), and assistance in the design of sector policies.

The proposed project supports all the above sector goals. In particular, it is expected that the project will contribute to better management of natural resources (including biodiversity and agrobiodiversity) by promoting planning and monitoring tools based on the biological corridor concept. Under the biological corridor criteria, conservation and use of biodiversity and agrobiodiversity can be better balanced within a sustainable development framework. Ecological cohesion of protected areas, the maintenance of ecological processes at the landscape level, and the cultural landscape are considered central elements for the planning and implementation of actions by regional stakeholders. Additionally, regional specificity (both ecological and social) in the design and implementation of actions and the active, informed participation of stakeholders are considered crucial elements for sustained development and project success. The corridor concept allows stakeholders to promote development and poverty alleviation within a framework that goes beyond "do no harm" environmental management: it helps align productive activities within the natural capacity of ecosystems to support these activities in the long term.

Project design and implementation centered around these 3 axes of ecological cohesion, regional specificity and informed participation will help strengthen current efforts towards decentralization in environmental and natural resources management, as well as enhanced institutional coordination. At the institutional level, the Federal Government will play a catalytic role in the promotion and design of the project; in order to ensure adequate project ownership, however, a key role in the execution and monitoring of the initiative will be played by local actors (State and Municipal governments, communities and NGOs). This approach will assist the country in further developing and refining its decentralization strategy in the environment and natural resource sector.

1b. GEF Operational Strategy/program objective addressed by the project:

The project is fully consistent with guidance from the Conference of the Parties of the Biodiversity Convention regarding conservation and sustainable use of biological diversity in vulnerable areas. It will also promote and support the increased conservation and sustainable use of agrobiodiversity by increasing economic viability for the diversified and ecologically sustainable Mayan rural economy. This strategy responds to a dual need to (i) consolidate the conservation of pristine biodiversity within and around protected areas; and (ii) conserve and sustainably use human-influenced biodiversity in cultural landscapes, including agrobiodiversity. The project addresses these needs from a multi-scale perspective and at all three levels of biodiversity (ecosystem, species and genetic or within-species variation).

The four states of the project area comprise a variety of high-priority ecoregions and biomes, including Tehuantepec and Yucatan moist forests, Yucatan dry forests, and Quintana Roo wetlands. In Chiapas there are temperate cloud forests, an ecosystem which covers 1% of the national territory but contains 10% of the country's floral diversity. The Yucatan peninsula boasts an impressive diversity of flora and fauna: over 900 plant species and 200 animal species have been found in an hectare of tropical evergreen forest, some 70 species of herpetofauna (amphibians and reptiles), 320 species of birds and 120 species of mammals are known to inhabit the Peninsula.

According to CONABIO, the high diversity present in the area results from the confluence of Neartic and Neotropical biota and spatial climatic variation accentuated by geomorphological conditions, reaching its maximum expression in Oaxaca, Chiapas and Guerrero. Both flora and fauna in these states show a significant proportion of endemic species and a variety of ecosystems of high priority for conservation:

lowland rainforests, cloud forests, dry forests, wetlands and savannas. Among these, the ecosystems bordering the Guatemalan and Belizean territory constitute the largest mass of continuous forest ecosystems in all Mexico and Mesoamerica. The mosaics of different ecosystems and different age patches within each of these ecosystems, constitute a still unique laboratory of ecological relations and are of strategic importance for continuing speciation and sheltering of species in the face of the continuing reduction of forest cover and global change.

Genetic variation within species is of particular interest in southeast Mexico: many species occur at the edge of their southern or northern geographical distributional ranges. Therefore, a high degree of genetic variability is observed, as well as distinct morphological and fenotypical characteristics. In the Yucatan Peninsula, an additional consideration contributing to communities' composition is related to their adaptation to frequent hurricanes. These events provide selection stimuli with strong effects upon successional forest stages, age-composition, and evolutionary adaptations to ecotones.

With respect to agrobiodiversity, Mexico's many indigenous groups have domesticated a great array of plants and still maintain a very high degree of genetic variation within these plants, including semi-domestic forms and the knowledge for how to use their wild relatives. Today, farmers continue to contribute this knowledge to the selection and domestication of species. In this process, which is strongly linked to traditional patterns of land-use, genetic exchange with wild relatives plays an important role in maintaining genetic variability in agrobiodiversity. With rapid deforestation, loss of biodiversity, and economic incentives that favor non-traditional land-use practices, potentially useful practices will continue to be lost unless a systematic effort is undertaken to redesign local sustainability. Agrodiversity is of particular importance in the Yucatan Pensinsula and Chiapas, where species' selection and domestication have been going on for millennia.

In addition to the biological importance of the project's area in its own right, these ecosystems form part of a critical link in the Mesoamerican Biological Corridor (MBC). The MBC is a comprehensive effort by participating countries to connect natural habitats from Mexico through Central America to Colombia. This initiative received top-level political endorsement at the Second Tuxtla Summit Meeting in 1996, in San Jose, Costa Rica, where Presidents of the Central American countries and Mexico committed themselves to establish regional cooperation to develop the "Regional Mesoamerican System on Natural Protected Areas, Buffer Zones and Biological Corridors" (MBC). In Central America, the effort is led by the Central American Commission for Environment and Development (CCAD) and supported by the GEF, the World Bank, UNDP, and numerous other national and international organizations.

The project directly addresses operational program No. 2 (Coastal, marine and freshwater ecosystems) in corridors linking protected areas of global significance; operational program No. 3 (Forest ecosystems) in virtually all of the proposed corridors; and operational program No. 4 (Mountain ecosystems) in the State of Chiapas (see Annex 13 for details). Specifically, and by establishing corridors under different levels of sustainable use (from protected areas to managed landscapes to diversified organic agriculture), the project addresses outputs under OPs 2, 3 and 4 regarding increased protection through in-situ conservation, agrobiodiversity, alleviation of demographic and economic pressures and other root causes, sustainable use, poverty alleviation and institutional strengthening for conservation and sustainable development.

2. Main sector issues and Government strategy:

Priority natural resources management and conservation challenges in Mexico include:

(i) high deforestation rates (one of the highest in Latin America);
(ii) unsustainable land use practices, including inadequate slash-and-burn agriculture and extensive cattle ranching;

(iii) unsustainable levels of exploitation and loss of habitat for aquatic resources;
(iv) unsustainable tourism development and increased urbanization;
(v) limited participation of rural populations in conservation and natural resources management efforts; and
(vi) loss of biodiversity and agrobiodiversity.

The response of the Government is based on several key lines of action, including the consolidation of the newly created Ministry of Environment, Natural Resources and Fisheries (SEMARNAP, 1994), a strategic shift towards increased decentralization of environmental management to states and municipalities; the development of an integrated model of sustainable development with a regional focus (PRODERs); increased public participation; and a stronger commitment to international environmental issues and the global commons.

With respect to biodiversity, the Mexican Government, Academia, Private Sector and relevant stakeholders have prepared, as part of Mexico's obligations under the Convention on Biodiversity, a Country study and a Biodiversity Strategy has been presented. The four broad themes of the strategy are conservation, diversified sustainable use, valorization of biodiversity, and knowledge and information management.

SEMARNAP has been developing policy instruments consistent with the implementation of the strategy. These include: (a) improving conservation through the national system of protected areas (SINAP); (b) promoting sustainable use of plant and animal species with improved management and market access; and (c) mainstreaming both conservation and sustainable use into territorial development by means of an integrated approach to regionally based land-use planning.

Implementation of the government's innovative approach, however, remains constrained by key limitations, including continued underfunding of environmental protection and sustainable natural resource management, and the challenge of establishing effective mechanisms of institutional coordination among public agencies at the various levels of government for better environmental management.

A step of key importance towards institutional coordination has been the signing in 1998 of a framework agreement for institutional coordination ("Bases de Colaboración Inter-institucional") by the Ministries of Environment (SEMARNAP), Agriculture (SAGAR), Social Development (SEDESOL), Transport (SCT) and Agrarian Reform (SRA). These have been subsequently joined by the Education (SEP), Health (SSA) and Trade (SECOFI) Ministries. By signing the agreement, these Ministries have committed to join efforts in promoting sustainable development in priority regions of the country. These regions are defined as those with high levels of poverty and social exclusion, limited availability of physical and social infrastructure, and typically high reliance on natural resources for subsistence purposes.

In early 1999, in an effort to mitigate damages from recent natural disasters (forest fires and floods) and to prevent future ones, the President of Mexico launched a country-wide initiative to promote the adoption of more environmentally conscious agricultural practices. For southeastern Mexico (one of the most vulnerable areas to natural and man-induced environmental degradation), this initiative may be a crucial opportunity for moving towards to a path of sustainable development.

3. Sector issues to be addressed by the project and strategic choices:

The project will assist the government in tackling the challenge of mainstreaming biodiversity into development planning by developing an innovative initiative in the southeast region of Mexico, which comprises the States of Campeche, Yucatan, Quintana Roo, and Chiapas. Internationally, the region is an essential building block for the Mesoamerican Biological Corridor.

Natural resources and biodiversity in this region are subjected to a number of pressures from human activities. These include very large conversion of forests and other pristine ecosystems to agriculture as a stepping stone to extensive cattle ranching; this process has been particularly intense in the tropical lowlands during the past decades. Other pressures are related to uncontrolled tourism development and over-fishing along the coasts of Quintana Roo, Yucatan and Campeche. The project's main hypothesis is that these practices result from the interplay of two major forces: on the one hand, the demand for development opportunities and activities expressed by communities residing in the project area; and, on the other hand, the supply of development programs provided by government agencies. If biodiversity considerations are poorly integrated in either of these sets of forces, most of the activities actually undertaken will result in threats to biodiversity. The strategic choice made in project design is therefore to use GEF resources for the re-orientation of both demand and supply of development initiatives. Such a two-pronged approach would induce in the medium to long term a much larger adoption of practices compatible with biodiversity conservation and sustainable use than in the present situation. A more detailed illustration of how the various components would contribute to such a goal is contained in the following section.

C. PROJECT DESCRIPTION SUMMARY

1. Project components (see Annex 1 for performance indicators):

The project will promote, in two consecutive phases of four and three years, conservation and sustainable use of biodiversity in five[1] broad biological corridors. These corridors will link ecologically and biologically existing protected areas across the productive landscape. Protected areas and connectors together would form an integrated system for the conservation and sustainable management of natural resources, including biodiversity, across the natural and productive landscapes in southern Mexico and as part of the Mesoamerican Biological Corridor (MBC). Given the considerable area spanned by the corridors, the project is designed to generate measurable impacts in 16 smaller "focal areas"; however, it is expected that the project will generate benefits spilling over to "transition areas" comprised within the corridors, as well as benefits more broadly distributed (Box 1 provides clarifications on the terminology used). Detailed information on the corridors and focal areas, including maps and an analysis in matrix form of root causes of biodiversity loss, is presented in Annex 13. Annex 14 provides an example of detailed project design and activities proposed under each component for a specific corridor, the Northern Yucatan Coastal Corridor.

Box 1 – Terminology used

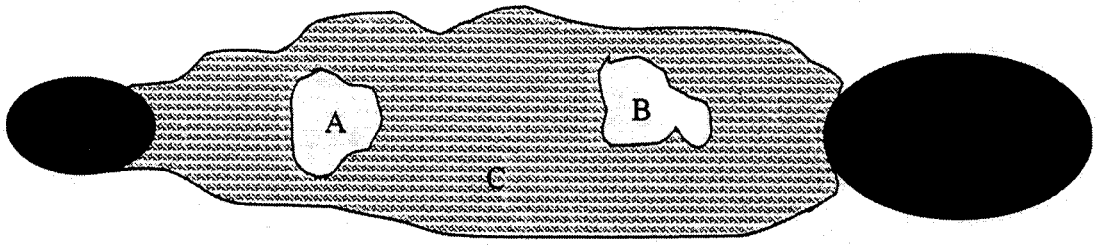
Corridor: a mosaic of land patches under various land-uses situated in between protected areas. Corridors generate global biodiversity benefits through three main mechanisms: (i) by serving as habitats with various degrees of importance for specific types of biodiversity; (ii) by allowing the flow of genes, individuals, and species among protected areas; and (iii) by maintaining ecological processes over large landscape scales. Corridors are mainly identified on the basis of type, quality and quantity of vegetation cover or other ecological criteria. Corridors are the project's broad planning tool; however, in recognition of their large territorial extension, and of the variable degree of ecological and biological integrity within them, priority or focal areas have been identified for the purposes of project design and implementation.

Focal Area: is the area in which actual project activities are targeted, and where progress and impact indicators will be monitored. The basic building blocks of a focal area are land tenure units (ejidos, communities, private properties); therefore, the boundaries of a focal area results from the boundaries of the land tenure units constituting it.

[1] The number of five is mentioned throughout the text. Though geographically and biologically a unity, the Sian Ka'an – Calakmul corridor involves two states with separate institutional and organizational arrangements and stakeholders. It is therefore considered as two corridors.

Transition Area: areas situated inside a Corridor, which are adjacent to Focal Areas, or encompass them. Even though transition areas will not be the target of specific investments, it is expected that some of the project activities, such as planning at the corridor level or investment for sustainable use at the focal area level, will generate ecological benefits spilling over to transition areas. The project will furthermore support mainstreaming of biodiversity concerns into rural development programs undertaken in the biological corridors, through improved program design and execution. By replication and extension to other locations in Mexico and elsewhere, the project can generate benefits well beyond the focal areas targeted by the project.

The diagram below illustrates visually the concept of corridor, focal area and transition area.



P1, P2:	Protected Areas	A + B + C:	Biological Corridor
A, B:	Focal Areas		
C:	Transition area		

Phasing. The project involves both activities tied to specific geographic locations (especially community planning and sub-projects of sustainable use of biodiversity), and activities of a more "diffuse" nature. Correspondingly, there will be different mechanisms for sequencing those different activities over the project's duration time. The first type of activities will be financed in 9 focal areas in a first, four-year, phase. Triggers indicators have been established (at the bio-ecological, social and institutional level, see Annex 1) to evaluate project's performance in phase 1 focal areas. The second-phase set of 7 focal areas will only be eligible for sub-project support, if/when trigger indicators for the expansion to the second phase focal areas have been met.

For project activities not tied to specific geographic locations, there will be, instead of formal phasing -- a "standard" project mid-term review to allow for possible execution adjustments. An independent evaluation would be undertaken by international experts after four years of project execution to formulate recommendations to the Bank's management for transition to the second phase.

The project consists of four components: corridor design, integration into development programs, sustainable use, and project management and coordination. Table 1 provides the estimated project budget, and the following sections summarize activities under each component. A more detailed description of the project components is given in Annex 2. Annex 3 provides a detailed breakdown of estimated project costs.

Table 1 - Estimated Project Budget

Component (US$ M)	Category	Indicative Costs (US$M)	% of Total	GEF financing	GEF (% of total)	GEF financing (phase 1)	GEF financing (phase 2)
Participatory design and Monitoring of Corridors	Technical assistance, Institutions Building	5.91	6.6	4.26	72.1	2.23	2.03
Corridor Integration into development programs	Policy, Institutions Building	71.72	79.6	3.98	5.5	2.12	1.86
Sustainable Use of biodiversity	Technical assistance, credit	9.31	10.3	4.01	43.1	2.62	1.39
Project Management and Coordination	Project Management	3.10	3.5	2.59	83.3	1.42	1.16
Total		90.05	100.0%	14.84	16.5	8.4	6.44

Note: On account of the project's objective to mainstream biodiversity criteria in public spending, baseline government programs are considered as an integral part of the project's financing package: if the project is successful in its mainstreaming efforts, funds for regular development programs that would have had a negative impact on biodiversity conservation in the corridors, would be re-oriented in a biodiversity-friendly direction, including: a) programs re-oriented from potentially harmful to biodiversity-friendly or neutral activities; b) programs actively promoting activities of sustainable use of biodiversity. See below the description of component B and Annex 4 for details.

A) Design and Monitoring of Biological Corridors (US$ 5.91 m, GEF $4.26 m)

This component will finance the detailed definition of priorities in the focal areas for conservation and sustainable use of biodiversity, through processes of participatory community planning, and on the basis of expert scrutiny of biological/ ecological field and cartographic information (See Annex 2 for details). The component will finance the establishment and operation of an integrated monitoring and evaluation system, which will track project performance through monitoring bio-ecological, socio-economic and institutional indicators at the corridor and focal area levels. Availability of sound scientific data on species, population and ecosystems is key to assess the biodiversity benefits of activities promoted under components B and C of the project.

Specific activities to be financed under this component include:

1) Analyze relevant existing information to design and implement biological connectors, focusing on the biological data, current land use patterns, user rights and the role of agrobiodiversity.
2) Involve stakeholders in local planning for management of biodiversity in focal areas. Engagement of stakeholders will take into account differences in their degree of organization, building on the results of the social assessment (see Annex 11). Moving from communities and organizations with weak (type 1a), to strong organization (type 2b), the following activities would be undertaken:
    (a) Raise awareness among stakeholders on the economic and environmental benefits of the corridors (type 1a);
    (b) Promote assessment of natural resource management problems and issues; (type 1b);
    (c) Assist in the definition of priorities for natural resource and biodiversity management (type 2a);

(d) Develop community and organization (local, regional) natural resource management strategies (type 2b).

Completion of natural resource management strategies compatible with the projects' objectives and the corridor strategies (item (d) above) will be a condition to access to the larger pilot projects under the sustainable use component (see component description on page 11).

3) Implement a monitoring and evaluation protocol. Monitoring will be implemented at different scales. A geographic information system (GIS) will integrate biological, ecological, socio-economic and institutional information. It will involve both formal scientific aspects and evaluation of change by project beneficiaries. Implementation of the M&E protocol will entail the establishment of baselines for the project's indicators. This will be done by gathering, organizing, analyzing and validating existing data (biological, ecological, socio-economic and institutional) on corridors and focal areas. Only when required data is not available, the project will finance the ad-hoc generation of baseline information.

B) Corridor Integration into Development Programs (US$ 71.72m, GEF US$3.98 million)

This component will promote removal of institutional, technical and informational barriers that prevent the adoption, in regular rural development programs, of win-win natural resources and biodiversity management options. About 50 programs for social, agricultural and infrastructure development are currently applied with federal funding (some with state/municipal counterpart) in the project area. Analysis undertaken during preparation shows that at least half of them have direct relationships with the conservation and sustainable use of natural resources and biodiversity. These relationships may be positive if programs are properly designed and executed. As the biodiversity relevance of the individual programs and the institutional, technical and political opportunities for their re-orientation vary across corridors, the implementation modalities of this component will be made specific to the characteristics of each corridor and its focal areas.

In particular, this component will finance the following activities:

1) Analysis of biodiversity impacts (positive and negative) of development programs through studies and consultations.

2) Corridor Strategies. Development and periodic update of strategies in individual corridors to promote conservation and sustainable use of biodiversity, taking into account the results of studies on biodiversity impacts, and current patterns of government programs for rural development in the corridors. Strategies would be agreed upon at the level of Corridor State Council (see implementation arrangements below) and would typically contain the following elements:

   (a) Assessment of threats and opportunities for the conservation and sustainable use of biodiversity;

   (b) Definition of short, medium and longer term targets for mitigating threats and seizing opportunities;

   (c) Prioritization of public programs to be re-designed/ modified for meeting the targets;

   (d) Determination of public programs that would co-finance sustainable use sub-projects on a matching fund basis with the GEF (see component on sustainable use below);

   (e) Outline of a strategy to ensure long-term financial sustainability of biodiversity conservation and sustainable use in the corridors, including long-term re-orientation of

public spending local mechanisms for capturing financial benefits of biodiversity (e.g., user fees, payment for environmental services), etc.

Elements (c)and (d) of the strategies would be reflected in state-specific agreements (Convenios) between State governments and federal ministries, on the basis of consultations undertaken within the State Corridor Councils and brokered at the political and instituional level within the National Corridor Council (see section on institutional arrangements below). The project's operational manual includes standard formats for these agreements.

Corridor Strategies would form the basis for determining each corridor's annual spending plan, in the sense that each annual budget would be designed to attain sequentially the various targets determined by the strategy. Corridor strategies would be the key tool for modifying the supply of development assistance, thus mirroring the community and organization level strategies financed under the design component above, which would promote the integration of biodiversity into the demand for development interventions.

3) Development Planning. Through institutional strengthening, capacity building and awareness raising, the project will promote the inclusion of provision for the conservation and sustainable use of biodiversity into selected state and municipal development plans. The selection of the state and municipal plans will be made during the first year of each phase based on consideration of institutional and political timing.

4) Program Design. The project would provide technical assistance for redesigning development programs that had been shown to have actual or potential negative biodiversity impacts. Re-design may include both positive filters (priority assigned to areas or activities with both development and biodiversity benefits) and negative filters (ineligibility for activities/ practices detrimental to biodiversity). Studies under this sub-component may include field-testing to assess the viability of the modified programs. The project would support the inclusion of biodiversity indicators in the M&E systems of development programs. Furthermore, in order to help better design future biodiversity management programs (in Mexico and elsewhere), the project would support preparation and dissemination of reports on lessons learned.

5) Program Execution. Through appropriate training of public officials at different levels and in different sectorial agencies, the project would strengthen the capacity to design and implement development plans and programs in ways that integrate biodiversity considerations.

It is expected that activities under this component would result, whenever appropriate, in strengthening Environmental Impact Assessment (EIA) guidelines and procedures to better take into account biodiversity impacts of development programs.

Activities under this component would be financed at no more than 80% by the GEF (with the exception of corridor strategies that could be financed 100% considering their importance to kick-off the mainstreaming process). GEF finances, however, would be incremental to baseline government funding of much larger amounts (with estimated ratios of 1 to 20), which would be re-oriented in biodiversity-compatible directions as a result of project's interventions.

C) Sustainable Use of Biological Resources (US$9.31 million, GEF US$ 4.01)

Under this component an integral approach will be developed to promote sustainable use of biodiversity, in focal areas within the 5 selected corridors. This approach will include activities aiming at:

1) Maintaining native ecosystems (forests, coastal ecosystems, marshes, etc.), after wildlife viewing, rule establishment for ecotourism, forest enrichment with desirable species, extraction schemes for non NTFP, etc.;
2) Restoring degraded ecosystems, such as restoration of water flow to original ecosystems (wetlands, "cienegas"), planting of native trees in "petenes," reforestation with native species compatible with biodiversity conservation objectives (corridors, etc.), pilots for rebuilding dunes through replanting with native species, etc.;
3) Developing Sustainable Use of Biological Resources in productive landscapes, such as capacity building for alternative use of wood products (non timber species), establishment of rules for extraction of ornamental plants, sustainable use of plant biodiversity in homegardens ("traspatios, solares"), test of native species as covercrops, pilot projects of improved use of local species and varieties (fauna and flora), studies on market access for organic products and/or "sustainably managed" biological resources, certification, etc.

Specific activities in this component include:

1) Capacity building and training programs on Sustainable Use of Biological Resources for producers and their organizations front line agents. This would include workshops, field visits, short study tours, producers networking, specific training on development of organizational capacity and managerial skills, particularly for vulnerable groups, such as women and indigenous groups, for a total amount of about US$ 1.0m supported by GEF grant.

2) Studies at rural community level to identify practical steps in the implementation of community/ producers groups-based sub-projects, including constraints and opportunities for developing biodiversity-friendly markets, and fine-tuning of selected practices to the specific biophysical, social and cultural conditions. Both studies and capacity building are considered barrier-removal activities and would therefore be financed 100% by the GEF.

3) Development and implementation of pilot projects of sustainable use of biodiversity. Pilot projects would be demand-driven, on the basis of broad categories of eligible expenditure, and would be financed by GEF resources either at 80% or at 33%, depending on a) the level of organization of the requesting community or other legal entity; and b) the presence of vulnerable groups. For details see Annex 2. Eligibility criteria for financing include: long-term financial and social sustainability, as well as replication potential, matching with corridor strategy, market assessment, provisions for follow-up, and replicability, all specified in the Project's Implementation Plan. Screening and approval procedures included in the PIP (and summarized in section E6, on page 27) ensure that financed activities are beneficial to biodiversity and comply with relevant Bank's safeguard policies (indigenous peoples and environmental impacts).

D) Project Management and Coordination (US$3.10 million, GEF US$ 2.59m)

This component will finance the establishment and operation of a technical unit at the central level, and of two Technical Units at the regional level (one for Chiapas; one for the Yucatan Peninsula: Campeche, Yucatán and Quintana Roo), as well as operational costs of the National Corridor Council and State Corridor Councils. The technical units will undertake day-to-day management of project activities, will

ensure compliance of project activities with project objectives and procedures, will be responsible for procurement of goods, works, services and financial audits; and will be responsible for keeping the National Corridor Council and State Corridor Councils informed of the projects and advances and operation, and taking into account their recommendations.

The National Technical Unit (NTU), in coordination with the Regional Technical Units (RTUs), will prepare and execute, subject to the no-objection of the National Corridor Council, the Consolidated Annual Plan of Operation and budget (AOP), based on annual corridor operational plans proposed by the Regional Units. The NTU will ensure the liaison between the project and related activities in the broader Mesoamerican corridor initiative. The Regional Technical Units will develop Annual Operational Plans at the corridor level, which will follow the recommendations of the respective Corridor State Council (CSC), and which will be submitted in block to the CSC for its no-objection . The regional units will report to the National Technical Unit (see section on implementation arrangements below for further details on the State and National Councils and their relationships with National and Regional Technical Units).

2. Key policy and institutional reforms to be sought:

The Bank has been assisting the current administration in the conceptual analysis of institutional coordination and regional development through Economic and Sector Work and in piloting, under the Marginal Areas APL, institutional mechanisms (such as regional councils) to promote participatory, decentralized management of rural development programs. As part of its policy dialogue with the new federal administration, the Bank will seek renewed political and institutional support to the Inter-ministerial agreement for sustainable development in priority regions. This will ensure the necessary political backing and operational effectiveness to the proposed project's National Corridor Council.

3. Benefits and target population:

Mexico as a country will benefit from project activities through the stabilization of agricultural frontiers in the mostly tropical forest areas of the Yucatan Peninsula and Chiapas and the maintenance of different ecosystems where natural resources are managed in a sustainable way. This should contribute to long-term continued growth. The project areas will benefit in terms not only of strengthened grass roots community organizations and NGOs, but also of more diversified sources of income.

The global environment benefits of the project consists of enhanced biodiversity conservation through improved ecological, biological and genetic connectivity of currently fragmented habitats. Furthermore, the project will generate global benefits by experimenting and demonstrating the bioregional approach to biodiversity management. The lessons learned in this project will serve for national, regional and global replications and adaptation of the model.

The primary beneficiaries of this project are rural communities and rural producer groups. More specifically, people who live in the corridors are the main target group of activities that promote conservation and sustainable development. In terms of social organization, most of the target populations are organized in ejidos and indigenous communities. Some ejidos are predominantly oriented to forestry activities; others combine subsistence production of principally maize with activities such as honey production and the collection of non-timber forest products. Indigenous peoples are particularly targeted because they live in areas which still maintain extensive forest cover and because they are considered the strongest allies in the conservation process due to their broad knowledge of the natural resource base and its uses. In order to adequately consider the social, cultural and economic diversity of the population groups within the corridors, including that of indigenous peoples in Chiapas, Yucatan and Campeche, the social

assessment formulated a typology of communities and producer groups (peasants). The level of organization, which to a large degree would guarantee the effective participation of these groups in the project, was considered as the main criteria of classification. The typology establishes two main types (and two sub-types, see Annex 11 for details). Within level 1 (sub-types 1a and 1b) are those communities and producer groups with lower levels of organization (about 70 percent of the total). These communities would receive support in the area of awareness raising on natural resource management issues and problem assessment. Communities with better organization level (type 2, with sub-types 2a and 2b, accounting for the remaining 30% of the total) would be able to access resources for priority setting and community level planning.

The cultural diversity of Southern Mexico is very high: Maya, Tzeltal, Tzoltzil, Lacandon, Tojolobal, Chol and Zoque represent the largest number of indigenous peoples in the four states included in the MMBC. In addition, there are also significant numbers of indigenous people who have migrated from other states, among them the Zapotec of Oaxaca, Totonac of Veracuz, Purepecha of Michoacan. Finally, other Maya-speaking indigenous people in the project area are Guatemalan refugees (Mam, Quiche and Kanjobal). An important characteristic of these groups is that most of their lands are adjacent to natural protected areas. A rough estimate of the total number of indigenous beneficiaries in the corridors is around 330,000 inhabitants. Of this total number 60,000 live in the selected focal areas and will have direct access to project funds.

Other important beneficiaries are mestizo people, who in many cases manage forestry and agroforestry systems that are recognized to play an important role for biodiversity conservation. Additional direct beneficiaries are individuals and groups who derive their livelihood from ecotourism and ethno-tourism since in the long run the biodiversity and cultural diversity of the area will be protected. The summary of the project's social assessment and the Indigenous Peoples Development Plan (Annexes 11 and 12) provide further information on the population in the project's area.

4. Institutional and implementation arrangements:

Grant Recipient: The recipient will be NAFIN, Nacional Financiera, designated by the Government of Mexico, after consultation with the Treasury Ministry (SHCP), as financial agent for the project.

Executing agency: The executing agency for this project is the United Mexican States' National Biodiversity Use and Knowledge Commission (*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*; CONABIO), a federal level, public sector intersecretarial commission.

Because CONABIO has no legal personality of its own, it will act in this project through a biodiversity trust fund mechanism (*Fondo para la Biodiversidad*; the Trust) which has supported CONABIO's activities since 1993. Nacional Financiera, S.N.C., serves as the Trust's Trustee, hiring consultants, entering into contracts, maintaining accounts and disbursing Trust funds in support of CONABIO initiatives, as instructed by the Trust's governing body known as the Technical Committee (*Comité Técnico*). The Technical Committee is controlled by representatives from the United Mexican States' environmental agencies INE (*Instituto Nacional de Ecología*) and PROFEPA (*Procuraduría Federal de Protección al Ambiente*), and the Trustee acts through the Trustee's delegate the Technical Secretary of the Trust, who by internal Trust rules must be the Executive Secretary of CONABIO. CONABIO, through its Executive Secretary and under the direction of the United Mexican States-controlled Technical Committee, carries out the project, and this is what is meant in this PAD when short-hand reference is made to CONABIO implementation of the project.

The executing agency has been chosen in consultation with SEMARNAP and NAFIN. CONABIO, which is the institution in charge of developing the National Biodiversity Strategy and Action Plan, has been

selected because of its internationally recognized expertise in biodiversity matters, the match of the project's objectives with CONABIO's mandate, and the guarantee that monitoring and evaluation results will be integrated in the national information system on biodiversity established by CONABIO. Furthermore, CONABIO is in a unique position to promote mainstreaming of biodiversity criteria in sectoral agencies, since the main participants in the "Bases de Colaboración" plus Finance, participate at a ministerial level in the steering committee of the CONABIO.

Within CONABIO, the project unit (National Technical Unit) will be established as a directorate. At the local level, Regional Technical Units will be formed, and their personnel will be contracted directly by CONABIO.

Financial Management: In order to be in full compliance with Bank requirements per OP/BP 10.02, a certified specialist carried out the financial management assessment of the project's executing agency. This review concluded that project's financial management system is adequate for final project processing and submission to the Board, since it satisfies the Bank's minimum financial management requirements (including accounting system, internal control, planning, budget and financial reporting system), as spelled out in the Bank's guidelines for review of FM Systems.

The project executing agency is taking actions to have a Management Information System (MIS), which will produce quarterly Project Management Reports (PMRs) and eventually allow for PMRs-based disbursements. Traditional disbursement methods (SOEs, special commitments, petty cash where applicable, and direct payments) will be used until (i) PMR-based disbursement has been officially approved by the SHCP (Secretaria de Hacienda y Crédito Público) and (ii) both National and regional units are ready to adopt this methodology.

A certificate 4-B was issued jointly with an action plan, which describes the steps that the executing agency will take to establish an MIS that can provide, with reasonable assurance, accurate and timely information on the status of the project (PMR) as required by the Bank for PMR-based disbursements. Full implementation and operation of satisfactory project management information system and reporting is one of the grant conditions of effectiveness.

Institutional framework:

National level. A National Corridor Council (NCC) for the project will build on and enhance the project steering committee established during preparation. The latter comprises Directors General in charge of regional programs in the Ministries participating in the Institutional Coordination Framework (SAGAR, SEMARNAP, SEDESOL, SCT, SRA, SSA, SECOFI, SEP), as well as senior officials from the National Ecology Institute (INE). The unit for international affairs of SEMARNAP acts as Secretariat of the committee. This structure will evolve into a National Corridor Council (NCC) after being enhanced to ensure representation of other sectors. The plenum of the enhanced NCC will include a total of 19 members; in addition to the federal government (4 members), there will be representation from CONABIO (2), National Commission for Protected Areas (1), the States' governments (4), the academic (2), NGO (2), social (2) and private (2) sectors. As specified in detail in the project's PIP and operational manuals, the NCC will meet twice a year to discuss the project's overall strategic and operational framework (including linkages with the broader Mesoamerican Corridor, fit of the project within development policies and programs in southeast Mexico), to review progress in project implementation and achievement of project objectives, to review and approve in general terms the consolidated annual operational plan and budget, and to provide recommendations to the National and Regional Units on project implementation matters. . An Executive Committee of three members within the NCC will act on its behalf when the NCC is adjourned. Its main function is to oversee the functioning of the executing agency and the compliance with the

Executing Agreement covenants. It will be composed by SEMARNAP, CONABIO, and one representative of civil society.

Local level. In each state, a Corridor State Council (CSC) representing federal (3 members) and state government (3 members), local municipal governments (2 members), NGO (2 members), academic (2 members), social (2 members) and private sectors (2 members) would discuss and oversee strategic aspects of project implementation at the corridor and focal area levels. Based on specialized work coordinated by the Regional Technical Unit, the State Corridor Council would adopt a strategy for the Corridor at large, including criteria of geographic priority, short- and mid-term targets, area of concentration of the mainstreaming efforts, and an action plan for resource mobilization to ensure long-term sustainability of Corridor activities.

Project management: CONABIO's "Fondo para la Biodiversidad" will be responsible for the overall technical, administrative and procurement implementation. A specialized unit (National Technical Unit, NTU) within CONABIO will be formed for that purpose. The unit will be headed by a project general director, who will be reporting to the executive secretary of CONABIO. The project general director will coordinate a small team of two staff: an administrator, in charge of planning, financial management, accounting, and procurement; and a secretary. The NTU will also be responsible for risk management and communication. For information technology, the project will rely on existing capacity in CONABIO. This core team will be complemented as needed by experts (e.g. in Monitoring and Evaluation) hired through short-term consulting contracts.

At the local level, two Regional Technical Units will be established, one for the Yucatan Peninsula corridors (Yucatan, Campeche and Quintana Roo); and one for the two corridors in Chiapas. The Yucatan Peninsula Unit will be formed by five staff: a regional director (responsible for the Yucatan Corridor), two corridor coordinators (one for the Campeche corridor and the other for the Quintana Roo corridor), a specialist in projects of sustainable development during the project's first phase, and an administrator/secretary. The Chiapas Regional Technical Unit will be formed by five staff: a regional director, two corridor coordinators (one for the northern, the other for the southern Chiapas corridor), a specialist in sustainable development projects, and an administrator/secretary. In both cases the regional director will have overall responsibility of the Unit's functioning and a specific responsibility for the corridor integration component. The Regional Technical Units (RTUs) will be responsible for the overall technical and administrative implementation of the project within their states. RTUs will cover the functions of planning, monitoring and evaluation, financial management, accounting, risk management, procurement, information technology and communication. The RTUs will report to the project's general director.

Program Cycle. Every year, the Regional Technical Unit will prepare, in coordination with the NTU (National Technical Unit), an Annual Corridor Plan for each State, which will reflect recommendations from the Corridor State Council (CSC), and which will be cleared by the CSC on a no-objection basis. The State Corridor plans would include reports on past performance and output, reports on progress towards achievements of corridor and focal areas objectives, priority programs that would co-finance pilot projects on a matching fund basis, and a budget for activities to be financed during the following year. The budget would indicate source of financing (GEF, Federal and local governments, other sources). The NTU will prepare a consolidated AOP, and present it for review to the National Corridor Council (NCC). The NCC would approve (or recommend changes to) the work program as a whole (i.e. the aggregate of the individual corridor plans) on the basis of consistency with the project's objectives, conformity with the procedures established in the Project Implementation Plans (PIP) and related operational manual, and equilibrium between components. The World Bank would provide technical comments to Corridor Operational Plans prior to submission to the National Corridor Council; and it would provide its no-

objection to the work program as a whole, subject to conformity with project documents and compliance of the annual budgets with the pre-determined co-financing ratios for use of GEF resources (as specified in the description of the individual components above).

The full description of all administrative procedures, including how to plan, prepare, select, contract, finance, and supervise project activities will be spelled out, as a condition of project effectiveness, in the final draft, acceptable to the Bank, of the Project Implementation Plan (PIP) and related operational manuals. These manuals will guide the implementation process by setting the requirements and rules of project operations for the NCC, executing agency, National Technical Unit, CSC and Regional Technical Units.

Accounting, financial reporting and auditing arrangements: Each of the RTUs will maintain separate project records and will report on a monthly basis to CONABIO via the National Technical Unit. Such records will be maintained in order to reflect, in accordance with sound accounting practices (compatible with International Accounting Standards and acceptable to the Bank), the operations, resources and expenditures of each project activity. The administrators in the National and Regional Units will be qualified financial and accounting professionals. Adequate financial management arrangements for the project are included in the PIP and Operations Manual. The National Technical Unit will prepare combined financial statements for the project as a whole. The project accounts maintained by the National and Regional Units will be audited periodically; consequently, an annual audit report of project accounts, and a separate opinion with respect to the Statements of Expenditures and the Special Account will be prepared by independent auditors acceptable to the Bank, in accordance with International Standards on Auditing and the guidance provided in the "Guidelines and Terms of Reference for Audits of Projects with Financing by the World Bank in the Latin America and Caribbean Region" (the Guidelines). The auditors will be selected before the beginning of each year to be audited. All Regional Units will submit information required for the audits in a timely manner, so that CONABIO via the National Unit will be able to submit to IBRD a certified copy of the agreed audit reports no later than six months after the end of each year. TORs for all audits should obtain the Bank's no-objection.

Procurement arrangements: The executing agency will be responsible and would follow standard Bank procedures for all Project procurement, and ensure their enforcement in procurement by beneficiaries. A four-year Procurement Plan is included in the Project Implementation Plan, and will be updated as part of the project's mid-term review for application to the rest of project implementation. Procedures for procurement would be incorporated into a specific Operational Manual for the National and Regional Units. Procurement would include consultant services, goods and equipment, training, minor civil works, and grants.

Disbursement and flow of funds: A Special Account in US dollars with an initial deposit of US$ 650,000 would be established. This special account will be replenished and will be used for all transactions with a value of less than 20% of the amount advanced to the Special Account. Traditional documentation requirements apply for direct payments, special commitments and statements of expenditures (SOEs). If project is converted to PMR-based disbursement methodology, disbursement procedures should be in line with the Financial Management Initiative (FMI). The executing agency, with technical support from the financial agency NAFIN, would prepare the necessary documentation for prompt disbursements.

An operating account in Mexican pesos would be established and should be used for all project transactions. This local-currency operating account should be replenished on monthly basis. The amount to be transferred from the Special Account to this account must be only the estimation to cover one month of eligible expenditures.

GEF funds will be channeled from Nafin to CONABIO, which will be responsible to transfer funds on the basis of approved operational plans to the Regional Technical Units. The project's special account will be handled outside of the regular fiscal budget process, and therefore will not be vulnerable to cuts in the budget of any of the government agencies in the National Corridor Council.

Management Information System: Satisfactory management information systems will be established in the National and Regional Units. The system will cover procurement, financial management, monitoring and evaluation, communication, scheduling and planning components. The procurement activities will include establishing software for preparing and processing procurement contracts and procurement reports for PMRs. The financial management system includes COI accounting software to track the flow of project funds and will also produce the Statement of Expenditures (SOEs) and PMRs. The communication module will utilize web-based software to function as a the central hub for information exchange internally within the project and for informing external audiences on the advancement of the project. The scheduling and planning module will use Microsoft Project to develop the annual operating plans and monitor and control them.

Monitoring and Evaluation: A Monitoring & Evaluation protocol has been developed during project preparation, based on indicators listed in the project's logical framework. The system will track development objective (impact) and component (process) indicators from the project's logical framework and will be based on information at the project, corridor, focal area and community levels. The protocol allows for flexibility in adapting the general framework to the conditions of specific corridors; and describes processes to be followed for data collection, analysis, consolidation and interpretation. Corridor-specific indicators will be included in the final complete version of the M&E protocol, to be submitted to the Bank for no-objection as part of the Operational Manual as a condition of effectiveness (see section G below). The NTU will be responsible for integrating and harmonizing the various aspects of monitoring (biological, ecological, socio-economic, institutional). In recognition of its comparative advantage and existing installed capacity, CONABIO will be responsible for all biological, ecological activities of the M&E sub-component, including its design, subprojects, consultant contracts, Certain specialized technical tasks will be contracted out to qualified academic or research organizations, equally under terms of reference prepared by the National Technical Unit in consultation with CONABIO's regular technical staff.

Supervision: The Bank will conduct supervision activities in partnership with CONABIO and NAFIN throughout project implementation. Efforts will be made to link supervision missions to the project's programming cycle, with details to be specified in the operational manual. It is expected that supervision activities will pay special attention to the effectiveness of the project implementation arrangements (including financial management aspects), to enable their timely adjustment and fine tuning.

An independent evaluation of project performance will be undertaken, under terms of reference satisfactory to the Bank, no earlier than the third full year of implementation of the project. The purpose of the independent evaluation will be a) to assess overall project performance (including progress in delivering outputs and achieving objectives); b) assess compliance with cost-sharing arrangements; c) evaluate progress in implementing the IPDP; d) evaluate whether the triggers indicators (described in Annex 1 of this PAD) for application of planning and investment activities to phase 2 focal areas have been met. The Independent Evaluation will provide recommendations on a) the readiness of the project to start planning and investment activities in phase 2 focal areas; b) the need for carrying out fine-tuning and adjustments to project design.

Based on the outcome of the independent evaluation, CONABIO, NAFIN and the Bank will conduct a mid-term review of the project, which will have the objective of a) defining arrangements for transition to phase 2 focal areas (including an action plan for compliance with the triggers indicators, should some of them not

have been met); b) updating the IPDP; c) defining any other adjustment to project design and implementation arrangements that may be necessary.

CONABIO, NAFIN and the Bank will conduct a final review of the project during the last year of implementation; this review will provide the basis for the project's implementation completion report.

D. PROJECT RATIONALE

1. Project alternatives considered and reasons for rejection:

Main choices made during preparation concerned the prioritization and design of, and the sequencing of activities in, biological corridors.

Concerning the number, over 30 biological corridors were proposed in the project's inception workshop (held in October 1998 in Cancún), linking protected areas in the southeast of Mexico. The existence of a wealth of technical and scientific knowledge and of many experiences with natural resource management suggested promising opportunities for integrated biodiversity conservation in many (if not all) of the proposed connectors.

Based on considerations of biodiversity relevance, costs, availability of technical capacity, and opportunities in political and institutional terms, the Bank and Mexican teams have engaged in a process of priority setting within the corridors universe initially identified. After a first round of corridors screening, six corridors with 19 focal areas were selected in 5 southern states of Mexico (Campeche, Yucatan, Quintana Roo, Chiapas and Tabasco). However, subsequent preparation work led to further reduce and concentrate the scope of the work. The Mexican and Bank design team reached the decision not to include the state of Tabasco in the project area, since the preparation process has proven that there are very few committed institutions and individuals in the state. The apparently low institutional capacity in the state of Tabasco has not allowed the preparation team to make the level of progress attained in the other 4 states.

While the exclusion of Tabasco caused the number of focal areas to drop from 19 to 16, the project budget was not reduced, since advances in preparation (including more detailed definition of the project areas in the remaining states) induced an upward revision of the estimates of per-focal area implementation costs.

In terms of the design of corridors, the option of distributing efforts throughout the entire extension of the corridors was discarded in favor of an approach prioritizing activities within focal areas (Box 1, on page 6). Finally, on sequencing of implementation, the project team discarded the possibility of implementing the project in just one phase. A phased approach was preferred to reduce risks associated with the limited international experience with biological corridors and in order to be able to better incorporate lessons learned as they become available. Therefore, implementation will start in 9 focal areas during the first 4 years of the project. In the second phase the scope of actions will be widened to 7 additional focal areas.

2. Major related projects financed by the Bank and/or other development agencies (completed ongoing or planned):

The project will take advantage of strategic, operational and institutional linkages with a number of closely related initiatives in the southeast of Mexico, implemented by the Bank, UNDP and other multilateral and bilateral agencies. Table 2 - Related Projects - summarizes some of the most important activities planned or ongoing in areas including institutional development and decentralization, social development, natural resource management and biodiversity conservation.

Related Bank Projects

The project fits well within the current portfolio of World Bank projects in relevant sectors. The GEF-financed Protected Areas project supports basic conservation in 10 Protected Areas throughout the country; five of these (Sian Ka'an, Calakmul, Montes Azules, Ria Lagartos, El Triunfo) are adjacent to, or surrounded by, the proposed corridors, and will therefore benefit from the enhanced biodiversity protection provided by the corridors. The Bank finances two related projects: the Mexico Rural Development in Marginal Areas Project, which aims at improving the well-being of the rural population and expand the opportunities for integrating smallholder marginal producers into the growth process; and the Agricultural Productivity project, which operates in all 4 corridor states to promote sustainable increase in productivity and food security. The World Bank contributes baseline funding for an estimated US$ 4.2 million in support of productivity increases in maize based "milpa" systems and in fruit, coffee and livestock, 'traspatio' production to complement food and income in the selected corridor areas.

Other on going natural resource management Bank projects (Community Forestry and In Farm and Water Management) contribute to strengthen the institutional and regulatory framework for sustainable natural resources management.

The Bank further provides analytical assistance and financial support to indigenous people development, through its indigenous profiles 1 and 2, and the GEF initiative for biodiversity conservation in indigenous communities, respectively.

Coordination with other GEF Implementing Agencies

(a) Country Programmatic Framework for Biodiversity
The Government of Mexico is working with the GEF Secretariat and the Implementing Agencies to develop a Programmatic Framework for GEF support of biodiversity conservation initiatives in Mexico over the next 5-10 years. The Framework consists of a comprehensive approach that commits to measurable progress in conservation and sustainable use, while incorporating biodiveristy objectives into the country's national strategies and plans. It is intended to be a cost-effective means to help the country conserve and sustain its vast biodiversity.

A key consideration for Mexico in the development of the programmatic framework is the viability of the current, robust pipeline in conservation and sustainable use that has been identified by the country with the assistance of the Implementing Agencies. This pipeline – containing the first full-scale projects in biodiversity in the past eight years – supports many of the areas and national priorities identified in the Mexican biodiversity strategy (MBS) as well as the instruments developed by the Government of Mexico for conservation and sustainable use.

In its four principal areas (conservation, sustainable use, biodiversity knowledge and natural resource valuation) the MBS identifies areas of opportunity for increased knowledge and research as well as for engaging other sectors and actors in cross-cutting efforts needed to deepen and strengthen the country's capacity to respond to threats. The combination of the MBS and diverse policy instruments and commitments enable Mexico to focus on measurable outcomes and address the gaps identified in the development of its Action Plan.

The pipeline responds to national priorities in the four "pillars" of the MBS providing for in situ conservation, sustainable use initiatives and economic and social valuation of natural resources. Each of the projects in the pipeline supports different aspects of the national strategy. The Consolidation of SINAP proposal is the centerpiece of the conservation component, and focuses on the government and civil society sectors. The Indigenous and Community Biodiversity Conservation project (COINBIO) provides an

important complement to the SINAP approach by focusing on conservation through the indigenous and community sectors, and protecting biodiversity through non-federal conservation regimes.

The conservation projects are complemented by sustainable use projects such as the current proposal and the Biodiversity Conservation and Sustainable Use in Three Priority Regions (see below). These initiatives will contribute to identifying innovative and decentralized conservation and sustainable use mechanisms that can serve as models for long-term, replicable conservation, as well as promoting the integration of civil society in biodiversity and buffer zone management, consistent with long-term government strategies.

(b) Project – specific Coordination

In addition to coordination at the programmatic level, linkages with specific GEF/UNDP activities will be very important. In particular, coordination arrangements with the Small Grants Program (SGP) in the Yucatan Peninsula have already been established during preparation, and a protocol has been agreed on how to ensure effective cooperation, through sharing of information and knowledge, joint funding of projects of sustainable development and integration of project selection, monitoring and evaluation mechanisms. The proposed Corridor project will benefit from the successful projects of sustainable developoment carried out by the SGP and will take advantage of these experiences. The teams of SGP and the Corridor projects have developed procedures to co-finance projects of sustainable use of biodversity in geographical areas of common priority, including mechanisms to reach an agreement with local stakeholders, and considering policies of both programs.

With respect to the UNDP/GEF project "Conservation of Biodiversity in Three Priority Regions" – currently under preparation - the proposed Corridor project is adopting the same regional development approach in the design of the sustainable use component. Information on lessons learned will be shared as the two projects move forward during implementation. Close relations would also be maintained with the UNDP/GEF project proposing strengthening of a protected Pantanos de Centla wetland in Tabasco, which would be fully complementary with the establishment of biological connectors under the Corridor project in the neighboring states.

Table 2 - Related Projects

Sector issue	Project	Latest Supervision (Form 590) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
1. Decentralization – Institutional Development	1.1 Environmental Management and Decentralization Project (PROMAD)	Under preparation	Under preparation
	1.2 Institutional Coordination For Regional Sustainable Development Economic And Sector Work (Grey Cover)	Not applicable (non-lending service)	Not applicable (non-lending service)
2. Natural Resource Management, Biodiversity Conservation	2.1 Rural Development in Marginal Areas	S	S
	2.2 Community Forestry	S	S
	2.3 Protected Areas Program (GEF)	HS	S
	2.4 Protected Areas Program 2 (GEF)	Under preparation	Under preparation
	2.5 Mesoamerican Barrier Reef (GEF, multi-country)	Under preparation	Under preparation
	2.6 Instruments for Private Lands Conservation (GEF MSP)	Under preparation	Under preparation
	2.7 El Triunfo Productive Landscape (GEF MSP)	S	S
	2.8 Oaxaca Sustainable Hillside Management (GEF MSP)	S	S
	2.9 Regional Action Plan for the Gulf of California (GEF)	Identification	Identification
	2.10. Agricultural Productivity		
3. Social Development	3.1 Indigenous Country Profiles 1 and 2	Not applicable (non-lending service)	Not applicable (non-lending service)
	3.2 Conservation in Indigenous Communities (GEF)	Under preparation	Under preparation
Other development agencies			
UNDP/GEF	Small Grants Program – Yucatan Peninsula		
	Conservation of Biodiversity and Sustainable Development in Three Priority Regions		
	Conservation of Centla Wetlands, Tabasco, and Terminos Lagoon, Campeche		
GTZ/DFID	Sustainable Forestry in Quintana Roo and Campeche (Plan Piloto Forestal)		
	Cloud Forest in Chiapas (DFID)		

HS: Highly Satisfactory; S: Satisfactory

3. Lessons learned and reflected in proposed project design:

The design and preparation of the project has drawn on lessons derived from World Bank experience in implementing biodiversity projects. According to a recent World Bank report, *Mainstreaming Biodiversity in Development: A World Bank Strategy for Implementing the Convention on Biological*

Diversity, the key factors contributing to successful project implementation include: institutional strengthening, participation of local stakeholders, flexibility and decentralized management of protected areas.

Similar lessons come from the Bank's experience with Biodiversity projects in Mexico (especially the first phase of the GEF Protected Areas project) and are being taken into account into the design of the Corridor project. From the Protected Areas Project it was learnt that institutional development and the broader policy environment must be addressed. In the present project important resources are therefore assigned to training of officials at different levels, while the policy environment is systematically addressed by building on an Intersecretarial Agreement (Bases de Colaboración Interinstitucional). Also a different financial mechanism is proposed whereby resources will not be channeled via the federal budgetary institutions (as in the pre-restructuring Protected Areas Project), but via an extra-budgetary account. This will insure simplicity in the management of the funds and expeditiousness in project implementation.

Second, a top-down approach to project design and implementation does not work or at least has serious limitations when dealing with activities affecting local peoples and organizations of civil society. Therefore, the project has adopted a participatory approach involving stakeholders in design and implementation of the project. In all states multistakeholder workshops have been organized, to discuss the project's goals and components. Local people have been consulted directly and through experts (farmers' organizations, NGOs, research institutions, government agencies). Additionally, anticipating project implementation, state corridor consultative groups have been formed in three states (Campeche, Quintana Roo and Yucatán), while steps are being taken in one (Chiapas). As a result of the process, a consensed menu of projects of sustainable development is available at present.

Adequate public participation in biodiversity project areas requires activities oriented to strengthen social organizations and build capacities on sustainable development. The project builds on the experience of the Technical Advisory Committees of the Protected Areas and adopts State Corridor Councils as participatory and transparent fora at the corridor to promote decisions on strategic aspects of the projects. To assure a continuous participation of stakeholders in the project during implementation, a communication strategy has been developed as an integral part of the project implementation structure (Annex 15).

Similarly, the main lesson of working with small producer, rural organizations is that one must start learning about the existing patterns of natural resource management and build on them, combining local traditional knowledge with modern technology and working together in the search of technological alternatives which are appropriate to their socioeconomic conditions. In addition, it is important to promote producers organizations around economic incentives like improving crop marketing.

Finally, a major effort is required to educate trainers to provide effective support to rural communities and indigenous people, to acquire the right communication skills, to get the technical know-how needed for the adaptation of technical recommendations to specific landscape and/or agroecological conditions and to contribute to the development of economic and market-oriented sustainable use of biological local resources.

4. Indications of recipient commitment and ownership:

Following a large number of studies in the past few years, undertaken by the conservation and academic communities, and promoted by the National Institute of Ecology, there have been recent

expressions of high level political commitment to objectives of sustainable natural resource management in the southeast of Mexico in the context of the Mesoamerican Corridor.

In particular, during a recent meeting of the Executive Director of the United Nations Environment Program (UNEP) with Mexico's President and with the Environment Ministers of Central America, the Mexican Environment Minister expressed unequivocal support to the MBC, in accordance with the priorities presented on behalf of the region.

The existence of a Presidential initiative (described above, section B2) to move towards a more sustainable agriculture nationwide attests to the emergence of a long-term view that is not only responding to particular pressures or groups, but is strongly committed to the national interest of sustainable environmental management and the international objectives of biodiversity conservation.

Important technical and policy fora that have endorsed the Corridor idea include the National Council for Natural Protected Areas (CONANP) (which is formed by researchers, NGOs, industry, producers organizations), and the eight ministries participating in the Institutional Coordination Framework referred to above. The latter, in particular, are committed to re-orient development programs to better integrate biodiversity concerns into them.

The national GEF focal point has endorsed the project as a national priority and has requested GEF support.

5. Value added of Bank and global support in this project:

The World Bank through a GEF project Pilot Phase has been collaborating with the Government of Mexico in protecting 10 protected areas, including 6 areas in the Southeast. With the Corridor project presented here, the Bank will assist the government in addressing the next challenge, that is, sustainable biodiversity management beyond protected areas. GEF funds under this proposal will complement and provide synergy to those already invested, by focusing on biological corridors as a complementary strategy for biodiversity conservation. GEF involvement is justified on the grounds of the project's innovative approach to biodiversity mainstreaming into development programs and biodiversity management into the productive landscape. The potential replication benefits of such an approach to other GEF-financed initiatives are remarkable.

By virtue of its technical expertise, its knowledge of the project area acquired through past and current lending operations (e.g., the DRD1, DRD2 and marginal areas projects), its dynamic network of contacts with the international development community, and its active policy dialogue with the government, the Bank is well placed to mobilize and catalyze the human and financial resources required to consolidate sustainable natural resource management in southeast Mexico, and to promote –through appropriate use of the proposed GEF grant- a long-term strategy of biodiversity mainstreaming.

E. ISSUES REQUIRING SPECIAL ATTENTION

1. Economic

A key issue to be addressed during implementation concerns adequate mobilization of resources for full funding of baseline activities. Estimates based on project team's consultations with the government indicate a strong commitment of the Federal Government to earmark funds from its

regional development programs to the project's focal areas. During appraisal, the SEMARNAP Secretary indicated that, as part of the 2001 budget process, the Ministries participating into the Priority Regions program would prioritize federal programs, and define budgetary amounts to be concentrated in the project area and to serve as a basis for the project's re-orientation effort. During negotiations, a Counterpart Resource Obligation Schedule was discussed and agreed upon, which includes projections, throughout the project duration, of federal resources to be earmarked to corridor areas for full funding of baseline activities.

Economic evaluation methodology:

[ ] Cost benefit [ ] Cost effectiveness [X] Incremental Cost [ ] Other [specify]

An analysis of Incremental Costs and Global Environmental Benefits is presented in Annex 4.

2. Financial

The financial viability of selected alternative options of biodiversity-friendly natural resource management has been analyzed in several studies undertaken during preparation. Financial feasibility is one of the criteria included in the Project Implementation Plan (and related operational manuals) for the selection of sub-projects under the sustainable use component.

3. Technical

Corridor Design Component: As has been mentioned earlier, international experience with the design of biological corridors is limited. Therefore, a substantial effort took place to identify best practice and lessons learned. An international scientific team, consisting of scientists from Oxford University, Bank staff and Mexican scientists, summarized the scientific basis for biological corridor design, international experience in corridor implementation, and developed a set of explicit recommendations to develop design features applicable to the local realities of southern Mexico. The Bank also commissioned a literature review on biological corridors (Fernandez 1999). The results of these studies were discussed at a workshop held in CONABIO in September 1999 with top Mexican scientists. As a result, design is based on a state of the art understanding of issues and limitations related to corridor experience. Through this process, the following issues have been identified as key to be closely watched during project implementation:

(i) A primary goal of biological corridors is to maintain biodiversity and ecological processes over large scales. Therefore, complete and solid biological and ecological information is indispensable to evaluate the advance towards that goal, and biodiversity goals and monitoring efforts need to be taken into account and made compatible at site, local, and regional levels. CONABIO's participation in the project, and its responsibility in biological and ecological aspects, is particularly important for this component due to its knowledge and experience in biodiversity information management.

(ii) Scientific uncertainty. According to Simberloff, "there is no unified scientific agreement regarding the role of corridors to combine genetic, demographic, and other forces threatening small populations nor is there accord on the relative importance of these threats." Therefore, it is imperative to maintain, as much as possible, a non-intrusive, flexible principle and avoid the implementation of major and irreversible management actions (precautionary principle).

(iii) The long-term sustainability of corridors is strongly linked to their ability to provide multiple services to societies; these services go beyond biodiversity conservation and include the

generation of economic opportunities to local people that live and depend on natural resources. The multiplicity of goals and stakeholder interests needs to be recognized as an integral part of corridor design and were identified as part of the incremental cost analysis.

(iv) In addition to the precautionary principle, experience in the Wadden Sea regional program suggests the need to also consider the following principles: principle of careful decision (making decisions on the basis of best available information); principle of avoidance (avoiding potentially damaging activities); principle of translocation (translocate damaging activities to those areas where their impact will be minimal); principle of compensation (harmful effects which cannot be avoided must be balanced by compensatory measures); principle of restoration (where possible, key habitats must be restored); principle of best available techniques (to apply latest technological tools that may enhance effectiveness); and principle of best environmental practice (to apply optimal combination of measures to limit environmental impacts). Wherever applicable, these principles have been used in the design of this project.

(v) The ecological considerations developed for corridor design (Oxford, 1999) include three major axes: biodiversity, connectivity, and generation of ecological benefits. A matrix of land-use options allows for values to be assigned to each axis for each land-use category. In this way, it is possible to determine relative biodiversity values for each land-use option. This matrix constitutes an important tool to define optimal land-use configurations.

(vi) Monitoring and evaluation. An M&E protocol has been developed, that considers the systematic and periodic gathering of information at different scales by combining participative methods of monitoring by local people with formal scientific methods. During implementation, monitoring will permit the detailed understanding of patterns of land-use change and status of biodiversity as a basic input for adaptation of corridor strategies. The implementation of the protocol can draw on existing information and on monitoring funded through other sources than the project.

Sustainable use component: The Project Implementation Plan specifies criteria that would ensure quality of technical activities developed by sub-projects, being technological, or economic in nature, such as improved *milpa* or pasture management, marketing of organic productions, ecotourism, aquaculture, artisanal production, etc. Specialized technical assistance and farmers' research will be favored at farm and rural community levels to achieve fine-tuning of recommended activities to specific agroecological, social and cultural context and consequently to ensure economic, social and cultural sustainability of the technical changes recommended. Capacity building activities will be provided to farmers, producers and their organizations, as well as to front line agents and local authorities to facilitate the internalization of biodiversity conservation objectives into current practices and programs of natural resources management. Emphasis will be on farmer to farmer visit and networking.

Mainstreaming component: Retrofitting biodiversity compatibility criteria to existing development programs may be challenging in some cases, due to the dearth of relevant technical experience, as well as to the complexity of current practices of design and implementation of the programs' operational manuals. Implementation of this component will target programs with large biodiversity impacts while striving to keep administrative and management costs within reasonable norms. It is expected that while encountering some difficulty in applying it to existing (and long consolidated) programs, the proposed mainstreaming approach may generate significant methodological benefits (e.g. lessons learned), thereby influencing at an upstream stage the design and implementation of future development programs in Mexico and possibly also in other countries.

4. Institutional

[ ] Summarize issues below (e.g., project management, M&E capacity, administrative regulations)
[X] To be defined (indicate how issues will be identified) [ ] None

Current political timing (with little time remaining to the present federal administration) may pose both opportunities and challenges for the project. On the one hand, the current administration, which has distinguished itself for a strong commitment to environmental matters, welcomes opportunities to leave a legacy of initiatives with a long-term vision. On the other hand, its ability to accompany those initiatives all the way from design to fruition is limited by the very short time it will remain in office.

The success of the project will, therefore, greatly depend on the existence of an incentive framework that encourages the new federal administration to reiterate the commitment. Three factors are likely to generate those incentives: a) the momentum that the Mesoamerican Corridor Initiative is gaining at the international level will make Mexico's participation in the effort more necessary (and more politically palatable); b) the awareness-raising and social engagement activities that will be undertaken at the local level during project preparation and the initial stages of implementation will generate a "local demand" for the Corridor Initiative that will likely translate in renewed political commitment; c) the proposed phased approach to project financing will generate incentives for the new administration to comply with the conservation and sustainable use targets developed during preparation.

5. Social

A social assessment (SA) and participatory rural appraisal, with special attention for indigenous peoples, has been completed. The assessment effort started by analyzing existing information, specially that provided by the Indigenous Peoples Profiles of Mexico (Web page www.unam.mx/ciesas), prepared by several government agencies and NGOs with World Bank support. It has been further developed by studies and fieldwork carried out at the corridor and focal area levels by local NGOs and social consultants, whose expertise is highly recognized. Implementation of this process essentially has entailed the following activities:

1) Identification of key stakeholders in the corridors MMBC and particularly in the focal areas; particular attention is paid to lands belonging to indigenous communities, which are covered by World Bank OD 4.20.

2) Identification of key social issues in biodiversity conservation and sustainable development of the MMBC. Five key issues have been identified:

- the need to consider the region as a living space;
- the relationship between local culture and the environment;
- land tenure and distribution;
- economic activities;
- social organization.

3) Determination of the potential social impacts of the MMBC, with special focus on indigenous peoples and gender, and including quantitative and qualitative methods and tools.

4) Formulation of an action plan, including a framework of social participation with a specific strategy to insure that indigenous peoples participate in the project cycle, receive benefits compatible with their culture and are not affected adversely by project activities.

The project includes an Indigenous Peoples Development Plan (IPDP) (see Annex 12), oriented to find practical ways to involve indigenous peoples in the design and implementation of the project, particularly via technical assistance and capacity building activities. It essentially entails the creation of a special window to finance pilot projects presented by vulnerable groups (such as indigenous communities and women groups). This represents about 10% of total project resources over an eight-year period. But, in addition, the above groups can also access the project resources for activities such as workshops, pilot projects, studies, and capacity building and planning, which amount to some 40% of the project's budget.

Considering the special conditions of the focal area La Cojolita (high level of social conflicts and land tenure problems), the IPDP specifies that during the first year of project implementation there will be additional consultation activities carried out in this focal area. The activities will involve participatory planning to adapt the global strategic lines of the IPDP to the particular conditions of the area. The conclusion of these activities will be a condition for the application of investment resources in La Cojolita.

The overall Social Assessment and Indigenous Peoples Development Plan has been implemented in a progressive way. The corridor of Sian Ka'an-Calakmul in Quintana Roo has served as a model for the studies undertaken in the other corridors (see details in Annex 12). The studies analyzed opportunities to improve indigenous peoples' access to improved natural resource use technologies by: a) strengthening their social organization; b) training in legal aspects (e.g. land tenure); c) promoting a gender approach in the generation and distribution of income as well as in communal decision making and the distribution of labor; and d) increasing their technical capacity for self-managed development in different fields.

6. Environmental

This Category B project is designed to be entirely positive from an environmental standpoint, particularly by promoting the conservation and sustainable use of globally significant biodiversity on selected community, *ejido* and private lands.

A number of activities were undertaken during preparation to assess current trends and threats to biodoversity in the project area, and to define interventions to revert the accelerated loss of biodiversity. These activities included a study by the Department of Plant Sciences, University of Oxford, UK, which developed a set of criteria to be used for identifying activities in terrestrial corridors. For the Northern Yucatan corridor, an international consulting firm, Euroconsult, analyzed the specific problems related to the coast that play a significant role in this corridor. In addition to technical reports, direct consultation were undertaken with farmers, fishermen and other stakeholders, to develop a menu of projects of sustainable development (see Annex 2). This information was analyzed in conjunction with data generated through the social assessment.

In order to assess the potential environmental impacts of activities proposed for project financing on the basis of the above process of analysis and consultation, an environmental assessment was undertaken by a team of a Mexican and an international consultant. The consultants consolidated the results of studies and consultations undertaken during preparation, and conducted additional field work in Chiapas and Quintana Roo to discuss with local stakeholder their findings.

Project activities that may have significant environmental impacts are pilot sub-projects in the sustainable use and corridor integration components. As described in detail in Annex 2, these sub-projects are geared towards promoting community and indigenous development. In terms of their nature, they are of three main types: a) maintenance of ecosystem quality, b) restoration and c) sustainable use of biodiversity. Differential procedures for screening and assessing the impacts of

sub-projects are established in the PIP for sub-projects of types a) and b), on the one hand; and of type c), on the other hand.

Sub-projects promoting maintenance and/or restoration of ecosystem quality (types a and b) are expected to have very low environmental impacts. They would be screened and assessed by the Regional Technical Units (RTUs). Each RTU will have in their staff a specialist in sustainable use projects, with skills and qualifications (satisfactory to the Bank) in environmental impact assessment.

Environmental impacts of sub-projects of sustainable use (see Annex 2 for a detailed list of examples) will be subject to more in-depth scrutiny. They will receive a preliminary screening by the RTUs to verify eligibility and a first environmental assessment. In addition, the RTU (under the supervision of the National Technical Unit) will prepare a report on environmental impacts ("informe preventivo"), to be submitted to the National Ecology Institute (INE) for technical review. Written approval by INE of the ("informe preventivo") will be a condition for sub-project financing.

In order to monitor smooth operation of the proposed arrangements, a total of 8 of sub-projects will be subject to Bank's prior review. These will be the first 2 sub-projects approved by each RTU with a cost below $7,500, and the first 2 sub-projects approved by each RTU with a cost above $7,500. For subsequent sub-projects, the National Unit will inform the Bank on the pipeline of sub-projects under consideration (in the different types a, b and c) through bi-annual reports. The full list of sub-projects approved every year will be submitted to the National Corridor Council as an annex of the Annual work program.

All assessments undertaken by the RTUs will be conducted on the basis of a typology and checklist, contained in the operational manual, of possible environmental impacts. No sub-project will be financed, which proposes activities inconsistent with Bank policies. In particular, in compliance with OP 4.36, no funds will be provided to finance investments in timber harvesting operations or in timber processing equipment (except with respect to plantations in non-forested areas, in heavily degraded forested areas, or in areas already planted; or except with respect to controlled sustained-yield forest management; but in no case in areas of primary tropical moist forest).

f. Local groups and NGOs consulted: (List names):

Amigos de Sian Ka'an
CICY
CINVESTAV
Consejo Regional Agrosilvopecuario y de Servicios de Xpujil, S.C.
Consejo Regional Indígena y Popular de Xpujil, S.C.
Conservation International, Chiapas
Ecosur
El Eden
ICRAF
IDESMAC
Marea Azul
Mero Lec, A.C.
Noh Bek (forestry producers)
OEPFZM (forestry producers)
Programa Peninsular de Desarrollo Participativo
Pronatura Chiapas A.C.
Pronatura Península de Yucatán
Proselva

Rio Lagartos
Sociedad de Productores Ejidales Forestales de Quintana Roo
Sociedad de Pueblos Indígenas Forestales "Tumben Cuxtal", S.C.
TNC
Tropica Rural Latinoamericana
UACh
UADY
Unión de Productores de Chicle Natural-Plan Piloto Chiclero
Universidad de Quintana Roo
Universidad Juárez Autónoma de Tabasco
UNORCA Quintana Roo
Yax che
Yum Balam

g. Resettlement

[ ] Summarize issues below (e.g., resettlement planning, compensation)
[ ] To be defined (indicate how issues will be identified) [X] None

h. Borrower permission to release EA: [ ] Yes [ ] No [ ] N/A

i. Other remarks: None

7. Participatory Approach:

a. Primary beneficiaries and other affected groups:

During project preparation and in particular during the preparation of the SA and IPDP (see Annexes 11 and 12), several forms of consultations have been organized in communities and ejidos and with representatives of farmers' organizations, to inform about the objectives of the project and to establish a dialogue between stakeholders and the team that prepares the project. In this way the conditions have been created to ensure local ownership of the project.

In order to strengthen this approach, a communication strategy has been developed for project implementation (see Annex 15 for details). Radio programs and videos are being developed and translated to indigenous languages.

Informed participation is further ensured through the work of the local corridor councils, whose members actively inform their constituencies (farmers, NGOs, academy, local government).

b. Other key stakeholders:

The project has been designed with a very strong participatory framework, and several workshops have been held with local and national stakeholders. An internet page has been developed with information and key documents: http://freecenter.digiweb.com/pages/cbm/index.html.

The project's monitoring and evaluation protocol considers active participation of all stakeholders and their access to results.

8. Checklist of Bank Policies
The project addresses issues contained in the Bank policies checked below. All the provisions made therein are being complied with.

a. Do any of the following safeguard policies apply to the project?:

[x]	Indigenous peoples (OD 4.20)	[ ]	Riparian water rights (OP 7.50) (BP 7.50) (GP 7.50)
[x]	Cultural property (OPN 11.03)	[ ]	Financial management (OP 10.02) (BP 10.02)
[x]	Environmental impacts (OP 4.01) (BP 4.01) (GP 4.01)	[ ]	Financing of recurrent costs (OMS 1.21)
[x]	Natural habitats (OP 4.01) (BP 4.01) (GP 4.01)	[ ]	Local cost sharing (OP 6.30) (BP 6.30) (GP 6.30)
[x]	Gender issues (OP 4.20)	[ ]	Cost-sharing above country three-year average (GP 6.30) (OP 6.30) (BP 6.30)
[ ]	Involuntary resettlement (OD 4.30)	[ ]	Retroactive financing above normal limit (OP 12.10) (GP 12.10)
[x]	NGO involvement (GP 14.70)	[ ]	Disputed territory (OP 7.60) (BP 7.60) (GP 7.60)
[x]	Forestry (OP 4.36)	[ ]	Other (provide necessary details)

b. Describe issue(s) involved, not already discussed above: None

F. SUSTAINABILITY AND RISKS

1. Sustainability:

Stakeholders' interest and participation, demonstrated during the project's preparation phase, reflect the demand that exists for locally adapted programs for sustainable use of natural resources. This, together with institutional and political commitment, technical soundness and financial viability, is likely to ensure long-term sustainability of the project. The specific combinations of community participation, political will, civil society engagement, and financial arrangements required to promote sustainability of biodiversity conservation after the project is likely to vary across the various corridors. For this reason, it is proposed that each corridor strategy develops a specific approach and set of provisions to that end (satisfactory to the Bank) as a condition for transition to the second phase of project financial support.

2. Critical Risks (reflecting assumptions in the fourth column of Annex 1):

Identified risks fall in two main categories: a) technical (design of corridors and sub-projects to take place therein); and b) institutional (mobilization of political will and institutional cooperation in support of the corridor concept). Ratings show that risks are in general manageable. The most significant risks relate to possible institutional, policy and political obstacles to the project's objective of mainstreaming biodiversity in public programs and local development practices. Measures proposed to minimize these and the other risks identified are listed below.

Risk	Risk Rating	Risk Minimization Measure
Annex 1, cell "from Outputs to Objective"		
1. Technical data is not available and scientific consensus and local capacity is not present to	N	1. Seek opportunities for data exchange with other organizations

Risk	Risk Rating	Risk Minimization Measure
define limits and characteristics of corridors		
2. Policy decision making processes at various levels take into account outcome of corridor mapping	M	2. 1 Project's communication strategy at community and institutions level 2.2 Generate incentives for use of information in the corridor integration component
3. Communities do not accept corridor approach and are not willing to commit themselves to conservation and sustainable use priorities	M	3. 1 Project's communication strategy at community and institutions level 3.2 Generate incentives for use of information in the sustainable use component
4. Social unrest increases in project area	M	4. 1 Project's participatory and inclusive approach helps improve living conditions thereby reducing risk in focal areas 4.2 Risk rating applies only to a few focal areas
5. Local institutional and technical capacity is insufficient to operate the M&E system	N	5. 2 Seek opportunities for collaboration and exchanges with local organization with required capacity 5.2 Targeted use of project resources in design component
6. Lack of support of senior policy makers to mainstreaming efforts	M	6. 1 Project's communication strategy at community and institutions level 6.2 Generate incentives for use of information in the sustainable use component
7. National sectoral policies (e.g. pricing of agricultural inputs and outputs, land tenure) are in conflict with conservation and sustainable use of biodiversity	S	7. Policy dialogue of the Bank with the Federal government
8. "Bio-friendly" modifications cannot be implemented effectively in State and Federal programs	S	8. Identification of practical administrative options to modify programs
9. Cost of bio-friendly modifications exceeds benefits (in economic terms, taking into account externalities)	N	9. Concentration of efforts in areas where different benefits combined exceed cost (taking into account externalities)
10. Lack of technical consensus on criteria to re-orient government plans and programs in a biodiversity – friendly manner	M	10. Promote consensus through information exchange and sharing best practices
11. Lack of trainees' commitment to translate knowledge acquired into modified behavior	N	11. Project's communication strategy at community and institutions level
12. Time opportunity cost of training is too high for trainees	N	12. Make training demand driven, efficient and useful
13. Inappropriate socioeconomic conditions for the adoption of alternatives of sustainable use (land tenure, community organization, level of conflict and access to resources)	M	13. Careful selection of focal areas and target communities based on social assessment
14. Insufficient alternatives of sustainable use	N	14. Careful selection of options based on agroecological studies
15. Low demand from producers for sustainable use options	N	15. Awareness raising of market opportunities

Risk	Risk Rating	Risk Minimization Measure
16. Viable sustainable use alternatives are not compatible with corridor objectives	N	16. Improve selection and screening of alternative options
17. Findings of studies are not implemented in the field	M	17. Dissemination of best practices including farmer to farmer extension
18. Options proposed by studies are not financially viable	S	18. Improve market access through: eco-marketing, labeling and certification
19. Lack of consensus within steering committees at the central and state level	M	19. Facilitate consensus building
20. Workload of the Project Management Units (national and state level) is unmanageable	S	20. Outsource selected activities to qualified NGOs or academic institutions
Annex 1, cell "from Components to Outputs" 1. Required counterpart funding is not available	S/M	1. GEF disbursement made conditional on adequate counterpart funding
2. Proper project coordination mechanisms are not in place	S	2. Seek renewed commitment to institutional coordination as part of the Bank's policy dialogue with the new federal administration; if needed, identify options for adjustment of coordination arrangements during supervision
Overall Risk Rating	S	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

3. Possible Controversial Aspects (Project Alert System):

Risk	Type of Risk	Risk Rating	Risk Minimization Measure
A small NGO claiming to represent indigenous communities in Chiapas has expressed dissatisfaction with the consultation process followed in one of the Chiapas focal areas, and has indicated that it may consider filing a complaint before the Bank's Inspection Panel.	S	M	Bank and Mexican teams are engaged in dialogue with NGO and community representatives to address concerns and resolve controversial issues. Project design (including IPDP) allows for continued consultation and participatory planning in the detailed definition of activities to be financed under the corridor design and sustainable use components

Type of Risk – S (Social), E (Ecological), P (Pollution), G (Governance), M (Management capacity), O (Other)
Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

G. GRANT CONDITIONS

The main grant conditions are summarized in the table below.

Table 3 - Grant conditions

	Conditions of Negotiation	Conditions of Effectiveness
Technical Units	* TORs, list of qualifications and criterias for evaluation and selection for the following staff: - Project General Director - Regional Directors	National Technical Unit fully staffed and operational (in accordance with the provisions of the operational manual) no later than 30 calendar days after the effective date
National Corridor Council		All membership positions filled
Corridor State Councils (CSCs)		All membership positions in all 4 CSCs filled in
M&E Protocol	Advanced draft design	Completed (included in Operational Manual)
Procurement	* Satisfactory Procurement Plan (General Procurement Plan for the first phase and detailed Plan for first year)	
Financial Management, Audits	Project Management Information System design approved (including reports)	Financial management system satisfactory to the Bank Independent auditors appointed
Project Implementation Plan	Completed	Completed
Operational Manuals		Issued and put into effect
Legal Opinion		UMS furnished to the Bank a legal opinion satisfactory to the Bank, of SEMARNAP counsel acceptable to the Bank, showing that on behalf of UMS, Grant Agreement has been duly authorized or ratified by, and executed and delivered on behalf of, UMS and is legally binding upon UMS in accordance with its terms

H. READINESS FOR IMPLEMENTATION

1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation. ____
1. b) Not applicable. __X__

2. The procurement documents for the first year's activities are complete and ready for the start of project implementation. See Grant conditions
3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality. Yes
4. The following items are lacking and are discussed under grant conditions (Section G):
   - Final versions of the Procurement Plan
   - Final version of the Operational Manuals
   - Final version of the MIS
   - Final version of the M&E Protocol

I. COMPLIANCE WITH BANK POLICIES

1. This project complies with all applicable Bank policies. Yes
2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies. ____

Raffaello Cervigni	John Redwood	Olivier Lafourcade
Team Leader	**Sector Manager/Director**	**Country Manager/Director**

Annex 1: Project Design Summary - Mexico: Mesoamerican Biological Corridor

A. Logical framework

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
	a. Sector-related CAS Goal:		
Institutional development and decentralization of environmental management, better management of natural resources, assistance in the design of sector policies	Increased institutional capacity for environmental management, decentralized environmental management, effective management plans in corridor areas	Sector work in the natural resource sector (periodic)	(Goal to Bank Mission) Improved, decentralized management of natural resources helps alleviate poverty in a sustainable way
	b. GEF Operational Program:		
Protection of biodiversity through in-situ conservation and sustainable use in coastal, forest and mountain ecosystem (OP. 2, 3 and 4)	Maintenance of ecosystem diversity and biodiversity conservation	Ecological, biological, and geographic surveys	
	Project Global Objective:		
Conservation and sustainable use of globally significant biodiversity in six biological corridors in southeast Mexico through mainstreaming of biodiversity criteria in public expenditure, and in selected local planning and development practices.	1. After 7 years, in focal areas (15% of corridors total surface): a) rate of native habitat loss is decreased, and/or area under native vegetation cover is increased (with specific targets varying across individual focal areas); b) degree of perturbation of populations of corridor-specific indicators species (e.g. selected birds, mammals, insects, plants) is decreased	1. Land cover, land use surveys, ecological surveys, biological surveys (GIS)	(From Objective to CAS Goal) Commitment of the public sector and civil society to incorporate project lessons into broader (sector-wide or nation-wide) initiatives for natural resource management
	2. Communities (and/or producers groups) in focal areas are engaged in different forms (depending on levels of organization) of local planning oriented towards conservation and sustainable use: * Awareness raising (at least 80% of focal areas' surface and/or 80% of communities) * Problem assessment (at least 50%) * Priority setting (at least 30%) * Development of action plans (at least 10%)	2. Social surveys	

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
	3. In focal areas, no more than 30% to 50% (depending on each focal area) of production (in area, or producers) is associated with selected, high-impact resource use practices detrimental to biodiversity (e.g. uncontrolled agriculture fire use, inadequate waste disposal, overfishing, over-hunting) in native ecosystems	3. GIS and Agroecological field surveys	(From Objective to GEF Operational Program) 1. Landscape approach benefits biodiversity conservation. Corridors are effective mechanism for genetic dispersion and migratory species well being
	4. In focal areas, at least 30% to 50% (depending on individual focal areas) of production (in percentage of area, or of producers, or value) is generated by financially sustainable, biodiversity-friendly, selected practices of use of natural resources (forest products, honey, maize, vegetables, ecotourism activities, etc.) in the productive landscape	4. Social surveys	2. Occurrence of Natural Disaster does not exceed historical trends and does not generate unanticipated social response
	5. In the various corridors, at least 40% of (existing and new) public programs and at least 20% of public spending with impacts on natural resource base take into account biodiversity considerations, including: a) programs re-oriented from potentially harmful to biodiversity friendly or neutral activities b) programs actively promoting activities of sustainable use of biodiversity	5. Budgets of government programs	

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
	Outputs		
A. PARTICIPATORY DESIGN AND MONITORING			
1. Detailed Information is available on delimitation of corridors, focal areas and transitions zones	1. Maps on vegetation land use and geomorphology: 1.1. At the corridor level (5 maps per theme at scale 1:250,000) 1.2. Focal area level (9 maps per theme for the first phase; 7 for the second phase at scale 1:100,000)	Technical reports (CD-Rom and Web formats) Maps produced	(Outputs to Objective) 1. Technical data is available and scientific consensus and local capacity is present to define limits and characteristics of corridors. 2. Policy decision making processes at various levels take into account outcome of corridor mapping
2. Communities in focal areas get involved in local planning for corridors in different ways (awareness raising, problem assessment, priority setting, strategies)	2.1 Raised awareness in 120 communities 2.2 Problem assessment in 72 communities 2.3 Priority setting in 36 communities 2.4 12 Community level maps and strategies (1:10,000, designed in a participatory manner)	Workshop reports Reports of meetings Reports of technical studies Maps produced	3. Communities accept corridor approach and are willing to commit themselves to conservation and sustainable use priorities 4. Social unrest does not increase in project area
3. A Monitoring and Evaluation system (comprising biological, ecological, socio-economic and institutional indicators) is established and functions regularly	3. GIS and Database System: 3.1 General Protocol of the M&E System 3.2 Data collected initially (baseline) and periodically to feed M&E System: 3.2.1 Ecological information (baseline, mid-term, end of project) 3.2.2 Biological information (baseline, mid-term, end of project) 3.2.3 Socio-economic information (baseline, and then every other year) 3.2.4 Institutional data (baseline, and then every year)	Technical Report Annual M&E Reports Maps produced	5. Local institutional and technical capacity exist to operate the M&E system

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
	Outputs (continues)		
B. CORRIDOR INTEGRATION			
1. Based on the analysis of biodiversity impacts of existing programs (federal, state and municipal), 5 corridor strategies are defined with stakeholder consensus (first phase; reviewed in second phase) with respect to coordination and integration of biodiversity concerns in programs (including production and restoration)	1.1. 35 Studies on biodiversity impacts of public programs 1.2 14 Studies to promote integration of biodiversity into state/municipal development plans 1.3. Five corridor strategies developed with stakeholder consensus (first phase; reviewed in second phase)	Technical reports Minutes of Corridor Councils meetings Reports of workshops	1. Continuing support of senior policy makers to mainstreaming efforts
2. Biodiversity considerations are integrated in the design, execution and monitoring of selected public programs and policy instruments	2.1 At least two state development plans include biodiversity priorities. 2.2 At least 15 municipal development plans address biodiversity priorities 2.3 At least 5 sectoral programs include negative filters (activities with negative impacts on corridor are ineligible for funding). 2.4 At least 10 sectoral programs contain positive incentives (priority for activities with both development and biodiversity benefits) 2.5. Biodiversity concerns consistently integrated in M & E procedures of at least 10 public programs (through an "observer" type approach)	State and Municipal development Plans Operational Manuals of development programs Pre-feasibility studies, technical reports	2. National sector policies (e.g. pricing of agriculatural inputs and outputs, land tenure) are not in conflict with conservation and sustainable use of biodiversity. 3. "Bio-friendly" modifications can be retrofit to state and federal programs 4. Cost of bio-friendly modifications does not exceed benefits (in economic terms, taking into account externalities) 5. Technical consensus exists on criteria to re-orient government plans and programs in a biodiversity – friendly manner
3. Capacity of government officials at federal, state and municipality level is strengthened to design and implement selected development plans and programs in ways that integrate biodiversity considerations (through training and study tours)	3.1. 60 officials trained at federal level 3.2. 60 officials trained at state level 3.3. 140 officials trained at municipal level	Training reports	6. Trainees are committed to translate knowledge acquired into modified behavior

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
	Outputs (continues)		
C. SUSTAINABLE USE			
1. Strengthened capacity building for diversified production, and improved managerial and organizational skills	1.1. 64 Training workshops 1.2 112 Learning courses 1.3 64 Dissemination activities (including farmer to farmer extension)	Course reports Minutes of workshops Other field reports	1. Time opportunity cost of training is not too high for trainees
2. Sustainable use of biodiversity promoted through pilot projects for maintenance of native ecosystems' functions, restoration of degraded ecosystems, sustainable use in the productive landscape	2.1 305 Small pilots to promote awareness in communities with limited levels of organization 2.2 130 Pilots reserved for vulnerable groups initiatives (indigenous, women) 2.3 130 Pilots for communities with higher levels of organization (financed with matching funds from government programs)	Field supervision reports Social surveys	2. Appropriate socioeconomic conditions exist for the adoption of alternatives of sustainable use (land tenure, community organization, low level of conflict, access and demand for appropriate alternatives) 3. Adequate alternatives and demand for sustainable use exist 4. Viable sustainable use alternatives are compatible with corridor objectives
3. Knowledge of conditions required for local adoption of sustainable use options improved (including market access and certification, pre-feasibility, local adaptation of alternative technology)	3.1 32 Focused studies	Reports Field surveys	5. Findings of studies will be implemented in the field 6. Options proposed by studies are financially viable
4. Effective communication outreach	4.1 Clear understanding of project objectives and components by primary audiences at regional and local levels averaging 40% for rural stakeholders, and 60% for institutional stakeholders 4.2 Timely production and distribution of outreach materials based on communication strategy and social and cultural backgrounds	Interviews with audiences and opinion polls Review of material effectiveness	7. Institutional capacity in communication for development exists in the region

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
D. PROJECT MANAGEMENT			
1. Effective performance of the National Corridor Council	1. NCC meets twice a year to review operational plans and execution, to discuss lines of actions and strategies.	Reports of meetings	1. Consensus within Corridor Councils at the National and State level exists
2. Effective management and coordination of project at the National level	Based on project cycle and schedule established in the Operational Manual: 2.1. Timely preparation and distribution of information to the National Corridor Council 2.2. Timely preparation of the Annual Operational Plan 2.3. Timely disbursement of project funds in compliance with applicable procurement and audit procedures	Independent reviews Bank supervision Procurement and audit reports	2. Workload of the Project Technical Units (National and Regional level) is manageable
3. Effective performance of the State Corridor Councils	3. SCC meets four times a year to review operational plan preparation and execution and discuss lines of actions and strategies.	Reports of meetings	
4. Effective management and coordination of project at the Regional level	Based on project cycle and schedule established in the Operational Manual: 4.1Timely preparation and distribution of information to the State Corridor Councils 4.2. Timely preparation of the State Corridor Annual Operational Plan 4.3. Timely disbursement of project funds in compliance with applicable procurement and audit procedures	Reviews by the National Technical Unit Reviews by the National Technical Unit Procurement and audit reports	

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
	Project Components/Sub-components:		
	Inputs		
A. Participatory Corridor Design	US $ 4.26 M	Supervision reports Disbursement reports	(Components to Outputs) 1. Required counterpart funding is available
1.1. Mapping at focal area and corridor level 1.2. Awareness raising workshops 1.3. Diagnostic workshops 1.4. Priority setting workshops 1.5. Strategy workshops 1.6. GIS establishment 1.7. GIS operation 1.8. Generation of ecological data (M&E System) (corridor area) 1.9. Generation of ecological data (focal area level) (M&E System) 1.10. Generation of biological information vegetation (M&E System) 1.11. Generation of biological information fauna (M&E System) 1.12 Generation of institutional information (M&E System)			
1.13. Generation of social information (M&E System)			
B. Corridor Integration into development programs:	US $ 3.98 M	Supervision reports Disbursement reports State and Federal budgets	2.1 Required counterpart funding is available 2.2 Horizontal and vertical coordination mechanisms among government agencies are in place and working
2.1. Studies to determine impact of programs and provide technical inputs for corridor strategies 2.2. Workshops to define and update corridor strategies 2.3. Studies on state and municipality development plans 2.4. Training to increase capacity at state and municipal level 2.5. Workshops to integrate biodiversity concerns in state and municipal plans 2.6. Studies to improve design of government programs (including field tests) 2.7. Training to improve execution of			

Narrative Summary	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
government programs 2.8. Support for the incremental M & E cost of re-oriented programs			
C. Sustainable and equitable use of biological resources	US $4.01 M	Supervision reports Disbursement reports State and Federal budgets	3.1 Required counterpart funding is available 3.2 Institutional capacity in communication for development
3.1. Small Pilots to promote planning 3.2. Pilots (vulnerable groups: indigenous, women groups) 3.3. Pilots (Other groups) 3.4. Capacity building for diversified production, managerial and organizational skills 3.5. Capacity building for diversified production, managerial and organizational skills (Training courses/ workshops) 3.6. Capacity building for diversified production, managerial and organizational skills (Study tours/ farmer to farmer extension, including Technical Assistance) 3.7. Studies (market access and certification, pre-feasibility, local adaptation) 3.8. Development of communication strategy at regional and state levels 3.9. Design, production and distribution of printed and audiovisual communication materials (audiences according to communication strategy, in 5 languages) 3.10. Establishment of a communication network in the region 3.11. Establishment of a monitoring system for evaluation of communication impact			
D. Coordination and Implementation	US $ 2.59 M	Supervision reports Disbursement reports State and Federal budgets	
4.1. Establishment and operation of a National Corridor Council 4.2. Establishment and operation of a National Technical Unit 4.3.Establishment and operation of Corridor State Councils 4.4.Establishment and operation of Regional Technical Units			

B. Principles and indicators for phasing and mid-term review

The project involves both activities tied to specific geographic locations (especially community planning and sub-projects of sustainable use of biodiversity), and activities of a more "diffuse" nature. Correspondingly, there will be different mechanisms for sequencing those different activities over the project's duration time. The first type of activities will be financed in 9 focal areas in a first, four-year, phase. The second-phase set of 7 focal areas will only be eligible for sub-project support, if/when trigger indicators for the expansion to the second phase focal areas have been met.

For project activities not tied to specific geographic locations, there will be, instead of formal phasing -- a "standard" project mid-term review to allow for possible execution adjustments. An independent evaluation would be undertaken by international experts after four years of project execution to formulate recommendations to the Bank's management for transition to the second phase.

Table 4 below specifies triggers indicators to evaluate project's performance in phase 1 focal areas; and indicators to assess, at mid-term review time, implementation progress in "generic" activities.

Table 4 - Triggers for transition to phase 2

Component and Principles	**Indicators of progress for focal area-specific activities** (Attainment of indicators in phase 1 focal areas triggers transition to phase 2 focal areas)	**Indicators of progress for generic activities** (To be evaluated at mid-term review)
Design Detailed definition of territorial priorities in corridors is completed, and an effective monitoring and evaluation system is operating and supports the evaluation of project performance	* Final definition of communities to be included in focal areas has been completed * In communities of phase 1 focal areas, depending on the level of community organization: - Environmental awareness has been raised - Natural resource assessment have been completed Natural Resources priorities have been agreed upon Natural Resource strategies have been agreed upon * The M&E protocol is functioning satisfactorily (focal area and community levels): - Baseline data has been collected and systematized on natural resource use - Capacity for monitoring has been generated Information on selected indicators has been collected annually or biannually and is evaluated against baselines	

Component and Principles	**Indicators of progress for focal area-specific activities** (Attainment of indicators in phase 1 focal areas triggers transition to phase 2 focal areas)	**Indicators of progress for generic activities** (To be evaluated at mid-term review)
Mainstreaming Promoting the integration of biodiversity concerns into regular development programs		* Corridor strategies have been consolidated and agreed upon for all corridors * Strategies contain provisions for ensuring longer term sustainability of biodiversity conservation and sustainable use (e.g., after project's completion) * Priority programs for re-orientation/re-designed have been determined * Technical studies required for the re-design of development programs have been completed * Capacity building and training of selected government staff has been completed
Sustainable use Promoting options of sustainable use of biodiversity with wide replication potential	* Capacity building and studies in phase 1 focal areas have been completed * Phase 1 sustainable use pilot projects have been completed or are close to completion * Evaluation of selected activities under the sustainable use component has taken place	
Project Management Effective project management and coordination at the National and Regional level is in place		* The project's National Council meets twice a year and approves the annual work program for the project * The National Technical Unit takes into account the opinions of the National Council * State Corridor Councils have been established in each state and discuss strategic lines of the project * Regional Technical Units take into account opinions of the State Corridor Councils

Annex 2: Detailed Description of Project's Components

A. Design and Monitoring of Biological Corridors (US$ 5.91 m, GEF $4.26 m)

A set of five biological corridors will be established in 4 southern states of Mexico to function as reservoirs of agrobiodiversity and biological connectors between established Natural Protected Areas (NPAs), which are currently being strengthened under Mexico's Program on Natural Protected Areas 1995-2000.

These biological corridors have been proposed as a strategy to avoid the isolation and fragmentation of ecosystems in protected areas by allowing genetic and species exchange. An initial set of biological corridors were identified and recommended at the initiation workshop on the Mexican Mesoamerican Biological Corridor held among public, private and international conservation and development organizations in Cancun, Quintana Roo, in October 1998. In a first selection, 31 important connectors were identified.

This number was narrowed down using principles of biodiversity significance (and therefore likelihood of generating global environmental benefits), social viability, technical feasibility, and political and institutional support.

Through this process of methodological refinement, a final set of 5 corridors has been selected, i.e. wide geographical areas in which the application of biodiversity-friendly measures is of crucial interest for maintaining connections between areas with pristine biodiversity. Within these macro-areas of interest, a choice has been made to concentrate efforts in specific *focal areas* (see Box 1 on Page 7 for clarifications on terminology used). Focal areas have been selected on the basis of opportunities and immediate needs for within- and outside-corridor conservation, considering also aspects of social organization and available information (see Annex 13). The precise actions to take place within each of these focal areas will be defined through a consensus approach with local stakeholders. Broad priority sets of threats to, and opportunities for, biodiversity conservation in focal areas have already been developed (see Annex 13).

The design at the level of focal areas explicitly involves the assessment of agrobiodiversity and the precise relations established by the rural habitants with their natural environment. Special attention is paid to the management as well as to the precise motivation of the management of village territories. These territories are considered a critical level of aggregation in the present project and planning of resource use on the community level will be strongly promoted.

Specific activities to be financed under this component include:

1) Design and implementation of biological connectors, based on an analysis of existing information (and where necessary, on information obtained from ad-hoc surveys) with particular attention to the current land use patterns, user rights and the role of agrobiodiversity.
2) Involvement of stakeholders in local planning and biological surveys for management of biodiversity in focal areas. Engagement of stakeholders will take into account the different levels of community organization based on the results of the social assessment (see Annex 11). Moving from communities with lower (communities type 1a), to higher levels of organization (type 2b), the following activities would be undertaken:
    (a) Raise awareness among stakeholders on the economic and environmental benefits of the corridors (communities type 1a);

(b) Promote assessment of natural resource management problems and issues; (communities type 1b);

(c) Assist in the definition of priorities for natural resource and biodiversity management (communities type 2a);

(d) Develop community natural resource management strategies and village level maps (communities type 2b).

Completion of community strategies (item (d) above) would be a condition to access to the larger pilot projects under the sustainable use component (see component description below).

Implement a protocol for the monitoring and evaluation of the biological corridors in terms of sustainable use and conservation of biodiversity, institutional performance, socio-economic and productive change. Monitoring and evaluation will be implemented at different scales with the aid of a geographic information system (GIS) and build on recent scientific work developed by CIFOR (and adapted as appropriate to Mexican conditions). CIFOR proposes to assess the effects of management on biodiversity by examining processes that maintain biodiversity. Processes are assessed by means of verifiers, that are adapted to regional conditions. The monitoring system will complement ongoing inventory efforts (e.g., CONABIO, and local research institutions). Information will be shared at all levels, to assist the planning of conservation and production activities; and it will be incorporated to CONABIO's national biodiversity information system. Particular efforts will be made to strengthen community based monitoring, for better natural resources management. The overall multi-scale monitoring system will guarantee dissemination of lessons learned for future use in the design of other biodiversity projects in Mexico, in other countries involved in the Mesoamerican Biological Corridor and elsewhere.

B. Corridor Integration into Development Programs (US$ 71.72 m, GEF US$3.98 million)

This component will promote removal of institutional, technical and informational barriers that prevent adoption of win-win natural resources and biodiversity management options. In particular, it will promote the adoption of land-use and resource management practices that help achieve biodiversity conservation objectives by maintaining habitat integrity and forest cover, while at the same time enhancing local environmental values and economic opportunities through maintenance of the productivity of the natural resource base (e.g., better soil conservation practices).

About 50 programs for social, agricultural and infrastructure development are currently applied with federal funding (some with state/municipal counterpart) in the project area. Analysis undertaken during preparation shows that at least half of them have direct relationships with the conservation and sustainable use of natural resources and biodiversity. The 8 ministries coordinated under the intersectoral coordination instrument "Bases de Colaboración Interinstitucional" have expressed their support to recognize a status to the biological connectors equal to the one granted to 'priority regions' through a high level agreement and detailed agreements with each one of the participating State Governments through which state and federal authorities identify current program budgets and commit resources to the corridor. Within each one of the states, the State Corridor Councils, where representatives from civil society join government officials in coordination of the implementation of the project, a consensus worked out at the local level would have the guarantee of the support of the different agencies to implement different options for "mainstreaming" (concentration of investments, planning based on corridor strategies, and adequate operational rules for existing programs in the area).

These detailed agreements with each one of the participating States would incorporate the corridor strategy in the process of determining each corridor's annual spending plan. Corridor strategies would be the key tool for modifying the supply of development assistance, thus mirroring the community and organization level strategies financed under the design component above, which would promote the integration of biodiversity into the demand for development interventions. The two pillars for implementing such a strategy are: i) integrating the corridor concept and approach in the federal, state, and municipal governments' regular development programs; and ii) demonstrating the social, technical and economic viability of options for sustainable use of biodiversity in the connectors. The first line of action is described in the remainder of this section; the second one, in section C below.

The basic idea behind the notion of corridor integration is to re-orient existing programs (as well as orienting new ones) in relevant areas (e.g. agriculture, forestry, road building, tourism, social development) in directions compatible with conservation and sustainable use of biodiversity. Re-orientation of government activities would be pursued throughout the cycle of programs and projects with demonstrated (or demonstrable) relevance for the conservation and sustainable use of biological resources. The table below offers a breakdown of expected outputs and activities at the various stages of the cycle.

Table 5 - Breakdown of expected outputs and activities

	Expected Outputs	Activities to achieve outputs
Planning Based on the analysis of biodiversity impacts of existing programs (federal, state and municipal), corridor strategies are defined with respect to coordination and integration of biodiversity concerns in programs (including production and restoration)	Federal, state, municipal and village development plans: Take into account the connectors in the determination of programs' geographic and thematic priorities Include targets for sustainable use of biodiversity in connectors	Technical and institutional strengthening of state, municipal and village decision making (e.g. COPLADE, COPLADEMUN, etc.) Training and capacity building for senior federal, state and municipal and village government officials Awareness raising of win-win opportunities through technical studies, cost-benefit analysis
Identification & Design Biodiversity considerations are integrated in the design, execution and monitoring of selected public programs and policy instruments	Programs contain provisions encouraging corridor-compatible initiatives: Filters: activities with negative impacts on corridor are ineligible for funding Priority given to funding of win-win activities	Development of technical guidelines for determining impacts of development activities (forestry, agriculture, tourism) on biodiversity in connectors Inclusion of those guidelines in the programs' operational manuals Training and capacity building of technical staff

	Expected Outputs	Activities to achieve outputs
Execution High level agreement and detailed agreements with each one of the participating States.	Status of priority region granted to biological corridors.	Presentation of project design, objectives and strategies to sectoral agencies and Finance, within CONABIO's steering committee, with the support of State Corridor Councils and stakeholders that participated in project design/preparation.
Capacity of government officials at federal, state and municipality level is strengthened, to design and implement selected development plans and programs in ways that integrate biodiversity considerations (through training and study tours)	Programs' operational manuals ensure that execution avoids or minimizes impacts on biodiversity in connectors	Training and capacity building of technical and field staff
Monitoring The impact of programs on biodiversity and sustainable use is systematically monitored as apart of program cycles	Government M & E systems allow for measurement of impact on biological connectors Results fed back into planning and project/program design Lessons learned are made available to decision makers and practitioners to help design future programs of biodiversity management in Mexico and elsewhere	Modification or strengthening of M & E systems, possibly based on the experience developed under the project's own M & E system Training and capacity building of technical staff Preparation of periodic summaries of lessons learned

A key criterion for determining the actual scope for GEF-funded mainstreaming will be long-term institutional and social sustainability, that is, sustainability beyond the projects' intervention.

C. Sustainable Use of Biological Resources (US$9.31 million, GEF US$ 4.01)

Under this component an integral strategy will be developed for sustainable use of biodiversity, in focal areas within the 5 selected corridors. This strategy will include activities aiming at:

1) Maintaining native ecosystems (forests, coastal ecosystems, marshes, etc.), such as wildlife viewing, studies of population dynamics for target wild species (native only), rule establishment for ecotourism, forest enrichment with desirable species;
2) Restoring degraded ecosystems, such as restoration of water flow to original ecosystems (wetlands, "cienagas"), planting of native trees in "petenes," reforestation with native species and in way that is

compatible with biodiversity conservation objectives (corridors, etc.), pilot for rebuilding, replanting dunes with native species, etc.;

3) Developing Sustainable Use of Biological Resources in productive landscapes, such as capacity building for alternative use of wood products (non timbered species), establishment of rules for extraction of ornamental plants, sustainable use of plant biodiversity in homegardens ("traspatios, solares"), test of native species as covercrops, pilot projects of improved use of native local agriculture varieties (including annual, perennial and aquaculture), studies on market access for organic products and/or "sustainably managed" biological resources, certification etc.

A more detailed list of activities is presented in Table 7.

Specific objectives of the component of sustainable development are to:

1) Support capacity building and training programs that will raise awareness and promote site-specific sustainable use of biological resources among farmers' communities and other stakeholders such as local authorities, social organizations, local NGOs, research institutions and extension organizations.

2) Develop and implement pilot projects, prioritized on the basis of the willingness and proven commitment of local communities and/or groups of farmers and producers, the availability of relevant local experiences (improving productivity, diversification of production, mitigating negative environmental impacts, agroforestry, apiculture and sustainable tourism) and an evaluation of their economic potential.

3) Undertake specific studies which will increase the performance and efficiency of the pilot projects, and will complement studies developed within the components Design and Mainstreaming to identify the main constraints, opportunities and strategies to implement community-based and/or farmer groups sub-projects of Sustainable Use of Biological Resources in productive landscapes, adapted to the specific biophysical, social and cultural conditions.

Sub-projects will be customized to the demand and organizational capacity of the communities, ejidos, and farmer groups, in consistency with the results of the social assessment (Annex 11), and integrated within a framework of sustainable development at the local level. The menu of sub-projects will be enriched periodically with new, forthcoming alternatives and demand.

The sub-projects would include the following:

(i) studies and surveys related to local a) identification of root causes of biodiversity degradation; and b) evaluation of appropriate options for improvement of biological resources management, including constraints and opportunities for biodiversity-friendly market development;
(ii) training and learning-sharing activities including workshops on field visits, short study tours, producers networking, specific training on development of organizational capacity and managerial skills, particularly for vulnerable groups, such as women and indigenous groups;
(iii) specific inputs related to the efficient implementation of agroecological farming, agroforestry and/or aquaculture practices (pilot projects), such as specific inputs for alternative fishing production, such as net mesh bags, clam seeds, and small equipment useful for the implementation at farm and community levels of Integrated Pest Management or Integrated Plant Nutrient Management, such as biopesticides, light traps, vermicompost, seeds of covercrops, etc;
(iv) technical assistance to a) contribute to the development of studies and training activities; b) support the preparation and the implementation of pilot projects of Sustainable Use of Biological Resources; and c)

provide specialized technical and organizational back-up to rural communities, farmers groups and public and private front-line agents to ensure that sub-projects will be coherent with local demands and development objectives of the GEF Project.

In the development of rural community frameworks for sustainable development, due attention will be paid to the opportunities enclosed in farmers' knowledge, land-use patterns based on such knowledge, and the gene pool available for diversified production. Mechanisms will be developed to strengthen rural communities and their organizations to deal with conflict resolution and to improve the local capacity to manage natural resources. The absence of continuity in technical assistance and training has been identified as a mayor constraint for sustained development, calling for the upgrading and use of local capacities and know-how in horizontal schemes of training, aided by outside experts.

Financial resources will be allocated on demand. Small grants for sustainable use of biodiversity will be given on a competitive basis to rural communities, ejidos and/or producers groups, consortia of grass roots organizations, second tier organizations and NGOs.

The project will provide financial resources under the following framework:

1) Capacity building and training activities and studies related to Sustainable Use of Biological Resources will be fully funded by the Project, for a total amount of about US$ 0.97 million supported by GEF;
2) Eligible pilot projects would be demand-driven, and would be financed by GEF resources either at 80% or at 33%, depending on a) level of community organization; and b) the presence of vulnerable groups. In particular:

    (a) Small pilot projects (averaging $1,500 per project) to provide incentives for planning in communities poorly organized (type 1, see Annex 12 for details); for vulnerable groups (indigenous, women) pilot projects will average $4,000. These small projects would be supported at 80% of the total cost. It is estimated that at the end of the project there would be about 435 small projects for a total amount of about US$ 1.2 million (US$ 0.9 million from GEF);

    (b) Pilot projects in rural communities better organized (type 2) will be supported on a matching grant basis (every $1 from the GEF would be matched by $2 from the Government, so that the GEF share would be 33%). At the end of the project, it is estimated that about 130 sub-projects will be supported for a total cost of about US$ 2.88 million, including US$ 0.85 million from GEF. Vulnerable groups will also have access to these funds, besides those specifically oriented to them (above, a) and Annex 12).

Table 6 summarizes funding arrangements for the component of sustainable use.

Table 6 - GEF funding of studies, capacity building and sub-projects, component Sustainable Use of Biological Resources

	Community types eligible	Financing
Expenditure types:		
Studies (consulting services, travel expenses)	All types	GEF 100%
Capacity building/ Organizational strengthening (Workshop, training, field visits and study tours)	All types	GEF 100%
Pilots (vulnerable groups: indigenous, women groups)	All types	GEF 80%, Beneficiaries 20%
Pilots to promote planning	Types 1a and 1b	GEF 80%, Beneficiaries 20%
Pilots (Other groups)	Type 2a and 2b (after completion of community strategy)	- GEF matches government on a 1 to 2 (33%) - Beneficiaries contribute whatever required by government program

The project will not fund recurrent costs of win-win activities that will follow on the initial demonstration and/or barrier-removal effort. Eligibility criteria will ensure full compliance with the Bank's safeguard and other relevant policies (indigenous people, environmental impacts, etc.).

During project preparation, after the selection of the corridors and focal areas, a first analysis has been made of opportunities and threats for the sustainable use of biodiversity. Sub-projects will be applied in 9 focal areas in the project's first phase (2000 – 2004) and in another 7 focal areas in the second phase (2004 – 2007). At the end of the first phase the project will assess the opportunity and practical feasibility to use project funds to develop revolving funds in the best-organized rural communities.

Table 7 - List of eligible sustainable use activities

Category	Theme	Activity
Maintenance of ecosystems	Ecotourism	Define possibilities
Maintenance of ecosystems	Ecotourism	Define tracts
Maintenance of ecosystems	Ecotourism	Establish rules
Maintenance of ecosystems	Ecotourism	Infrastructure establishment
Maintenance of ecosystems	Ecotourism	Quality control
Maintenance of ecosystems	Forestry	Ameliorate felling techniques
Maintenance of ecosystems	Forestry	Control of pests and diseases
Maintenance of ecosystems	Forestry	Definition of extractable volumes
Maintenance of ecosystems	Forestry	Development of sustainable management plan
Maintenance of ecosystems	Forestry	Forest enrichment with desirable species
Maintenance of ecosystems	Forestry	Inventories
Maintenance of ecosystems	Forestry	Inventory of pests and diseases
Maintenance of ecosystems	Forestry	Plant production
Maintenance of ecosystems	Forestry	Selection of seed trees

Category	Theme	Activity
Maintenance of ecosystems	Forestry	Small infrastructure for observation and control
Maintenance of ecosystems	Hunting	Rustic Infrastructure (e.g. blind)
Maintenance of ecosystems	Hunting	Studies (Inventories/ Population dynamics/ Quotas)
Maintenance of ecosystems	Hunting	Wildlife management
Maintenance of ecosystems	Medicinal plants	Define quantities for extraction
Maintenance of ecosystems	Medicinal plants	Define species
Maintenance of ecosystems	Medicinal plants	Establish rules for extraction
Maintenance of ecosystems	Medicinal plants	Inventories
Maintenance of ecosystems	Medicinal plants	Market access, certification
Maintenance of ecosystems	Medicinal plants	Processing
Maintenance of ecosystems	Wildlife Ranching	Breeding facilities
Maintenance of ecosystems	Wildlife Ranching	Certification and marketing
Maintenance of ecosystems	Wildlife Ranching	Studies of population dynamics for target species (native only)
Maintenance of ecosystems	Wildlife Viewing	Rustic Infrastructure
Maintenance of ecosystems	Wildlife Viewing	Zoning, trail design, regulation of access
Restoration of ecosystems	Beach/Dunes	Pilot for rebuilding, replanting dunes with native species
Restoration of ecosystems	Degraded/eroded landscapes, invasion by exotic weeds,	Pilot projects of cover crops or live barriers using native species
Restoration of ecosystems	Degraded/eroded landscapes, invasion by exotic weeds,	Planing to define areas
Restoration of ecosystems	Improvement infrastructure	Biodiversity friendly planning of extraction tracks (overlay)
Restoration of ecosystems	Reforestation (Only with native species and in way that is compatible with biodiversity conservation objectives (corridors, etc)	Define areas
Restoration of ecosystems	Reforestation (Only with native species and in way that is compatible with biodiversity conservation objectives (corridors, etc)	Define species
Restoration of ecosystems	Reforestation (Only with native species and in way that is compatible with biodiversity conservation objectives (corridors, etc)	Follow-up
Restoration of ecosystems	Reforestation (Only with native species and in way that is compatible with biodiversity conservation objectives (corridors, etc)	Nursery maintenance
Restoration of ecosystems	Reforestation (Only with native species and in way that is compatible with biodiversity conservation objectives (corridors, etc)	Planting
Restoration of ecosystems	Restore water flow to original ecosystems (wetlands, etc).	Culverts
Restoration of ecosystems	Restore water flow to original ecosystems (wetlands, etc).	Studies (Define areas)
Restoration of ecosystems	Restore water flow to original ecosystems (wetlands, "cienagas" etc).	Cleaning
Restoration of ecosystems	Wetlands	Planting of native trees in "petenes"
Sustainable use of biodiversity in productive landscape	Aquaculture	Certification and marketing
Sustainable use of biodiversity in productive	Aquaculture	Development of managerial skills

Category	Theme	Activity
landscape		
Sustainable use of biodiversity in productive landscape	Aquaculture	Hatcheries
Sustainable use of biodiversity in productive landscape	Aquaculture	Management of fishing, recycling of fish wastes, etc.
Sustainable use of biodiversity in productive landscape	Aquaculture	Pilot of small "model farm", including waste recycling, and alternatives uses (clams, brine shrimp, etc.)
Sustainable use of biodiversity in productive landscape	Aquaculture	Studies of population dynamics for target species (native only)
Sustainable use of biodiversity in productive landscape	Beekeeping	Certification and marketing
Sustainable use of biodiversity in productive landscape	Beekeeping	Production planning (both traditional and non traditional)
Sustainable use of biodiversity in productive landscape	Beekeeping	Support to biodiversity -friendly (Melipona) beekeeping (initial investment and training)
Sustainable use of biodiversity in productive landscape	Beekeeping	Support to commercial beekeeping (initial investment and training)
Sustainable use of biodiversity in productive landscape	Chicle	Ameliorate collection methods (training)
Sustainable use of biodiversity in productive landscape	Chicle	Certification and marketing (Including feasibility studies)
Sustainable use of biodiversity in productive landscape	Chicle	Efficient use of local cultivars
Sustainable use of biodiversity in productive landscape	Chicle	Planting
Sustainable use of biodiversity in productive landscape	Fauna based artesanal production	Certification and marketing (Including feasibility studies)
Sustainable use of biodiversity in productive landscape	Fauna based artesanal production	Quality control
Sustainable use of biodiversity in productive landscape	Fibers	Define quantities for extraction
Sustainable use of biodiversity in productive landscape	Fibers	Define species
Sustainable use of biodiversity in productive landscape	Fibers	Establish rules for extraction
Sustainable use of biodiversity in productive landscape	Fibers	Inventories
Sustainable use of biodiversity in productive landscape	Integrated Nutrient Management	Use of native herbs or trees as green manure, composting
Sustainable use of biodiversity in productive landscape	Integrated Pest Management	Development of plant-based biocides/ biological pest control
Sustainable use of biodiversity in productive landscape	Integration crop and animal husbandry	Pilot mixed farming, based upon best use of existing biodiversity, recycling of nutrients, IPM
Sustainable use of biodiversity in productive landscape	Maintenance of local agrobiodiversity	Diversify through integration of trees in pastures
Sustainable use of biodiversity in productive landscape	Maintenance of local agrobiodiversity	Enrichment of soil seedbank
Sustainable use of biodiversity in productive landscape	Maintenance of local agrobiodiversity	Improve use of plant biodiversity in homegardens ("traspatios, solares")
Sustainable use of biodiversity in productive landscape	Maintenance of local agrobiodiversity	Maintain fringes of trees around fields (sources of seed)
Sustainable use of biodiversity in productive landscape	Maintenance of local agrobiodiversity	Pilot projects of improved use of native local agriculture varieties (including annual, perennial and aquaculture)
Sustainable use of biodiversity in productive	Maintenance of local	Test of native species as covercrops

Category	Theme	Activity
landscape	agrobiodiversity	
Sustainable use of biodiversity in productive landscape	New/non marketed timber species	Capacity building for alternative use of wood products processing
Sustainable use of biodiversity in productive landscape	New/non marketed timber species	Define species
Sustainable use of biodiversity in productive landscape	New/non marketed timber species	Market access
Sustainable use of biodiversity in productive landscape	New/non marketed timber species	Processing
Sustainable use of biodiversity in productive landscape	Ornamental plants	Define quantities for extraction
Sustainable use of biodiversity in productive landscape	Ornamental plants	Define species
Sustainable use of biodiversity in productive landscape	Ornamental plants	Establish rules for extraction
Sustainable use of biodiversity in productive landscape	Ornamental plants	Inventories
Sustainable use of biodiversity in productive landscape	Ornamental plants	Market access, certification
Sustainable use of biodiversity in productive landscape	Ornamental plants	Processing
Sustainable use of biodiversity in productive landscape	Promotion of agroforestry	Adaptation and dissemination
Sustainable use of biodiversity in productive landscape	Promotion of crop rotation alternatives	Adaptation and dissemination
Sustainable use of biodiversity in productive landscape	Resins	Ameliorate production of charcoal
Sustainable use of biodiversity in productive landscape	Resins	Define species
Sustainable use of biodiversity in productive landscape	Resins	Establish rules for extraction
Sustainable use of biodiversity in productive landscape	Resins	Inventories
Sustainable use of biodiversity in productive landscape	Resins	Market access, certification
Sustainable use of biodiversity in productive landscape	Resins	Processing
Sustainable use of biodiversity in productive landscape	Wood-based artesanal production	Capacity building for alternative use of wood products
Sustainable use of biodiversity in productive landscape	Wood-based artesanal production	Certification and marketing (Including feasibility studies)
Sustainable use of biodiversity in productive landscape	Wood-based artesanal production	Development of managerial skills
Sustainable use of biodiversity in productive landscape	Wood-based artesanal production	processing
Sustainable use of biodiversity in productive landscape	Wood-based artesanal production	Quality control
Sustainable use of biodiversity in productive landscape	Wood-based artesanal production	Reference plots to adjust extraction rate

D. Project Management and Coordination (US$3.10 million, GEF US$ 2.59 m)

This component will finance the establishment and operation of a technical unit at the central level, and of two Technical Units at the regional level (one for Chiapas; one for the Yucatan Peninsula: Campeche, Yucatán and Quintana Roo) as well as operational costs of the National Corridor Council and State Corridor Councils. The technical units will undertake day-to-day management of project activities, will ensure compliance of project activities with project objectives and procedures, will be responsible for

procurement of goods, works, services and financial audits; and will be responsible for keeping the National Corridor Council and State Corridor Councils informed of the projects and advances and operation, and taking into account their recommendations.

The National Technical Unit (NTU), in coordination with the Regional Technical Units (RTUs), will prepare and execute, subject to the no-objection of the National Corridor Council, the Consolidated Annual Plan of Operation and budget (AOP), based on annual corridor operational plans proposed by the Regional Units. The NTU will ensure the liaison between the project and related activities in the broader Mesoamerican corridor initiative. The Regional Technical Units will develop Annual Operational Plans at the corridor level, which will follow the recommendations of the respective Corridor State Council (CSC), and which will be submitted in block to the CSC for its no-objection . The regional units will report to the National Technical Unit (see section on implementation arrangements below for further details on the State and National Councils and their relationships with National and Regional Technical Units).

Annex 3: Estimated Project Costs

(US$ million)

Mexico
Mesoamerican Biological Corridor
Project Components by Year -- Base Costs
(US$ '000)

	Base Cost							
	2001	2002	2003	2004	2005	2006	2007	Total
1. Participatory Design and Monitoring of Corridors	1,189.5	314.9	879.1	589.5	877.3	228.6	1,167.4	5,246.3
2. Corridor Integration into Development Programs	9,134.3	8,985.8	9,134.3	8,985.8	9,134.3	8,985.8	9,134.3	63,494.6
3. Sustainable Use of Biodiversity	1,117.7	1,267.8	1,353.7	1,269.7	941.9	854.8	922.2	7,727.8
4. Project Management and Coordination	409.6	360.4	360.4	369.6	360.4	360.4	360.4	2,581.1
Total BASELINE COSTS	11,851.1	10,928.8	11,727.5	11,214.5	11,314.0	10,429.6	11,584.3	79,049.8
Physical Contingencies	162.3	149.6	153.9	150.2	95.7	91.3	94.7	897.6
Price Contingencies	205.4	574.8	1,043.9	1,421.3	1,865.9	2,139.3	2,855.4	10,106.0
Total PROJECT COSTS	12,218.8	11,653.2	12,925.3	12,786.0	13,275.6	12,660.2	14,534.4	90,053.4

Mexico
Mesoamerican Biological Corridor
Components by Financiers
(US$ '000)

	GOM		GEF		GTZ		CONABIO		IBRD		Beneficiaries		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1. Participatory Design and Monitoring of Corridors	378.6	6.4	4,262.3	72.1	-	-	1,187.1	20.1	-	-	81.3	1.4	5,909.3	6.6
2. Corridor Integration into Development Programs	63,494.2	88.5	3,976.3	5.5	-	-	-	-	4,252.9	5.9	-	-	71,723.4	79.6
3. Sustainable Use of Biodiversity	2,647.9	28.4	4,012.7	43.1	2,441.0	26.2	-	-	-	-	210.4	2.3	9,312.0	10.3
4. Project Management and Coordination	466.3	15.0	2,589.2	83.3	-	-	53.1	1.7	-	-	-	-	3,108.7	3.5
Total Disbursement	66,987.0	74.4	14,840.5	16.5	2,441.0	2.7	1,240.3	1.4	4,252.9	4.7	291.7	0.3	90,053.4	100.0

Annex 4: Incremental Costs and Global Environmental Benefits

Mexico is among the first four "megadiversity" countries, containing an estimated 10% of the world's biodiversity. The Southeast region (including the states of Chiapas, Yucatan, Campeche and Quintana Roo) is one of the country's most important biodiversity havens, and at the same time, one of the areas with the most urgent development needs. In such a context, a viable strategy for biodiversity conservation must be based on a clear fit within the region's overarching development priorities. The present project proposes to use the Biological Corridor concept as an ordering principle for territorial planning and management, thereby making biodiversity an integral part of the region's development programs.

BASELINE SCENARIO

Biodiversity of Mexico's southeast region is subject to a number of pressures from human activities. These include very large conversion of forests and other pristine ecosystems to cattle ranching and agriculture (in the Yucatan peninsula 1 million has and 0.6 million has, respectively); oil extraction and transformation with related negative impacts on wetlands and other coastal ecosystems; tourism development along the coasts of Quintana Roo, Yucatan, and Campeche. It is expected that in a baseline scenario, pressure on terrestrial and coastal biodiversity –mainly through disruption of habitat- will continue.

The proposed project area overlaps with ten of Mexico's 36 regions of high priority for alleviation of poverty and mitigation of social and economic marginalization. Priority regions are the target of an effort of eight ministries in the federal government (Environment, Agriculture, Land Tenure, Transports, Social Development, Health, Trade and Education) to coordinate their activities in support of regional (i.e. sub-state) development.

In the absence of GEF assistance for addressing global biodiversity objectives through the proposed integrated landscape approach, it is expected that those ministries would concentrate their development resources on agriculture and natural resource management programs that would generate national benefits for the four states of the proposed project. Recent budget figures indicate that some US $100 m per year would be allocated to priority regions in the project's four states.

A detailed exercise of assessment of relevant public investment in the project area has been undertaken as part of project preparation, with information for the individual programs broken down at the municipality or community level and tracked over the course of the current federal administration. Results from such exercise indicate that, based on recent patterns of expenditure, it is plausible to expect, during the 7-year life of the project, public funding to the corridor area in the order of US$61.97 million for rural and social development, and US$ 5.0 million for conservation and sustainable use of natural resources (of the former figure, it's estimated that some US$4.25 million would be financed by the World Bank loan "Rural Development in Marginal Areas," which includes in its list of target areas two regions in Chiapas comprised in the Corridor project area). In addition, based on the budget fo CONABIO, it is estimated that US$1.24 million would finance baseline activities related to those proposed by the project in the components of Corridor Design and project coordination and management.

Explicit biodiversity conservation efforts would be concentrated in maintenance of existing protected areas (which include those supported by the earlier GEF protected area project, such as Sian Ka'an, Calakmul, Ria Lagartos, Montes Azules, Isla Contoy, El Triunfo), with limited or no attention to the important role

played by ecosystems located outside protected areas in guaranteeing the continuity of habitats, the exchange of genetic flows and the mobility of migratory species.

The combined cost of the baseline scenario (natural resource management, GOM- and Bank- financed agriculture and rural development, and CONABIO) is estimated at US$68.21 million equivalent.

Under this baseline scenario, it is expected that biodiversity would be protected mainly within existing protected areas. However, the long-term integrity and sustainable use of natural resources within a broader biodiversity corridor would not be ensured because:

1) There are no readily available monitoring tools for managing the various ecosystems linking protected areas in biological corridors (conceived as integrated units for territorial planning);

2) Knowledge about farming and natural resources management practices that are beneficial to conservation and sustainable use of biodiversity and agrobiodiversity outside protected areas is limited;
3) Current managers and beneficiaries of development programs have no incentives to integrate biodiversity concerns into federal and state programs, nor are there any systematic plans for doing so in the near future;
4) Current initiatives for conserving biodiversity in the productive landscape (such as UNDP's small grant program) require scaling up (both in spatial and organizational terms) to be able to make a long-lasting difference in southeastern Mexico;
5) Capacity for the design, implementation and monitoring of initiatives for biodiversity sustainable use in the productive landscape is inadequate, both in the government and the NGO sectors.

GLOBAL ENVIRONMENTAL OBJECTIVE

The Global Environment objective of the project is to promote conservation and sustainable use of globally significant biodiversity through the establishment of biological corridors linking Protected Areas in the southeast of Mexico. The corridors will foster the ecological equilibrium of land and coastal ecosystems, within a sustainable development approach.

The four states of the project area comprise a variety of ecosystems, including lowland tropical rain forests, coastal wetlands, mangroves, savannas; in Chiapas there are temperate cloud forests, an ecosystem which covers 1% of the national territory and represents 10% of the country's flora. The coral reefs of the Yucatan and Quintana Roo coasts also contribute significantly to Mexico's great biological diversity. In addition to their own high global importance, these ecoregions and ecosystems form part of a critical link in a larger Mesoamerican Biological Corridor (MBC) linking North America, Central America, and South America.

GEF ALTERNATIVE

With GEF assistance for addressing the global biodiversity objectives outlined above, the GOM would be able to undertake a more ambitious program that would generate both national and global benefits. The GEF Alternative would comprise the baseline scenario described earlier (protected area management plus development in priority regions), augmented with an expanded conservation and sustainable use program explicitly designed to address biodiversity conservation outside protected areas, as well as mainstreaming of biodiversity into regular government programs and projects.

The GEF alternative would promote the establishment and maintenance of biological connectors linking protected areas via a sequential approach: in the inception phase, lasting four years, nine focal areas (see Box 1 in the main text for definitions) would be supported; in the second 3-year phase, seven additional focal areas would be financed. The phased approach would enable learning by doing in corridor design and implementation; and it would facilitate the establishment of a set of indicators that –once met- would trigger transition to the consolidation phase.

It is anticipated that the GEF intervention would catalyze additional development resources from bilateral sources. Consultation undertaken during preparation indicates that GTZ is developing complementary initiatives worth some US$ 2.4 million. The European Union is in the early stages of development of program of assistance, and may join forces with the GEF at a later stage.

This expanded Biological Corridor program would comprise four different activities (described in detail in the Project Document):

- Corridor Design and Monitoring [Total US$ 5.91 m, GEF $4.26 m],
- Biodiversity Mainstreaming, [Total US$71.72 m, GEF US$ 3.98 m]
- Sustainable use of Biodiversity in the Productive Landscape [Total US$ 9.31 m, GEF US$4.01 m]
- Project management and coordination arrangements, [Total US$3.1 m, GEF US$2.59 m]

The GEF Alternative will make possible activities and programs that would not have been possible under the baseline scenario, thus covering important gaps that threaten the biological and ecological integrity of the Corridor area. The combined cost of the GEF Alternative (baseline scenario plus Biological Corridor program) is estimated at US$ 90.05 million.

The project would put in place a continuous system of protected and non-protected areas with incentives for biodiversity conservation and sustainable use. Such a system would not only ensure preservation of globally significant biodiversity but also the connection between key areas as a corridor concept. Implementation of the GEF Alternative would result in the following outcomes:

1) Minimizing threats to biodiversity by strengthening sustainable biodiversity use in 16 focal areas distributed in five broader biological corridors. The corridors would include an appropriate system for monitoring and evaluation of land uses and their impact on biodiversity. The connectors would be developed in a participatory manner and with the consensus of key GOM agencies and donors and the support of local and regional

governments, NGOs and community representatives; they would serve as the framework within which public investment programs for the region would be designed

2) Ensuring conservation of biodiversity within the Corridor area by financing pilot and demonstration sub-projects of communities for the sustainable use and conservation of biodiversity outside of protected areas.

3) Promoting systematic integration of biodiversity concerns into processes of regular development planning of federal state agencies. This would be achieved through financing technical studies for the re-formulation of natural resources programs, revision of the programs' operational manuals, training of government field staff, support to demonstration projects.

4) Raising awareness about biodiversity resources through environmental education and training of indigenous and non-indigenous communities.

5) Strengthening capacity of community groups and NGOs in designing, implementing and monitoring activities of natural resource management compatible with the sustainable use of biodiversity.

GEF funds would be critical to leveraging additional cofinancing for this initiative, from national, bilateral and multilateral sources.

INCREMENTAL COSTS

The difference in cost between the Baseline Scenario and the proposed Alternative is estimated at US$ 21.84 million. Of this amount, it is estimated that about US$2.44 million would be forthcoming from bilateral donors, US $4.27 million from the Government, and US$ 0.3 million from project beneficiaries. It is estimated that an incremental cost of US$14.84 million will be incurred to achieve global environmental benefits through the protection and sustainable use of biodiversity in the corridor area; this amount would therefore be eligible for GEF support. See the following table for a summary of the project components and the proposed financing plan of the incremental cost.

Table 8: Incremental Cost Matrix

Component Sector	Cost Category	US$ Million	Domestic Benefits	Global Benefits
Corridor Design and Monitoring	Baseline	$1.19 M	Basic tools for natural resource monitoring	
	With GEF Alternative	$5.91 M	Integrated planning tools to address local externalities	Planning tools for regional planning of globally significant biodiversity
	Increment	$4.72 M		
Integration of Corridors into development Programs	Baseline (Government)	$57.72 M	Rural and social development programs	Limited or no consideration of threats to and opportunity for biodiversity management outside protected areas
	Baseline (IBRD)	$4.25 M	Rural development (estimated financing in project area from IBRD marginal area loan)	
	With GEF Alternative	$71.72 M	Internalization of natural resource considerations into development programs and projects	Integration of biodiversity into development planning
	Increment	$9.75 M		
Sustainable use of biodiversity	Baseline	$5.00 M	Sustainable use benefits for a few resource users	
	With GEF Alternative	$9.31 M	Income and employment benefits for a larger number of resource users and communities	Demonstration of social, institutional and economic viability of biodiversity sustainable use activities
	Increment	$4.31 M		
Project Coordination	Baseline	$.05 M		
	With GEF Alternative	$3.11 M	Professional team assisting processes of integrated natural resource management	Professional team to assist Mexico in removing barriers to sustainable use of biodiversity
	Increment	$3.06 M		
Totals	Baseline (Government)	$63.96 M		
	Baseline (IBRD)	$4.25 M		
	With GEF Alternative	$90.05 M		
	Increment	$21.84 M		
	Financing Plan:			
	Government	$4.27 M		
	Bilaterals	$2.44 M		
	Beneficiaries	$.29 M		
	GEF	$14.84 M		

Annex 5: Financial Summary

Mexico: Mesoamerican Biological Corridor Project

Years Ending
(US$ million)

	IMPLEMENTATION PERIOD						
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
Total Financing Required							
Project Costs							
Investment Costs	11.87	11.29	12.55	12.40	12.88	12.25	14.11
Recurrent Costs	0.35	0.36	0.37	0.39	0.40	0.41	0.42
Total Project Costs	12.22	11.65	12.92	12.79	13.28	12.66	14.53
Total Financing	12.22	11.65	12.92	12.79	13.28	12.66	14.53
Financing							
GEF	2.69	1.48	2.33	1.90	2.27	1.38	2.79
IBRD	0.55	0.57	0.58	0.60	0.63	0.65	0.67
Government	8.77	9.01	9.39	9.65	9.77	9.99	10.41
Co-financiers (GTZ)	0.0	0.37	0.39	0.40	0.41	0.43	0.44
Conabio	0.16	0.17	0.17	0.18	0.18	0.19	0.19
Beneficiaries	0.05	0.05	0.06	0.06	0.02	0.02	0.03
Total Financing	12.22	11.65	12.92	12.79	13.28	12.66	14.53

Annex 6: Procurement and Disbursement Arrangements

PROCUREMENT

Procurement Responsibilities and Capacity

The project will be executed by the *Fondo para la Biodiversidad* supporting the National Commission for Sustainable Use of Biodiversity (CONABIO). CONABIO will be in charge of managing the execution of the proposed project through a Management Unit that will be staffed by a General Director, a Director of Administration, and a support staff. Two regional offices reporting to the General Director will be established, one in Chiapas and the other in Yucatan (the latter will provide services to three states: Yucatan, Quintana Roo and Campeche). Both regional offices will be staffed with a Regional Director, an administrator, an expert in Sustainable Development projects, and two Corridor Coordinators.

An overall assessment of CONABIO was carried out by the Mexico Resident Office in August 2000. The evaluation found that CONABIO's own procurement system is well designed, but it lacks experience with Bank's financed projects. The overall procurement risk is considered average. However, the risk is mitigated by the assistance that CONABIO will receive from NAFIN on Bank's procedures, and the training on procurement that the Bank has agreed to carry out for project staff by February 28, 2001.

As part of the action plan agreed with CONABIO to improve their procurement capacity, by effectiveness of the grant, CONABIO will hire a staff with procurement expertise satisfactory to the Bank and will open a register of experts that could be hired as external consultants over the life of the project in different areas of expertise. CONABIO has started already to request expressions of interest from consultants to create this register.

Procurement for subprojects to be financed by the grant will be done under community participation principles through direct contracting and comparison of at least three price quotations to the extent possible. CONABIO will be responsible for including the eligibility criteria and approval procedures in the Operational Manual and will ensure that the agreed procedures are being followed.

Procurement Methods (Table A)

Section I: Procurement of Goods

Part A: Procurement of Goods and Civil Works

1. Procurement of goods and civil works financed by the GEF Grant --computers, software for Data Bases and GIS processing, maps, training materials, office furniture, and stationery and small civil works costing less than US$350,000 equivalent-- shall be carried out in accordance with Bank's Guidelines for Procurement under IBRD Loans and IDA Credits (January 1995, revised in January and August 1996, September 1997 and January 1999) and the following provisions of Section I of this Attachment. Because of the size of the project (about US$300,000 per year, per state) no foreign suppliers are expected to participate, no ICB procedures will apply to procure goods and civil works under this Grant.

2. Goods estimated to cost more than US$100,000 may be procured under contracts awarded in accordance with the provisions of paragraphs 3.3 and 3.4 of the Guidelines using Standard Bidding Documents satisfactory to the Bank. Goods estimated to cost less than US$100,000 per contract up to an

aggregated amount of US$250,000 may be procured through National Shopping in accordance with the provisions of paragraphs 3.5 and 3.6 of the Guidelines.

3. Sub-projects would comprise a broad spectrum of activities to be undertaken with direct participation and contribution of the beneficiaries. The total cost for an individual sub-project would not exceed US$20,000. Eligibility criteria and operational procedures would be included in the Operation Manual for the project. These procedures may include: direct contracting, national shopping procedures for goods, and procurement of small works under lump-sum, fixed priced contracts awarded on the basis of quotations of at least three qualified domestic contractors.

Part B: Review by the Bank of Procurement Decisions

1. No prior review of contracts would be required under the Grant. Rather, ex-post reviews will be conducted by the Bank, based on provisions of the project's operational manual and in a proportion of one every ten contracts.

Table A : Project Cost by Procurement Arrangements
(US$ million

Expenditures Category	ICB	NCB	Others	N.B.F.	Total
1. Subprojects			4.12		4.12
			(1.67)		(1.67)
2. Goods		0.20	0.08		0.28
		(0.17)	(0.07)		(0.24)
3. Consultants and Training					
Consulting Firms			10.20		10.20
			(8.86)		(8.86)
Individual Consultants			3.33		3.33
			(2.83)		(2.83)
4. Operating Costs			2.72		2.72
			(1.24)		(1.24)
5. Baseline Development Program				66.97	66.97
6. Bilateral funding				2.44	2.44
TOTAL		0.20	20.45	69.41	90.06
		(0.17)	(14.67)		(14.84)

Note

N.B.F.=Not Bank-financed (GEF)

Figures in parenthesis are the amount to be financed by the GEF Grant

Section II: Employment of Consultants

Part A: General

1. Consultant services shall be procured in accordance with Guidelines for the use of Consultants by the World Bank Borrowers and the Bank as Executing Agency (January 1997, revised in September 1997 and January 1999) and the following provisions of Section II of this Schedule.

Part B: Quality-Cost Based Selection

2. Except as otherwise provided in Part C of this Section, consultants' services shall be procured under contracts awarded in accordance with the provisions of Section II of the Consultant Guidelines, paragraph 3 of Appendix 1 thereto, Appendix 2 thereto, and the provisions of paragraphs 3.13 through 3.18 thereof applicable to quality-and-cost-based selection of consultants.

3. The following provisions shall apply to consultants' services to be procured under contracts awarded in accordance with the provisions of the preceding paragraph. The short list of consultants, estimated to cost less than $200,000 equivalent per contract, may comprise entirely national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.)

Part C: Other Procedures for the Selection of Consultants

1. Services for processing remote sensing data estimated to cost less than US$200,000 equivalent per contract may be procured under contracts awarded in accordance with the provisions of paragraph 3.6 of the Consultant Guidelines.

2. Services by individual consultants shall be procured under contracts awarded to individual consultants in accordance with the provisions of paragraphs 5.1 through 5.3 of the Guidelines.

Part D: Review by the Bank of the Selection of Consultants

1. Contracts for consultants firms estimated to cost US$100,000 equivalent and individual consultants estimated to cost US$50,000 equivalent or more shall be subject to prior review by the Bank following the provisions set forth in paragraphs 1 and 2 of the Appendix 1 of the Guidelines. Contracts below these threshold shall require Bank's prior approval of the Terms of Reference.

2. With respect to each contract not governed by paragraph 1 of this Part, the procedures set forth in paragraph 4 of the Appendix 1 shall apply.

Section III: Operating Costs.

1. The grant will finance operational costs such as operation, maintenance, insurance for equipment procured under the project, office materials and utilities and communication expenditures required for the implementation of the project.

Section IV: Procurement Monitoring.

1. The Project National Technical Unit (NTU) will prepare annually, in accordance with provisions of the operational manula, a Procurement Plan, satisfactory to the Bank. The NTU will establish procedures for monitoring project execution and impact, procurement implementation, including monitoring of contracts. The NTU will maintain detailed records of procurement activities financed under the Grant.

Table A1: Consultant selection Arrangements
(US$ million)

Expenditures Category	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	TOTAL
A. Firms	8.14			2.06				10.2
	(7.31)			(1.55)				(8.86)
B. Individuals						3.33		3.33
						(2.83)		(2.83)
TOTAL	8.14			2.06		3.33		13.53
	(7.31)			(1.55)		(2.83)		(11.69)

Prior Review Thresholds (Table B)

Table B: Thresholds for Procurement Methods and Prior Review

Expenditures Category	Contract Value Threshold (US$ equivalent)	Procurement Method	Contracts Subject to Prior Review
1. Subprojects		National Shopping Direct Contracting Small Works	None None None
2. Goods	>100,000 <100,000 up to an aggregated Amount of 250,000	NCB National Shopping	None none
3. Consultants			
Firms	>200,000	QCBS International Short-List Expressions of Interest	All (if > 100,000)
	<200,000	QCBS National Short List is accepted	Only TORs (if < 100,000)
Individuals	>50,000 <50,000	Individual Individual	All TORs
Straighforward Nature	<200,000	LCS	TORs
4. Operating Costs			Review Annual Plans

Only consultant service contract will be subject to prior review

None of the contracts for works or goods will be subject to Prior Review because the amount of each contract is small

Overall Procurement Risk Assessment=Average

Frequency of Procurement Supervision Missions Proposed=3 Post Review Missions per year

Before effectiveness of the grant, CONABIO should finalize a procurement plan for the first year of the project and will include it in the Operational Manual. Updated annual procurement plans will be submitted as part of the Annual Operating Plan.

Frequency of Supervision

In addition to the prior review, it is recommended that the Bank carry out one post review mission every four months. Such post-review should cover the review of one out of 10 contracts.

DISBURSEMENT ARRANGEMENTS

The financial management assessment was carried out by a certified specialist. This review was based on the Bank's guidelines for "Review of Financial Management System", and focused on the assessment of the project's accounting system, internal control, planning, budgeting and financial reporting system, selection of an auditor as well as the format and contents of the Project Management Report (PMR) to be quarterly submitted by the recipient. This assessment revealed that project does not have in place an adequate project financial management system that can provide, with reasonable assurance, accurate and timely information on the status of the project (PMR) as required by the Bank. Nevertheless, current system satisfies the Bank's minimum financial management requirements

Consequently, traditional disbursement methods (SOEs, special commitments and direct payments) will be used until (i) PMR-base disbursement has been offically approved by the MOF (Secretaria de Hacienda y Crédito Público) and (ii) both National and regional units are ready to adopt this methodology. CONABIO is taking actions, in close coordination with Nafin, for Bank requirement's compliance, including implementation of an MIS which will produce quarterly PMRs and eventually allow for PMRs-based disbursements. Expenditures that could be disbursed on the basis of SOE are the following: all contracts for works and goods, consultant firm contracts below $100,000, individual consultant contracts below $50,000, all expenditures for subprojects, training, and operating costs.

A Special Account in US dollars with an initial deposit of US $650,000 would be established. This special account will be replenished and will be used for all transactions with a value of less than 20% of the amount advanced to the Special Account. Traditional documentation requirements apply for direct payments, special commitments and statements of expenditures (SOEs). If project is converted to PMR-based disbursement methodology, disbursement procedures should be in line with the Financial Management Initiative (FMI). The executing agency, with technical support from the financial agency NAFIN, would prepare the necessary documentation for prompt disbursements. An operating account in Mexican pesos would be established and should be used for all project transactions. This local-currency operating account should be replenished on monthly basis. The amount to be transferred from the Special Account to this account must be only the estimation to cover one month eligible expenditures

Each Regional Technical Unit and the National Technical Unit will maintain separate project records and will, on a monthly basis, consolidate project records. Such records will be maintained in order to reflect, in accordance with sound accounting practices, the operations, resources and expenditures of each project activity. The unit will be audited on annual basis by independent auditors. The audit report will be submitted to the Bank within the six months after the end of each year.

Annex 6: Table C: Allocation of Grant Proceeds

Mexico
Mesoamerican Biological

Allocation of Grant Proceeds	Suggested Allocation of Grant Proceeds	
GEF (Special Drawing	Loan Amount	Disbursemen %
1. Goods	183,315	86
2. Consultant Services and	8,954,817	100
3.	1,127,522	86
4. Operating	916,003	86
Unallocated	318,343	-
Total	11,500,000	

Grant amounts financed by GEF

Annex 7: Project Processing Schedule

Project Schedule	Planned	Actual
Time taken to prepare the project (months)		
First Bank mission (identification)	09/08/98	2/08/98
Appraisal mission departure	5/20/00	5/30/00
Negotiations	10/10/00	10/16/00
Planned Date of Effectiveness	12/15/00	01/31/01

Prepared by:

National Coordinator: Dr. Hans van der Wal, under the supervision of:

Secretaría de Medio Ambiente, Recursos Naturales y Pesca (SEMARNAP), Instituto Nacional de Ecología (INE), Secretaría de Agricultura, Ganadería y Desarrollo Rural (SAGAR), Secretaría de Desarrollo Social (SEDESOL), Secretaría de Comunicaciones y Transportes (SCT), Secretaría de Reforma Agraria (SRA), Comisión Nacional para el Conocimiento y Uso de la Biodiversidad.

Preparation assistance:

PHRD (TF025318)
GEF PPG (TF022489)
GEF Block A (TF028440)

Bank staff who worked on the project included:

Name	Specialty
Raffaello Cervigni	Task Team Leader, Natural Resources Economist
Adolfo Brizzi	Sector Leader
Christine Kimes	GEF Regional Coordinator
Arsenio Rodriguez	Senior Advisor
Tania Carrasco	Consultant, Anthropologist
Gonzalo Castro	Biodiversity Specialist
Lucia Grenna	Communication Specialist
Ricardo Hernandez	Environmental Specialist
Christian Pieri	Agro-ecologist
Carl Lundin	Environmental Specialist
Jorge Uquillas	Sociologist
Mark Austin	Project Management Specialist
Lea Braslavsky	Procurement Specialist
Victor Ordoñez	Financial Management Specialist
Rocio Sarmiento	Program Assistant
Teresa Roncal	Procurement Analyst (Cost tables)

Annex 8: Documents in the Project File

A. Project Implementation Plan

First draft of PIP

B. Bank Staff Assessments

Communication Strategy
Environmental Analysis
Financial Management Assessment
Institutional Assessment
Procurement Assessment
Social Analysis

C. Other

Agroecological alternatives for the Quintana Roo and Campeche corridors
Analysis of the forestry sector in Campeche and Quintana Roo
A Review Of Criteria To Design Biological Corridors For Sustainable Development (Desk Study prepared by Miguel Fernandez)
Memories of preparation meetings in Chiapas, Campeche, Yucatan and Quintana Roo
Memories of workshops: Cancun, Akumal, Xpujil , Merida, Tuxtla Gutierrez
Problem-opportunity analysis for focal areas in the corridors
Project Information Document
Social assessment Chiapas, Campeche, Quintana Roo, Tabasco and Yucatan
Selection and Design of Biological Corridors (Oxford University)
Memories of meetings of preliminar Corridor Councils
Memories of work meetings
Hurricane impacts on the Yucatan Peninsula landscape
The Northern Yucatan Coastal Corridor
Monitoring and Evaluation Protocol

Annex 9: Statement of Loans and Credits

As of 10/15/00

			Original Amount in US$ Millions				Difference Between Expected and Actual Disbursements[#]		
FY	Project ID	Project Name	IBRD	IDA	GE	Cancel.	Undisb.	Orig.	Frm Rev'd
1999	P048505	AGRICULTURAL PRODUCT	444.40	0.00	0.00	0.00	266.30	11.30	0.00
2000	P060718	ALTERNATIVE ENERGY	0.00	0.00	0.00	0.00	7.50	2.40	0.00
1997	P007726	AQUACULTURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000	P067491	Bank Restructuring Facility	505.10	0.00	0.00	0.00	150.00	144.90	0.00
1997	P007700	COMMUNITY FORESTRY	15.00	0.00	0.00	0.00	7.80	2.70	0.00
1997	P043163	FEDERAL ROADS MODZTN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999	P007610	FOM RESTRUCTURING	505.00	0.00	0.00	0.00	462.00	282.00	0.00
1993	P007723	HWY RHB & SAFETY	480.00	0.00	0.00	0.00	6.80	6.80	0.00
1998	P044531	KNOWLEDGE & INNOV.	300.00	0.00	0.00	0.00	251.20	26.20	0.00
1993	P007648	MEDIUM CITIES TRANSP	200.00	0.00	0.00	23.00	107.50	130.50	107.49
2000	P066938	MX GENDER (LIL)	3.10	0.00	0.00	0.00	3.10	0.00	0.00
1998	P007720	MX: HEALTH SYSTEM REFORM - SAL	700.00	0.00	0.00	0.00	350.00	350.00	0.00
1998	P040199	MX: BASIC EDUC.DEVELOPMENT PHASE I	115.00	0.00	0.00	0.00	69.40	27.80	0.00
1996	P007689	MX: BASIC HEALTH II	310.00	0.00	0.00	0.00	94.30	75.30	60.30
1998	P055061	MX: HEALTH SYSTEM REFORM TA	25.00	0.00	0.00	0.00	15.40	9.60	0.00
1998	P049895	MX: HIGHER ED. FINANCING	180.20	0.00	0.00	0.00	164.70	33.70	0.00
1994	P007725	MX: PRIMARY EDUC.II	412.00	0.00	0.00	40.00	66.70	106.70	66.67
1995	P034490	MX: TECHNICAL EDUC/TRAINING	265.00	0.00	0.00	30.00	124.10	154.10	9.08
1994	P007710	N. BORDER I ENVIRONM	368.00	0.00	0.00	301.00	36.20	322.20	46.11
1994	P007701	ON-FARM & MINOR IRRI	200.00	0.00	0.00	30.00	51.20	81.20	10.95
1998	P050429	OZONE PROTECTION III	0.00	0.00	13.00	0.00	10.10	-1.90	0.00
1998	P007711	RURAL DEV. MARG.AREA	47.00	0.00	0.00	0.00	35.30	14.80	0.00
2000	P057530	RURAL DEV.MARG.ARII	55.00	0.00	0.00	0.00	51.40	-0.50	0.00
1997	P007732	RURAL FIN. MKTS T.A.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1995	P007702	SECOND DECENTRALZTN	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1994	P007612	SOLID WASTE II	200.00	0.00	0.00	193.10	1.50	-4.50	1.47
1996	P007713	WATER RESOURCES MANA	186.50	0.00	0.00	0.00	133.90	65.20	12.07
Total:			5516.30	0.00	13.00	617.10	2466.40	1840.60	314.14

Mexico
Statement of IFC's
Held and Disbursed Portfolio
As of 8/31/00
(In US Dollars Millions)

			Held				Disbursed			
FY Approval		Company	Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1988/91/92/93/95		Apasco	12.60	0.00	0.00	50.40	12.60	0.00	0.00	50.40
	1998	Ayvi	10.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
1990/92/96		BANAMEX	96.21	0.00	0.00	45.18	96.21	0.00	0.00	45.18
	1997	Banco Bilbao MXC	70.59	0.00	30.00	0.00	70.59	0.00	30.00	0.00
	1992	Banorte-SABROZA	3.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
1995/96		Baring Mex. FMC	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00
1995/99		Baring Venture	0.00	2.73	0.00	0.00	0.00	0.00	0.00	0.00
	1998	CIMA Mexico	0.00	4.80	0.00	0.00	0.00	4.80	0.00	0.00
	1998	CIMA Puebla	7.00	0.00	0.00	0.00	3.50	0.00	0.00	0.00
	1994	CTAPV	3.73	0.00	2.32	0.00	3.73	0.00	2.32	0.00
	0	Chiapas-Propalma	0.00	0.80	0.00	0.00	0.00	0.31	0.00	0.00
	1997	Comercializadora	3.06	0.00	2.19	6.25	3.06	0.00	2.19	6.25
	1999	Corsa	13.00	3.00	0.00	0.00	13.00	3.00	0.00	0.00
	1993	Derivados	2.20	0.00	0.00	0.00	2.20	0.00	0.00	0.00
	1997	Fondo Chiapas	0.00	4.20	0.00	0.00	0.00	0.43	0.00	0.00
	1998	Forja Monterrey	13.00	3.00	0.00	13.00	13.00	3.00	0.00	13.00
1991/96		GIBSA	21.64	0.00	10.00	72.76	21.64	0.00	10.00	72.76
	1993	GIDESA	6.25	8.00	0.00	4.25	6.25	8.00	0.00	4.25
1996/00		GIRSA	45.00	0.00	0.00	60.00	22.71	0.00	0.00	30.29
	1993	GOTM	0.82	0.00	0.00	0.22	0.82	0.00	0.00	0.22
1997/98		Gen. Hipotecaria	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00
	1998	Grupo Calidra	12.00	6.00	0.00	10.00	12.00	6.00	0.00	10.00
	1989	Grupo FEMSA	0.00	9.43	0.00	0.00	0.00	9.43	0.00	0.00
	1997	Grupo Minsa	18.00	10.00	0.00	27.00	18.00	10.00	0.00	27.00
1992/93/95/96/99		Grupo Posadas	25.00	0.00	10.00	10.00	25.00	0.00	10.00	10.00
1992/96/97/98		Grupo Probursa	0.00	1.32	0.00	0.00	0.00	1.32	0.00	0.00
	1998	Grupo Sanfandila	9.58	0.00	0.00	4.70	6.25	0.00	0.00	3.03
1994/96/98/00		Heller Financial	0.00	0.32	0.00	0.00	0.00	0.32	0.00	0.00
	2000	ITR	14.00	0.00	0.00	4.00	10.90	0.00	0.00	3.10
	1994	Interceramic	8.00	0.00	6.00	3.50	8.00	0.00	6.00	3.50
	2000	InverCap	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
	1993	Masterpak	2.40	0.00	0.00	0.00	2.40	0.00	0.00	0.00
	1998	Merida III	30.00	0.00	0.00	73.95	27.36	0.00	0.00	67.44
1995/99		Mexplus Puertos	0.00	1.41	0.00	0.00	0.00	1.41	0.00	0.00
1996/99/00		NEMAK	0.00	0.00	0.83	0.00	0.00	0.00	0.83	0.00
	1998	Punta Langosta	2.63	1.00	0.00	4.55	2.63	1.00	0.00	4.55
	2000	Rio Bravo	50.00	0.00	0.00	59.50	22.83	0.00	0.00	27.17
	2000	Saltillo S.A.	35.00	0.00	0.00	43.00	0.00	0.00	0.00	0.00
	1999	Sudamerica	0.00	15.00	0.00	0.00	0.00	15.00	0.00	0.00
	1997	TMA	2.77	0.00	2.10	9.60	2.77	0.00	2.10	9.60
	1992	Toluca Toll Road	7.16	0.00	0.00	0.00	7.16	0.00	0.00	0.00
1991/92		Vitro	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1991	Vitro Flotado	4.96	0.00	0.00	2.07	4.96	0.00	0.00	2.07
	1998	ZN Mxc Eqty Fund	0.00	25.30	0.00	0.00	0.00	9.81	0.00	0.00
	Total Portfolio:		529.60	98.53	63.44	503.93	432.57	74.85	63.44	389.81

Approvals Pending Commitment

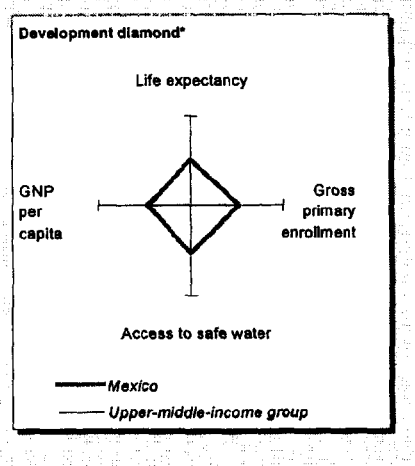
FY	Company	Loan	Equity	Quasi	Partic
1999	BANAMEX LRF II	50,000	0	0	0
1999	Baring BMPEF FMC	0	60	0	0
1998	Cima Hermosillo	7,000	0	0	0
2000	Educacion	9,700	0	0	0
2000	FCCM	10,500	2,000	0	17,700
2000	Hospital ABC	30,000	0	0	14,000
2000	Innopack	15,000	15,000	0	0
2000	Teksid Aluminio	25,000	0	0	0
2000	Teksid Hierro	15,000	0	0	30,000
Total Pending Commitment:		162,200	17,060	0	61,700

Annex 10: Country at a Glance

Mexico at a glance

8/25/2000

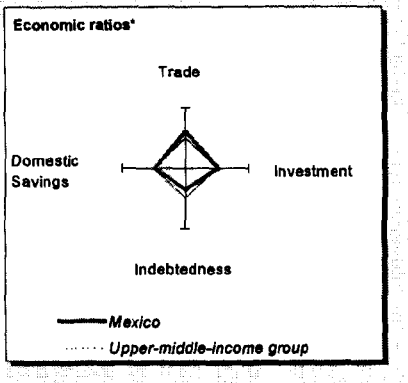
POVERTY and SOCIAL	Mexico	Latin America & Carib.	Upper-middle-income
1999			
Population, mid-year *(millions)*	97.4	509	573
GNP per capita *(Atlas method, US$)*	4,410	3,840	4,900
GNP *(Atlas method, US$ billions)*	429.6	1,955	2,811
Average annual growth, 1993-99			
Population *(%)*	1.7	1.6	1.4
Labor force *(%)*	3.0	2.5	2.1
Most recent estimate (latest year available, 1993-99)			
Poverty *(% of population below national poverty line)*	..	..	..
Urban population *(% of total population)*	74	75	76
Life expectancy at birth *(years)*	72	70	70
Infant mortality *(per 1,000 live births)*	30	31	27
Child malnutrition *(% of children under 5)*	..	8	7
Access to improved water source *(% of population)*	83	75	78
Illiteracy *(% of population age 15+)*	9	12	10
Gross primary enrollment *(% of school-age population)*	114	113	109
Male	116	..	..
Female	113	..	..



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

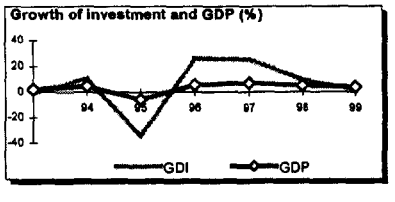
	1979	1989	1998	1999
GDP *(US$ billions)*	134.5	223.0	416.3	483.7
Gross domestic investment/GDP	26.0	22.9	24.3	23.2
Exports of goods and services/GDP	11.2	19.0	30.8	30.8
Gross domestic savings/GDP	24.7	22.9	22.3	21.9
Gross national savings/GDP	21.7	20.3	20.5	20.6
Current account balance/GDP	-4.1	-2.6	-3.9	-2.9
Interest payments/GDP	2.5	3.5	2.4	1.7
Total debt/GDP	31.8	42.1	38.4	34.0
Total debt service/exports	72.4	32.9	19.2	24.6
Present value of debt/GDP	..	..	37.4	33.0
Present value of debt/exports	..	..	111.5	100.4

	1979-89	1989-99	1998	1999	1999-03
(average annual growth)					
GDP	1.3	2.9	4.8	3.7	4.9
GNP per capita	-0.9	1.1	3.1	2.5	3.2
Exports of goods and services	8.4	13.6	12.0	13.9	7.4

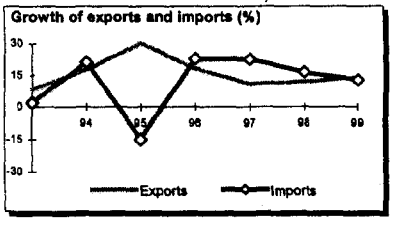


STRUCTURE of the ECONOMY

	1979	1989	1998	1999
(% of GDP)				
Agriculture	9.8	7.8	5.3	5.0
Industry	33.4	29.4	28.5	28.2
Manufacturing	22.7	21.9	21.3	21.1
Services	56.7	62.9	66.3	66.8
Private consumption	64.4	68.9	67.3	68.0
General government consumption	10.9	8.3	10.4	10.0
Imports of goods and services	12.5	19.1	32.8	32.0



	1979-89	1989-99	1998	1999
(average annual growth)				
Agriculture	1.2	1.7	0.8	3.5
Industry	0.9	3.5	6.3	3.8
Manufacturing	1.1	4.0	7.3	4.1
Services	1.8	2.7	4.5	3.6
Private consumption	1.4	2.2	5.5	4.3
General government consumption	3.1	1.7	2.2	1.0
Gross domestic investment	-4.3	4.3	9.5	1.5
Imports of goods and services	-1.1	11.9	16.5	12.8
Gross national product	1.2	2.9	4.8	4.2



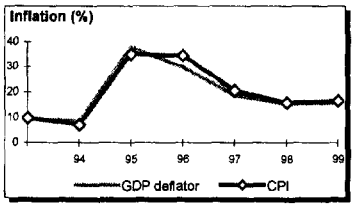
Note: 1999 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

Mexico

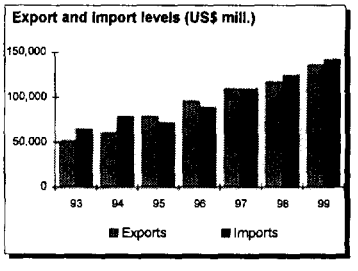
PRICES and GOVERNMENT FINANCE

	1979	1989	1998	1999
Domestic prices				
(% change)				
Consumer prices	..	20.0	15.9	16.7
Implicit GDP deflator	19.6	26.5	15.4	15.9
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	25.8	20.4	20.7
Current budget balance	..	-1.8	2.1	1.7
Overall surplus/deficit	..	-4.6	-1.2	-1.1



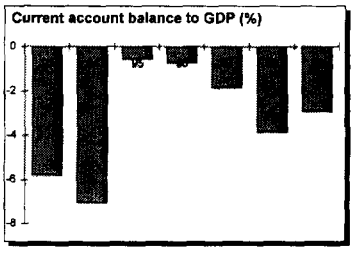
TRADE

	1979	1989	1998	1999
(US$ millions)				
Total exports (fob)	..	35,171	117,460	136,391
Oil	..	7,876	7,134	9,928
Agriculture	..	1,754	3,797	3,926
Manufactures	..	24,936	106,062	122,085
Total imports (cif)	..	34,766	125,373	141,975
Consumer goods	..	3,499	11,109	12,175
Intermediate goods	..	26,499	96,935	109,270
Capital goods	..	4,769	17,329	20,530
Export price index *(1995=100)*	..	96	95	98
Import price index *(1995=100)*	..	89	100	99
Terms of trade *(1995=100)*	..	108	94	99



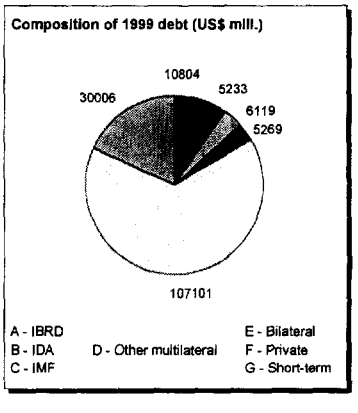
BALANCE of PAYMENTS

	1979	1989	1998	1999
(US$ millions)				
Exports of goods and services	15,131	42,362	128,982	148,083
Imports of goods and services	16,704	42,426	137,801	155,465
Resource balance	-1,573	-63	-8,818	-7,382
Net income	-4,111	-8,302	-13,284	-13,083
Net current transfers	131	2,544	6,012	6,313
Current account balance	-5,553	-5,821	-16,090	-14,153
Financing items (net)	5,868	6,093	18,227	14,746
Changes in net reserves	-315	-272	-2,137	-594
Memo:				
Reserves including gold *(US$ millions)*	..	6,376	29,032	31,829
Conversion rate *(DEC, local/US$)*	2.3E-02	2.5	9.2	9.6



EXTERNAL DEBT and RESOURCE FLOWS

	1979	1989	1998	1999
(US$ millions)				
Total debt outstanding and disbursed	42,765	93,826	159,962	164,532
IBRD	1,731	7,821	11,514	10,804
IDA	0	0	0	0
Total debt service	11,591	15,559	26,778	39,072
IBRD	221	1,245	2,024	2,171
IDA	0	0	0	0
Composition of net resource flows				
Official grants	27	37	32	..
Official creditors	284	936	-776	-1,262
Private creditors	3,798	-2,397	12,219	6,308
Foreign direct investment	1,332	3,037	10,238	11,568
Portfolio equity	0	0	730	3,769
World Bank program				
Commitments	527	2,325	2,212	1,616
Disbursements	326	1,297	1,283	839
Principal repayments	76	677	1,257	1,326
Net flows	250	620	26	-487
Interest payments	145	567	767	846
Net transfers	105	52	-741	-1,332



Annex 11: Social Assessment

The process of social assessment and participation, including indigenous peoples, comprised existing information, especially that provided by the Indigenous Peoples Profiles of Mexico (www.una.mx/ciesas), prepared by several government agencies and NGOs with World Bank's support. It has been complemented by experts' consultations as well as further studies and fieldwork carried out by local NGOs and social consultants, whose expertise is highly recognized.

In order to adequately consider the social, cultural and economic diversity of the population groups within the corridors, including that of indigenous peoples in Chiapas, Yucatan and Campeche, the social assessment formulated a typology of communities and producer groups (peasants). The level of organization, which to a large degree would guarantee the effective participation of these groups in the project, was considered as the main criteria of classification. The typology establishes two main types (and two sub-types within them). Within type 1 (sub-types 1a and 1b), are those communities and producer groups with a low level of organization (about 70 percent of the total). Type 2 (with sub-types 2a and 2b), accounting for the remaining 30% of the population, includes communities with better organization level. During the first years of the project, communities of type 1 will be assisted in the areas of capacity building and planning skills, so that they can make feasible proposals and access project resources for income generation in a context of biodiversity conservation.

Given that almost two thirds of the target population in the project area is made up of indigenous peoples, particularly in Chiapas, Campeche and Quintana Roo, the project has designed a specific plan to work with them (see Annex 12).

Implementation of the social assessment process has essentially entailed the following activities:

1) *Identification of key stakeholders in the MMBC and particularly in the connectors.* The primary beneficiaries of this project are rural communities and producer group organizations. More specifically, people who are in the buffer zones of the natural protected areas (nodes) receive priority attention, since they are the main target group of activities that promote conservation and sustainable development. In terms of social organization, most of the target populations are organized in ejidos and indigenous communities. Some ejidos are predominantly oriented to forestry activities; others combine subsistence production (milpa system) or honey production with natural forest management. Indigenous peoples are particularly targeted because they live in areas which still maintain extensive forest cover and because they are considered the strongest allies in the conservation process due to their broad knowledge of the natural resource base and its uses.

Other important beneficiaries are mestizo people, who in many cases manage forestry and agroforestry systems that are recognized to play an important role for biodiversity conservation. Additional direct beneficiaries are individuals and groups who derive their livelihood from ecotourism and ethno-tourism since in the long run the biodiversity and cultural diversity of the area will be protected.

Other key stakeholders of the MMBC are environmental and social advocacy NGOs that aim to promote biodiversity conservation and different forms of sustainable use of natural resources. The private sector is also involved in the region, particularly in tourism along the Cancun-Tulum coastal strip and the numerous archeological sites of the Yucatan Peninsula. Lastly, numerous agencies of the federal, state and local governments are important actors in the development process and in the last few years have become increasingly concerned with conservation.

2) *Identification of key social issues* in biodiversity conservation and sustainable development of the MMBC. At least five key issues have been identified at the initial stage of the preparation process and will be subject of further analysis:

- The need to consider the region as a living space
- The relationship between local culture and the environment
- Land tenure and distribution
- Economic activities
- Social organization

3) *Determining the potential social impacts* of the MMBC, with special focus on indigenous peoples and gender. This aspects has been integrated in the project's Monitoring and Evaluation protocol. Monitoring and evaluation will involve two levels: internal and external. At the first level, rural communities and producer group organizations will assess the sustainable use sub-projects in terms of their objectives, environmental impacts (on water and soil quality, incidence of pests and diseases, presence of wildlife, etc.), and how they affect their process of organization.

External monitoring and evaluation will take into consideration inputs from the internal evaluation of the communities. The evaluation methodology will use both quantitative and qualitative tools and techniques. Among the topics to be included are: determination of benefits provided by the project in terms of quantity and quality, effect of the project on community organizations, the level of awareness over biodiversity conservation and adoption of new technologies.

4) *Formulation of a framework of social participation with a specific focus on indigenous peoples*, ensuring their participation in the project cycle, receive benefits compatible with their culture and are not affected adversely by project activities.

The MMBC Project in its Sustainable Use component includes actions oriented to strengthen social organizations, to incorporate them in the design and implementation of biodiversity conservation and to build their capacity for the sustainable use of natural resources.

The first step is the communication and dissemination of information about the project, using indigenous languages in addition to Spanish and the appropriate media channels (radio, video and printed material). This activity will be carried out by government agencies such as INI ,by universities and NGOs with wide experience in the matter. Public dissemination of project related information (objectives, components and participatory strategies) will be done at the level of rural communities, municipalities, state and federal governments.

Strengthening of rural communities and indigenous organizations will be accomplished via capacity building activities on sustainable use, including agroecology, agroforesty, improving slash and burn agriculture (milpa) and ecotourism. The participants will be technical staff and practitioners, local authorities and members of the civil associations formed by programs already operating in the MMBC. The training agenda will respond to local demand, but it is expected to include topics such as: (a) participatory diagnostics and planning; (b) rescue of traditional knowledge on sustainable natural resource use; (c) adoption of new technologies of sustainable use; (d) project administration; and (e) social organization for sustainable use and conflict resolution. The training methods will be participatory and include workshops, field visits, and peasant to peasant extension events.

With the participation of experts from governmental and non-governmental organizations (including academics) as well as qualified informants, social assessments have already been carried out in all the

corridors (the original reports in Spanish are in project files). This work has contributed to identify the focal areas of each corridor and, within them, the main stakeholders, key social issues, socioeconomic factors affecting conservation, strategies to deal with them, and recommended activities to be carried out by the participant local communities.

The Sian Ka'an-Calakmul Biological Corridor (Quintana Roo)

As stated above, the MMBC Project implemented a Social Assessment in a progressive way. In order to use project preparation resources efficiently and to reduce the possibility of creating expectations that cannot be met among different social actors of the corridor, work started as soon as the approximate limits of a corridor and the potential areas of intervention of the project had been identified.

Background and methodology

During the last 20 years, government agencies in Quintana Roo have implemented several agricultural and forestry projects aiming to improve the socioeconomic situation or rural populations. However, they have generally have not taken into account the socioeconomic and cultural diversity of the State. As a consequence, these projects have had limited success, lack of acceptance, and reduced impact on the rural economy.

The natural resources of Quintana Roo, both in the forested areas as well as in the aquatic ecosystems and in the agricultural areas, are still in a state where biological diversity can be conserved and recovered, thus ensuring the survival and continuity of the species. Nevertheless, future planning and use of natural resources require serious consideration of the impacts of productive activities on biodiversity conservation. This in turn implies the need to involve all social actors who are in a position to take decision about the use of natural resources, especially governmental agencies.

The first phase in the SA process in the Sian Ka'an-Calakmul Corridor started with a preliminary study carried out by a team of anthropologists during May-June of 1999. This study provided the project detailed information about the social and cultural situation of the Corridor, identifying three differentiated cultural groups: (1) the traditional Mayan people, (2) Mayan immigrants (from Yucatan), and (3) mestizo immigrants from Nayarit, Jalisco, Campeche, Veracruz, Tabasco, Chiapas, and Michoacan (See Prospección Social, Ruz, et al. 1999).

During the second phase of the SA, a participatory rural appraisal methodology (PRA) was used. Workshops were organized in a sample of nine communities, representing 15 percent of the total of 49 ejido communities belonging to the three different cultural groups identified in the corridor. These communities were in the municipalities of Othon P. Blanco, José María Morelos, and Felipe Carrillo Puerto. As a complement to the workshops, fieldwork also involved interviews with key informants, including representatives of different gender and age groups (Snook et al., 2000).

Socioeconomic profiles of the focal zones

Land tenure and distribution. The sample of ejidos studied indicates that their land has been delimited and there are no internal conflicts. In the traditional Mayan communities, there is a strong tendency to maintain the collective use of land, while the immigrant communities favor distribution of ejido lands into individual parcels. The older ejidos have an average of 500 has of land per family, in contrast to ejidos formed in the 80s which have averages of 40 to 50 has per family. Finally, there are also landless people in the communities of immigrants, which are known as *pobladores* and *repobladores* who usually work as laborers in the farms of the larger landholders.

Additional factors to consider are population growth, plus the official moratorium on the felling of trees, which are contributing to increasing pressure over available land as young people cannot make new forest clearings for agricultural activities. Thus there is a more intensive use of the soil, which leads to fertility loss and decreasing yields.

Use of natural resources: forestry and agricultural systems. The livelihoods of rural people are highly dependent on the natural resources of the corridor. The most important economic activities are forestry (wood and other forest products) and agriculture both for subsistence and the market. Yet there are significant differences among the three study groups: (1) The Mayan ejidos are old settlements (converted to ejidos in the 40s), occupying relatively large areas and with low population densities. They use mostly slash and burn techniques, with no chemical inputs, and specialize in the production of small domestic animals and vegetables in the backyard. Their main aspiration is to improve their traditional agricultural practices. (2) The ejidos made up of Mayan immigrants are dedicated primarily to agriculture and ranching, using an increasingly modern level of technology, which combines the use of animal traction for land preparation and some chemical inputs. Their main interest is to improve the technical level of agriculture. (3) The ejidos of non-indigenous or mixed immigrants, economic activities and expectations are a combination of the first categories above and thus they do some forestry and cattle raising as well as traditional and improved agriculture.

There are great opportunities for biodiversity conservation and sustainable use of natural resources in the area of the corridor. Although the stocks of mahogany *(caoba)* and Spanish cedar *(cedro)* have been reduced due to selective logging done over a period of about a hundred years, a large extension of the corridor still contains important forest ecosystems. This has been made possible by the creation of natural and forest reserves, the implementation of forestry management plans and the public participation in conservation efforts. Out of the nine ejidos studied, the two traditional Mayan communities have management plans, with dasonomic studies for tree cutting. The two mixed Mayan immigrant ejidos have forest reserves, though at the moment they are not doing forestry. Of the two immigrant mestizo ejidos with forest reserves, one has an advanced model of managing it.

There is general agreement among the people consulted that the priority economic problem is the market (low prices) for forestry and agricultural products. Current support to agriculture promotes increased production but not necessarily increased incomes. Similarly, in the forestry sector, under current management practices, income per hectare is very low. The solution to this problem is to make wider use of forestry products, finding market outlets for common tropical woods, and to train some local people in carpentry so that as to create more jobs and add value to their wood production. Forest producers propose that a regional wood marketing strategy be developed, based on an experience of 20 years ago for *caoba* and *cedro*.

Another problem found among the Mayan ejidos and those composed of mestizo immigrants is that some tree species such as *caoba* and *cedro* have a good market price but are found in low densities in the natural forest. Therefore, in order to increase the value per hectare, they propose the adoption of reforestation techniques, based on the results of research and extension experiences of the last ten years, and to disseminate the practice of planting high value tree species within agricultural land in agroforestry systems and small plantations.

Social organization and development skills. Ejidos in the corridor vary by the level of social organization and development skills. Some ejidos are very well organized and can design and promote their own projects, while others have very low organizational levels and a very low capacity to articulate their needs and demands and consequently to obtain the necessary support. Out of the nine ejidos in the sample, three have a low organizational level, largely because they are located far from the main transportation routes;

two of them are Mayan communities and thus face additional cultural and linguistic barriers when trying to communicate with the outside world. Four ejidos are in an intermediate level and two have a high level of organization, as demonstrated by their ability to negotiate with outsiders, particularly government, and to achieve benefits for their members.As a general rule, people belonging to ejidos with higher levels of internal and inter-community organizations tend to better off than the rest.

Governmental and non-governmental institutions and their programs

Many governmental and NGO programs are not adapted to the local needs, demand and practices and consequently have little success. In parallel, agricultural programs, which complement traditional knowledge and practice (for instance a fruit production corridor and an agroforestry project), have a high acceptance level. Changes in agricultural technology have repercussions not only in the level of production but also in the livelihoods and culture of the Mayan people. Traditional agriculture, based on the milpa system, is an element that integrates their vision of the world, their social organization, and the way they manage their natural environment. Therefore, Mayan people repeatedly request support to recuperate their traditional agriculture and expand their cultivated land area.

Conclusions

The results of the SA indicate the need to tailor the activities of the project to the specific conditions of the communities located in the corridor, taking into consideration their socioeconomic and cultural differences. Specifically, in order to enhance the social impact of the project, the following activities need to be planned and implemented: (1) strengthening social organization; particularly those oriented to income-generating activities ; (2) promoting a gender approach in the generation and distribution of income as well as in communal decision making and the distribution of labor; and (3) increasing their technical capacity for self-managed development in different fields.

The bulk of the above activities can be incorporated into a Capacity Building Program under the Component on Sustainable Use of Biodiversity, focusing on the following topics:

- Social organization for production
- Community administration skills
- Conflict resolution at the community and inter-community levels
- Sustainable use of natural resources
- Specialized technical topics, including artisan production, agriculture, ranching, apiculture, agroforestry, ecotourism, carpentry, land use planning, legal aspects related to land tenure, etc.

The Calakmul-Sian Ka'an Biological Corridor (Campeche)

Socioeconomic profiles of the focal zones

The two focal zones, Xpujil – Zohlaguna (focal zone 1) and Montaña (focal zone 2), are the contact point with the Reserve of the Biosphere of Calakmul of the forestry stand of the Mesoamerican Corridor Calakmul-Sian Ka'an. Primary production predominates in both focal zones. This production is greatly determined by the relation with the forest and the use of biodiversity.

Land tenure and distribution. Even though in the same zone, focal zone 1, with its 31 *ejidos* and a population of 10,464, as a zone of recent immigration, differs from focal zone 2, with its 7 *ejidos* and a

population of 2,613, being this a clearly indigenous Maya area.

In both focal zones, the *ejido* is the central system for land tenure and for administration of natural resources. There are two kinds of *ejidos* that predominate in the region. (1) Forestry *ejidos* with huge extensions in which 12 *ejidos* of 38 cover 80% of the forestry stand. (2) Twenty-six *ejidos* with less than 5,000 ha mostly used for agriculture and livestock activities.

Between the two focal zones, the farmers have formally assigned approximately 215,000 has of common use for forestry utilization, although in their entirety they maintain a greater forestry stand since their individual plots assigned to them for agriculture continue to an important extent under forest cover. This situation is slightly different in the *ejidos* Mayas, who have not plotted their territory and where all men who get married have access to the land, though some livestock owners have fenced certain portions of the territory for private use.

Agriculture and Livestock Production. Subsistence and self-consumption agriculture predominates, with the production system of slash and burn for the production of basic grains, which hardly get into the market for the majority of producers, except for the production of squash seed. After land use for *milpa*, some farmers plant pasture for cows, generally destined to the market. Farmers produce *chile* for the market using slash and burn techniques combined with the use of industrial inputs. The farmers families generally have a series of small animals for home consumption: sheep, pigs, and poultry.

Forest Production. Forest are diversified and this permits the production of multi-flora honey and the persistence of hunting as a complement to farm-based production. In addition, people use other forest products, particularly *chicle* (gum) and wood.

Income. In terms of income, the average of focal area 1 is 33 pesos/day, including subsidies, gross income from sale of products and self-consumption. However, after a social stratification of the income, the result is that 72% earns between 0 and 1 minimum wage; 21%, the equivalent to one or two minimum wages; 6%, between two and three minimum wages; and 1%, between three and four minimum wages per day. Because of a more efficient use of the forest in the production of honey, the Maya make better income. Intermittent wage labor, mainly in the south and craft work of women ("*huipiles*") contributes to a varying degree to income.

Conclusions

The social assessment of the two focal areas leads to the following conclusions: (1) Though forests cover large areas of the corridor, forestry does not allow an income above the minimum wage due to the disorder prevailing in the production (overuse) and marketing of timber. The income of good honey bee producers is currently the most stable monetary income in both areas. Possibilities exist for timber and non timber forest products, as well as for the sustainable use of fauna, honey, archeological and natural values for eco-tourism and environmental services. (2) The region produces raw material that is processed in other parts of the country or abroad. For 10 years state and federal institutions as well as NGOs have intervened in programs intended to improve the use of natural resources, to process local production and to reforest. However, there is a lack of consistency of policies at the different government levels.

The Biological Corridors in Chiapas

Background and methodology

During January-March 2000, the social assessment (SA) of the Mesoamerican Biological Corridor program was carried out in the northeastern (Corridor A) and the southern (Corridor B) corridors of Chiapas. The SA methodology was highly participatory and in its application several NGO's played a role to carry out: community-level participatory planning exercises, consultation with civil society organizations (CSOs) in the CBs, interviews with key informants, and a review of relevant literature. The total universe of study is the U-shaped continuum of the two corridors within the state of Chiapas. Observations are offered at the level of each corridor. Profiles are provided of five Focal Areas, three of the five in Corridor A, and two of the three in Corridor B. Those profiles are based, in part, on over a dozen community-level samplings. It should be noted that the selection of communities and Focal Areas was intended to represent the environmental and, especially, the social diversity of each corridor, within the constraints of viability.

Naturally each Chiapanec corridor has distinguishing geographic features: Corridor B runs the length of the Sierra Madre while Corridor A is a much more diverse swath of highland and lowland forests and farmlands.[1] Socially, too, Corridor A is more complex; culturally, approximately three-quarters of the owners of the land are either Mayan or Zoque Indians, and politically, the communities are more divided. The population of Corridor B is largely mestizo . It is important to note that in Mexico Indian communities frequently have a semi-collective, or "social," tenancy of land (either in the form of "communal lands" or "ejidos"). Also, small rural property-holders (less than 10 hectares) – whether Indian or mestizo – may associate themselves to produce similarly semi-collectivized natural resource management units. Large private holdings coexist with mentioned forms of tenure in the Corridor A region; in Corridor B a small number of large plantation-style holdings are found.

Economically, Chiapas is classified among the four Mexican states suffering extreme poverty. The rural poor – and virtually the entire population of the Corridors – are "*milperos,*" few sell corn and beans though much of the population is (nearly) self-sufficient in at least the staple of corn. The traditional system (roza-*tumba-quema*), and its post-deforested variant (*roza-quema*) still prevails. The peasant productive system includes small animals (usually chickens, sometimes pigs), and a vegetable patch (*traspatio*). Sheep (cared for by women and girls) may supply wool, and less frequently, meat. Women and girls are usually responsible for wood collecting for fuel, and the traditional "women's work" of housekeeping and childcare.

The major source of income for the farmers in mountain regions is coffee (median holding, roughly 2-5 hectares); in the lowlands cattle-raising is an income-generating strategy (more associated with mestizo culture). Indian artisan production (weaving, embroidery, etc.) is a less profitable source of income – although it is a major strategy among women. Men often seek temporal employment outside the region, though permanent migration is still not a norm. Government policy has promoted of extensive cattle-raising (including the advance into virgin forest).. An experiment in radical conservation, a state-level ban on felling trees (1990-95), did not meet its objectives because it ignored the social implications.

Wooded commons and NTFP (fauna, mushrooms, edibles, herbal medicine) are usually an integral part to the functioning of social tenancy. However, they are in decline through strong deforestation linked to a complex of causes, ranging from the existence of commercial logging to the lack of investment in

[1] Corridor B, including protected natural areas "El Triunfo" and "El Sepultura", is considerably less degraded, environmentally, than Corridor A.
It is worth emphasizing that virtually all terrain in the two corridors is mountainous.

sustainable management. In spite of deforestation, the rural population – specially in the autochthonous Indian areas – still has specialized knowledge of local flora and fauna, forming an opportunity for the development of sustainable use alternatives.

Social organization in the Corridors is undergoing rapid change. The functioning of the peasant and often-Indian community is increasingly complicated, and even transformed, by divisions along religious and political lines.[1], among which the Zapatista armed insurgency plays a prominent role. While the influence of the peasant community as a unit of organization has declined in effectiveness in the Corridors' regions, social organizations have grown in number and importance. These groups, at local, regional and state levels, orient action and represent interests regarding production and marketing (particularly of coffee) and other areas (from land demands to human rights). Non-governmental organizations provide technical, financial, and other services to social organizations in the regions.

Virtually all actors in the Corridors are committed to increasing autonomy of local entities. Policies of empowerment of local government are coupled with plans for the creation of new municipalities. "Autonomy" is a demand of Zapatistas and of various civil society organizations – even if there is debate on the definition of the notion.

Socioeconomic profiles of focal zones

The Focal Areas defined during project preparation by employing biological criteria a preliminary evaluation of strength of local organizations– may be characterized in social terms, though sometimes that characterization is complex. Key considerations in this characterization, or incipient typology, are:

- Indian/mestizo attitude and knowledge base
- Old or recent settlement
- Predominantly coffee economy, cattle economy, or other
- Strength of social organization

The following Focal Areas are profiled in this social evaluation:

Area around Ixcán. The area is predominantly lowland and largely populated by Indians having come recently (within the last 20-30 years) from Tzeltal and Tzotzil communities of the Chiapas Highlands. Income is from coffee principally, as well as cattle; beans and other commercial crops follow. Social organizations function at the primary, secondary and tertiary levels[2].

Norte-Ch'ol. This intermediate-altitude zone, with forest reduced to patches, is populated principally by Ch'ol Mayans, with some recent colonization by Tzeltal and Tzotzil people. The coffee economy dominates; organic coffee is a successful strategy for some. No-till *milpa* has been successfully replicated by social organizations. There are civil society organizations at all three levels. There are sharp social divisions, including strong vigilante groups.

Norte-Zoque. In the area coffee is the principal income-generating crop. This zone is notable for featuring community-run forest reserves, greater commercial forestry than in other zones, and an experiment in carbon sequestration. Organization is principally at the local level, though at least two regional-level organizations are also present.

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[1] In the past 30 years various non-Catholic religions have come to claim some 20% of the population. Similarly, in the past 10 years various political parties – principally the left-leaning PRD and right-leaning PAN – have won municipal elections against the hegemonic party, PRI.

[2] Primary level organizations are community-based; secondary are regional; and tertiary are state-national level.

La Frailescana. This area, forming the upper part of the Pacific coast watershed, contains better-conserved highland forest, with a predominantly Mestizo population, dedicated to cattle, corn, as well as coffee. Organization is weak.

B-1 (Pico del Loro-Sierra Madre). This zone has a confined highland ecosystems extending into the Sierra Madre, which contains the highest peaks in Chiapas. It is a very strong coffee-growing area, although at the highest altitudes only potatoes and corn are grown. Sheep raising complements the peasant economy. Around Motozintla there is a strong and hegemonic social organization, and several first- and second-level alternatives, all expressing a clear option for organic agriculture.

Conclusion: constraints and opportunities to the sustainable use of natural resources

In general, one observes in the Corridors' regions processes of degradation of forests with wood-gathering occupying more woman-hours and hunting sharply declining in importance, increased erosion and the impoverishment of soils with declining production, income, and consumption levels, increasing water pollution and health problems. Population growth in general is approximately 4.5% annually and in the area of Ixcan it may be as much as double that.

Development policy and programs for the marginalized poor have tended to be changeable, misdirected, or unfortunate. Opening national forestlands to landless peasants and promoting extensive cattle-breeding furthered deforestation. Coffee production – potentially a remarkably benign product in environmental terms – is hampered by strong price fluctuations: price was below-production costs in the early 90s. Trade liberalization in the late 90s left most basic grain producers economically inviable and the government's political commitment to the peasantry virtually ended. Peasant migration to the cities and to the United States is increasing.

There are potentialities as well. Principal among them (though not universally present in the Corridors) are: (a) a rapidly deepening consciousness of the problems of environmental degradation, (b) successes in sustainable productive systems, (c) specialized Indian cultural knowledge, (d) social organizational capacity, (e) cooperative land tenure and associated social systems and (f) the capacity of many women to strategically direct knowledge and income toward family betterment.

The Biological Corridor in the Northern Coast of Yucatan

Background and methodology

The social assessment of the Northern Coast of Yucatan focused on the search for qualitative and direct information through participatory workshops in 12 localities of the Yucatan coast and its area of influence.[1] Results show that the Northern Coast of Yucatan is a socially, economically and ecologically complex region. It has a population of approximately 60,000 people, who make use of the multiple coastal ecosystems. There is a diversity of local users who live on a permanent, seasonal or irregular basis in close fusion of common and contradictory interests. These users utilize resources and ecosystems differently, based on schemes of responsibilities and rights acquired by tradition and formal right.

[1] Eight ports were studied during the Social Assessment (Sisal, Chuburná, Progreso, Chabihau, Santa Clara, Dzilám Bravo, Río Lagartos y Las Coloradas) and four towns (Tetiz, Chicxulub Pueblo, Telchac Pueblo y Loche). These 12 localities are municipalities and delegations located in the coast and in the adjacent zone at an approximate distance between 3 and 25 kilometers.

From a sociological and economic perspective, the coastal communities were the lifesavers for many farmers in their constant search for survival strategies since past decades (extraction of salt, copra, recollection of mollusks, crustaceans, scaled fish catch in lagoons and swamps). The Mexican state, and in particular the Yucatan State, thought of the Yucatan coast as the lifesaver during the period of the sisal crisis between 1978 and 1992. Fishery was one of the selected activities in the state diversification programs as a productive alternative for great part of the farmers, who demanded economic resources and job opportunities. The Yucatan coast is currently, and will continue to be, an essential region for the state's economy, mainly for the implementation of future plans and programs such as eco-tourism and traditional tourism.

Currently, the most important source of income for the majority of people in the coastal localities comes from fisheries in rivers and from the utilization of marine and lagoon resources in swamps, ponds and lagoons (shrimp, crustaceans, mollusks, and some scaled fish). For inland localities, the most important source of income is obtained from labor in the recently installed clothing assembly industry; or from the construction industry in the state's capital as well as from trading and from daily wage work.

The Northern Coast of Yucatan has basically a mestizo population. In the coastal ports, it gains new socio-cultural dimensions, since part of the population is composed of farmers who immigrated after the 70s and who possessed traditions of the agrarian culture that mixes up in close symbiosis with the fisheries culture under patterns of space appropriation mediated by the technology of the last three decades (outboard motors in ships, synthetic materials for fishing, compasses, telescopes and other).

Socioeconomic profiles and sub-regions

Three distinct zones can be distinguished in the 378 kilometers of the Yucatan coast: the western (Celestún to Sisal); the central (Progreso to Dzilám Bravo) and the eastern (San Felipe to El Cuyo).

The western zone. The main activities carried out in the western sub-region—with approximately 70 kilometers—are small-scale fishing and summer tourism (very intensive from March to April and from July to August). The ups and downs of fisheries, the extraction of salt and tourism influence activities such as commerce and services. Activities such as agriculture and livestock are not part of the economic basis; therefore, the primary sector focuses on fishing activities. The processes of the sisal work influenced this sub-region during several decades of the past century until its decline in the 90s.

The sub-region receives immigrant population from all the economic regions in the state, basically from the sisal and livestock zones.

The central sub-region. Industrial and riverside fishing is predominant in the central sub-region (especially in Progreso)—with approximately 150 kilometers. This port functions as the ruling body of the sub-region and the coastal region in general. The metropolitan processes influence the sub-region, with Mérida as capital of the state. Port infrastructure has been more developed in this sub-region, the same as construction industry, commerce and summer tourism. The latter demands community infrastructure of commerce and basic services for medium and high class proceeding from the state's capital.

The eastern sub-region. In the eastern sub-region—with approximately 145 kilometers—small-scale fishing, extraction of industrial salt and extensive livestock, which has increased rapidly at the expense of seasonal agriculture, are the predominant activities. This sub-region is influenced by the processes affecting the Mexican Caribbean because of its proximity to the state of Quintana Roo (commerce, flow of emigrants, tourism, among other).

Conclusion: constraints and opportunities for the sustainable use of natural resources

The Northern Coast of Yucatan is going through a series of problems closely related and linked to the use, management and administration of its coastal resources. The main problems that the region is facing are specific to its coastal condition and, therefore, of the sea/land inter-phase: dual influence of terrestrial and marine life modes, resources of common use and the mobile nature of several of its natural resources. One of the main current difficulties is the stand still of riverside fishing, the need to foster off-shore fisheries and implement and strengthen the fisheries sector regulation.

Reordering the fisheries sector and implementing programs of natural protected areas is one of the most difficult challenges in conservation and protection of natural resources and coastal ecosystems. Management policy in the Northern Coast of Yucatan needs to contemplate two demographic variables, which have directly influenced the social and economic structure of the region: the migration of population from inland localities (such as the Telchac, Tetiz, Chicxulub Pueblo and Loche) and the immigration of population in all localities along the coastal line (Sisal, Progreso, Río Lagartos, Coloradas). The concepts of demographic and human pressure on the coastal ecosystems were perceived as follows during the meetings with the interviewees: "there are many fishermen, many ships, too much people fishing and it cannot be prohibited."

However, these concepts need to be analyzed through a historic perspective to re-scale human activities in order to overcome the one-dimension notion of the defacement and loss of biodiversity; that is, not labeling a collective individual ("men, humans or human activities") as the originator of the current environmentally damaged conditions. The use, access and control of natural resources and ecosystems have a very ample, general dimension and form part of the multiple social hierarchies (ethnic, class, nationality and gender).

The problems that people in the Northern Coast of Yucatan distinguish from their past actions (before 1994) to the current, could be sensed in the restrictions and limits of use of and access to natural resources. These were perceived in an ample context of "limitation" and not of "conservation or protection" of natural resources. In its entirety, the corridor region faces the problem of scarcity of coastal resources, the increasing abandonment of young people from farming activities and the increasing migration to urban centers (Cancún, Mérida, United States).
However, it is important to emphasize that the possibilities of the region are enormous in terms of availability of landscape resources and human resources that could and should implement policies of integral management of coastal resources. The corridor region currently counts with the bases to reorient actions and to strengthen the social capital towards the integral management of natural resources. The main strategies for the Northern Coast of Yucatan are the strengthening of grassroots groups in community organization and management, the development of production alternatives oriented to sustainability and the integral management of the coastal zone.

Annex 12: INDIGENOUS PEOPLES DEVELOPMENT PLAN

1. Background

The Mesoamerican Biological Corridor seeks to deal with, in a natural and socially participatory manner, one of the greatest challenges facing the defense of biodiversity: maintaining diverse landscapes among protected natural areas in order to avoid their isolation in the long term. To achieve this goal, productive projects for the sustainable use of biodiversity (including training and marketing) will be promoted, together with the reorientation of public expenditure in ways that are compatible with the conservation of biodiversity. These strategic efforts will be enriched by: 1) a monitoring and evaluation system based on local and academic participation, which will provide feedback on the actions undertaken; and 2) the strengthening of multisectoral coordination mechanisms. As a result of the project, it is expected that an economically attractive natural resource management model can be maintained, that is compatible with – and favorable to - conservation.

The achievement of this objective depends, among other factors, on the promotion of economic and cultural behavior that is in accordance with the particular ecological and socio-cultural conditions in the Corridors. In summary, a set of "clean" economic activities must be achieved, which contribute to environmental conservation, are economically attractive for the population, and are especially respectful of indigenous cultures and peoples.

Indigenous and peasant communities and organizations are an essential ally in the search for sustainable development, understood in a social, cultural and ecological sense. This is because they constitute an important depositary of knowledge about nature, as part of their culture and world view. The project seeks to build alternatives based on this knowledge, for which important roles have been defined for local participation in the development of the project proposal (community planning, workshops, formation of state-level councils, training, sharing of experience), resulting in an implementation proposal based in great measure on the participation of the population.

A 39% of the total population of the Corridors is indigenous. Within the Corridors there are areas where the majority of the population is indigenous, as in the case of the Corridors of Northern Chiapas, in Campeche and in Quintana Roo. To ensure that indigenous peoples can participate actively in the project, measures have been taken in the project design to improve access to opportunities available to indigenous peoples in Mexican society. These measures, which are detailed in this document, are complemented by institutional commitments that go beyond natural resource conservation and include the areas of education, health and communication.

2. Legal framework on indigenous rights

The Constitutional basis that establishes the basic rights of indigenous peoples in Mexico and from which the validity of secondary protective regulations is derived, is the chapter on individual guarantees, particularly articles 4 and 27. The first paragraph of Article 4 acknowledges that Mexico has a multicultural composition, originally based on its indigenous peoples; and to protect them it states that, first, the development of their languages, cultures, uses, customs, resources and specific forms of social organization will be promoted, and second, they will be guaranteed effective access to justice. Similarly, and acknowledging that most of these indigenous peoples live in rural areas, it states that in agrarian suits and proceedings directly related to questions of land ownership and tenure, their legal practices and customs will be taken into account.

In paragraph nine of Article 27 of the Constitution, dealing with the capacity to acquire ownership of lands and waters in the country's territory, clause VII states that the legal existence of indigenous settlements is acknowledged; these settlements may be organized according to two schemes with direct consequences on land tenure: communal and *ejidal*. Both the communal and *ejidal* settlement will have a General Assembly as a type of organization; this will be the settlement's Supreme Agency. It will also have a Commissariat which will be the Representation Agency, an organization similar to that of any civil or mercantile society. Each scheme will be given the ability to own lands but is given different treatment. The essential difference is that, although in both schemes they can organize to transmit the use of their lands, only in the *ejido* system can they transmit the ownership of their lands.

Based on the aforementioned Article 4 of the Constitution, and with the purpose of complying with the objectives of promotion established therein, in 1948 the National Indigenous Institute (INI) was created, as a decentralized public agency of the federal government, assigned to the Secretariat of Social Development, whose purpose is precisely to promote the protection, defense and development of indigenous peoples, through programs aimed at dealing with the basic needs of indigenous communities at economic, legal, cultural and social levels, as well as to support the organizational processes of indigenous peoples so that they can be dealt directly with different authorities in the public, social and private sectors. Currently, INI has established a network of regional offices to deal with specifically indigenous issues.

Moreover, at international level, among other related treaties, the Mexican Government has ratified Convention 169 of the International Labor Organization (ILO) regarding the rights of indigenous peoples, and in June 1992 Mexico signed the Agreement on Biological Biodiversity which, in various precepts (preamble, and articles 8 and 10) acknowledges, first, the close dependence of traditionally indigenous ways of living and the use of biological resources; second, it recognizes and the parties agree to respect, preserve and maintain the knowledge, innovations and practices of indigenous communities and places that entail traditional lifestyles that are pertinent to the conservation and sustainable use of biological diversity, to promote their broader application with the approval and participation of those who possess this knowledge and these innovations and practices, as well as to promote the equitable sharing of benefits deriving from the use of this knowledge and these innovations and practices.

3. Baseline data

During the project preparation phase, information from the Indigenous Profiles project was used (www.sedesol.gob.mx) and additional information was collected and generated regarding land tenure, social structure and the use of resources in the project's focal areas. Different methodologies and scales were used: the community scale through workshops, community mapping and the detailed analysis of use patterns; the micro-regional scale through the interpretation of aerial photographs and interviews with key informants; and the regional scale through the analysis of satellite images, interviews with key informants and collection of census data. A large amount of information has been generated which will be integrated in a GIS during project implementation and updated through the application of the monitoring and evaluation protocol.

The high level of cultural diversity in southern Mexico, and its multicultural composition, are broadly represented in the project area by Mayas, Tzeltzales, Tzoltziles, Lacandones, Tojolabales, Choles and Zoques, as well as indigenous people who have immigrated from other states such as Zapotecos from Oaxaca, Purépecha from Michoacán, and Totonacos from Veracruz. Finally, Mayan-speaking refugees from Guatemala have settled there. An approximate estimate of the Corridors' total indigenous population is 432,128 inhabitants (Table 9).

Table 9. Total and indigenous population in the Corridors

Corridor	Total population	Indigenous population	Groups
Northern Yucatán	87,538	3,628	Maya
Quintana Roo	72,413	50,000	Maya
Campeche	58,000	40,000	Maya, Chol, Tzeltal
Northern Chiapas	669,241	200,000	Chol, Zoque, Tzeltal, Lacandón
Southern Chiapas	420,000	38,500	Mame, Cakchiquel Tzotzil, Tzeltal

At the level of focal areas, even within the same Corridor, there are marked differences in the indigenous proportion of the total population (Table 10). Data at community level show the great cultural diversity within some focal areas (Xpujil-Zoh Laguna) and homogeneity in others (La Montaña).

Table 10. Total population and indigenous population in focus areas

Focal area	Total population	Indigenous population	% indigenous	Indigenous groups	Phase
Yucatán					
Hunucmá Area	24,462	1,874	7 %	Maya	1
Progreso Area	43,892	277	1 %	Maya	2
Center-East Area	4,280	387	9 %	Maya	2
Eastern Area	14,904	1,090	7 %	Maya	1
Quintana Roo					
Carrillo Puerto	16,125	8,000	50 %	Maya	1
Southern J.M. Morelos	5,530	5,200	95 %	Maya	1
Campeche					
Xpujil – Zoh Laguna	10,000	5,000	50 %	Maya, Tzotzil, Chol, Zoque, Popoluca, Totonaco, Nahua	1
La Montaña	3,000	2,900	98 %	Maya	1
Chiapas, Northern Corridor					
La Cojolita	3,000	3,000	100 %	Lacandón – Chol – Tzeltal	1
Nahá – Metzabok	300	300	100 %	Lacandón	2
Ixcán	3,000	1,000	33 %	Maya	2
Chol Zone	68,623	50,030	73 %	Chol	2
Zoque Zone	41,158	13,833	34 %	Zoque	1
Chiapas, Southern Corridor					
Cintalapa	20,000	1,000	5 %	Tzotzil, Tzeltal	2
La Frailescana	20,000	1,000	5 %	Tzotzil, Tzeltal	2
Pico del Loro – Tacaná	96,725	4,373	5 %	Mame	1

4. Socioeconomic profile of focus areas

Quintana Roo

Southern José Maria Morelos focal area. Land tenure in the area is *ejidal*. The *ejidos* are generally small and with small populations (an average of 40 families) of Mayan origin, who immigrated to the zone from Yucatán in recent decades. Agricultural production is based on corn, backyard production and horticulture. Production is aimed mainly at family consumption. The *ejidos* are of recent creation, with a grant of less than 20 hectares per *ejidatario*. Due to changes in the agrarian law, many communities have opted to parcel out *ejido* lands. Giving priority to food production, areas used for forestry, if they exist, are few in number. To a significant extent non-logging forest products come from fallow areas. Residents supplement their subsistence economy with paid labor, temporarily migrating to the tourist zone of Quintana Roo.

The problem of low prices and market structure (middlemen) has halted the development of market-oriented productive alternatives, based on traditional use patterns. Added to these factors are deficient technical assistance and intermittent, infrequent training.

Felipe Carrillo Puerto focal area. Land tenure is predominantly *ejidal*. These are *ejidos* that were formed in the 1940s, using forests, and with large areas of land. In addition to the production of basic grains on individual parcels, *ejidatarios* carry out forestry activities, in some cases under a communal management scheme. Forestry production is the center of the economy of approximately 50% of residents. The others carry out family farming or work as paid laborers. The problems of the forestry sector are summarized in the following points:
Dependency on few species: the market does not recognize the value of species other than mahogany and cedar
Market structure: demand is unpredictable
Integration of production chain: basically supplies uncut lumber
Technical assistance: inadequate and intermittent

The population in some *ejidos* is mixed, with a significant proportion of non-indigenous immigrants from various Mexican states; other *ejidos* are inhabited by traditional Mayans and others by Mayans who have recently immigrated from Yucatán.

Campeche

Xpujil - Zoh Laguna focal area. Data from a sample of 4 *ejidos* out of the focal area's total of 29 *ejidos* (Table 11) shows the great diversity of indigenous groups within the focal area, many of them recent immigrants, especially from the State of Chiapas. These groups have found elaborate forms of collaboration. Through their social organizations, the population has also generated an important management capacity in light of diverse government authorities. This capacity also bumps against insufficient and frequently inadequate institutional supply.

Land tenure in the area is *ejidal*, generally parceled out. Recent *ejidos* are small in size. Here the principal activity is subsistence farming. Four *ejidos*, formed in the 1940s, are large in size, and are partly used for forestry activities under communal management schemes.

Table 11. Number of inhabitants and indigenous groups

Ejido	Number of inhabitants	Indigenous group
Mancolona	400	Tzeltal
Nuevo Campanario	254	Chol
Nuevo Conhuas	398	Nahua, Chol, Tzotzil, Maya Yucateco, Zoque, Popoluca, Totonaco.
Nuevo Becal	345	Maya Yucateco

Subsistence corn production is combined with the commercial production of chili peppers, with intensive use of agrochemicals. Other sources of income are livestock, handicrafts, and paid labor.

La Montaña focal area. In the area's 9 *ejidos*, 100% of the population speaks Maya. The parceling of the *ejido* area has not progressed in the area. The *ejidos* are collective: *ejidatarios* have the right to use the land and cannot sell it.

Communities are characterized by their lack of social differentiation. All families carry out subsistence farming. Their production is characterized by its high degree of diversification: basic grains, fruits, vegetables, honey, cows and smaller livestock, forestry activities and hunting. The high level of participation by women in production, as well as in *ejido* assemblies, is noteworthy.

Chiapas

Northern Corridor.

In the Northern Corridor the indigenous population has highly dispersed settlement patterns. It has the highest levels of illiteracy, 47%, even higher among women where the percentage reaches 63%. The production structure corresponds to the classic pattern of humid tropical regions: corn, coffee and cattle predominate. Areas used for forestry production are irrelevant. However, subsistence forestry activities are very important; out of 100% of the volume extracted, 83% is used for subsistence.

La Cojolita focal area. Three communities are related to this area, assigned by the Choles of Frontera Corazal as a community reserve. The other related communities Nueva Palestina (Tzeltal) and Lacanjá (Lacandón). Land tenure is communal; however, there are problems such as the overlapping of land titles that need to be resolved, beginning with studies on updating tenure and the establishment of suitable mechanisms for conflict resolution. The participation of women in decision making is rare.

Nahá-Metzobok focal area. The population in both communities in this area is formed by Lacandones, with communal land ownership. As in the case of La Montaña, the communities are characterized by a lack of social differentiation. Agricultural production is highly diversified and is used for subsistence.

Chol focal area. Land tenure is communal (30%), parceled *ejidos* (40%) or private (30%). Productive activities include basic farming, coffee production, cattle raising and honey production. The area is relatively well communicated and there is strong social differentiation. 30% of the total population is urban. 50% carry out primary activities. Paid labor contributes substantially to family income.

Zoque focal area. Land tenure is communal (20%), parceled *ejidos* (40%) or private (40%). Productive activities include basic farming and livestock-raising.

Sierra Madre del Sur Corridor

Cintalapa focal area. Productive activities include basic farming and livestock-raising. Land tenure is principally *ejidal* or private.

Triunfo – Sepultura focal area. The economy is focused on coffee and livestock production. Land tenure is principally *ejidal* or private.

Pico de Loro – Tacaná focal area. In this area the most important economic activities are coffee production, the production of basic foodstuffs, and livestock-raising. The tangible results of organizational processes have been the occupation of an important niche in the international organic coffee market. Land tenure is principally *ejidal* or private.

5. Regulation of land tenure

In the focal areas in Quintana Roo and Campeche there are no significant conflicts among *ejidos*. In all cases, they have legal documentation to support their land tenure. In the focal areas in Chiapas, especially in La Cojolita, there are several problems due to the lack of defined agrarian rights, which have been the cause of conflict in recent times. Due to the problem's complexity, a gradual, participatory strategy will be adopted to carry out the social assessment and contribute toward solving priority agrarian problems. In the Lacandona Community, support will be given not only to the performance of diagnostic studies on the land tenure situation, but also consultancies, training and studies will be financed to contribute to solving the problems found. These activities will be implemented using an eminently technical focus, without siding with any of the litigants and in a manner that is compatible with competent authorities.

Except for this case, land tenure problems do not affect the proposed actions in the rest of the focal areas included for the first phase of the project. Neither is there any reason to assume that the implementation of the project will affect the agrarian rights of the communities.

6. Indigenous participation strategy

The Mesoamerican Biological Corridor Project promotes the sustainable use of natural resources in several southern states of Mexico. To achieve its goal, the project seeks the active participation of all social stakeholders, especially in rural population. That is why during the social assessment and design of the project, participatory workshops were carried out as well as interviews and surveys to key informants, based on a representative sample of each focal area. In addition, during project preparation Corridor Councils were formed in the states of Quintana Roo and Campeche; these Councils count with the participation of representatives of producers organizations. The Councils will be main points for implementation of activities during project execution in the four states.

Since the size of the population in Quintana Roo is very big to incorporate in the social assessment, local workshops with men, women and youth were carried out, and surveys were conducted with selected samples of different sectors of the population. In Campeche, emphasis was given to conducting interviews and surveys to key informants; information obtained from participatory workshops carried out recently by experts was also used. In Chiapas, workshops were carried out in the focal areas (Zona Zoque, Zona Chol and Ixcán in the Northern Corridor; in Sierra Madre del Sur in the focal areas Pico del Loro – Tacaná and La Frailescana) with the participation of producers organizations and key actors. In all cases, proposals and local preferences were obtained to adjust the contents of the Indigenous Peoples Development Plan (IPDP).

Based on the recommendations of experts in the area, a more gradual approach has been adopted for focal area La Cojolita. In addition to consultation activities already undertaken during preparation, further participatory planning and studies will be promoted during implementation. Depending on priorities expressed by local communities, these follow-on activities may include a) specific studies about land tenure that would facilitate the pacific resolution of existing conflicts; and b) the development of plans of sustainable use of natural resources. Due to the different levels of social capital among the indigenous communities and organizations in the focal areas of the project, a typology has been elaborated. This typology will be used to adjust the activities of the IPDP depending on the organizational strength. Table 12 provides a detail of the criteria used and the actions to be carried out according to the organizational level of the community or social organization.

Table 12. Organizational level of indigenous communities and social organizations

Level	%	Criteria of organizational level	Actions
Low	70%	Isolated assemblies Pressure over resources Low educational level Low management level Low self-esteem manifested by ethnicity (not in all cases) Lack of public services	Workshops with communities and organizations Topics: Objectives of MMBC Importance of community or social organization Importance of natural resources Improvement of services Strengthening of traditional knowledge Basic training (planning, accounting)
High	30%	High organizational level Educational level (technical specialists) Control over natural resources Experiences in marketing Strength of ethnic identity Access to government funds Access to public services	Training according to type of proposal: Technical Marketing Information Sharing experiences and training among organizations

7. Strategic lines

Definition of strategic lines was based on workshops, consultations, interviews with key informants, etc. Indigenous communities will have access to all the project benefits, the same as the rest of farmer population. However, in order to ensure such access and achieve active participation of indigenous communities in the different components of the project, the following strategic lines were defined:

Strengthening of productive practices of indigenous populations compatible with conservation, including production of aggregate value from local raw material. Among others, the project will support agro-

forestry and forestry management activities, including production of chicle, apiculture, vanilla and organic coffee, etc.

Strengthening, together with the participant institutions of the National Corridor Council (Ministry of Environment, Natural Resources, and Fisheries; Ministry of Public Education; Ministry of Communications and Transportation; Ministry of Health; Ministry of Agrarian Reform; Ministry of Agriculture; Ministry of Social Development and Ministry of Commerce and Industry), of mechanisms to facilitate access of indigenous groups to the different programs, with special attention to education and health. In addition, the implementation of specific efforts toward providing indigenous groups with information about the Corridor project, operational procedures and application of funds. In cases where agrarian and land tenure conflicts hinder the sustainable management of natural resources and biodiversity (the Lacandona, for example), it will be essential to work in coordination with the agrarian authorities in order to neutrally promote mechanisms and tools for the resolution of agrarian conflicts (mapping, legal studies, etc.).

Organizational strengthening, advice for the preparation of local funds and accounting, legal training. Along this line, support will be provided for the consolidation of producer organizations involved in sustainable activities with technical assistance and training on self-management systems and several technical aspects.

Specific efforts on evaluation and monitoring will ensure indigenous participation. Along this line, support will be given to active participation of social organizations and civil society in the processes of monitoring and evaluation and to the ample dissemination of results.

8. Institutional commitments

The Ministries participating in the National Corridor Council have signed the Institutional Coordination Agreement to assist priority regions. The focal areas where the project will concentrate its sustainable development efforts are part of the priority regions and can count with the specific assistance from the institutions. The institutions are committed to ensure equitable access of the population to government programs, including indigenous population. The institutions have committed to give special attention to the effective access to the programs from indigenous populations.

The institution responsible for the indigenous policy in the Government of Mexico, the National Indigenous Institute (INI), possesses institutional capacity and infrastructure in the focal areas of the project and has committed to support the strategic lines of the IPDP. Among its commitments, the Institute will provide spaces in its radio programming in indigenous languages and will participate in the areas of training and organizational strengthening.

9. Institutional capacity to execute the plan

During project preparation, strengths and weaknesses of institutions working in the focal areas were evaluated (government, NGOs, social organizations). In general there is a need to strengthen the institutions.

Most part of government programs are carried out within the economic-productive sectors. The most favored sectors are livestock, agriculture or direct support through the payment of labor for any beneficial activity for the community. The relationship between communities and government institutions is sometimes affected by the untimely application of resources. At the local level the population has many ideas to adjust the programs to local/regional conditions and is looking forward to a much more active institutional presence and with more resources.

The Project has foreseen the additional training of staff of the institutions at the state and federal level, in order to increase the access of indigenous people to the programs, strengthen the programs that benefit the sustainable use of natural resources and to increase the participation of indigenous populations (men and women) in the definition and implementation of their projects. A specific strategy is to favor in focal areas the coordination among the institutions that signed the Institutional Coordination Agreement. This will allow to design programs that are consistent and in coordination with the specific regional conditions.

The Project considers of critical importance to establish effective mechanisms for communication. A communication strategy for the project has been prepared, and it specifically considers the translation to indigenous languages of the project information and the utilization of radio with programs in indigenous languages as project dissemination and discussion means. In general, the capacity of INI is considered to be sufficient, although it will require strengthening in planning and sustainable use aspects.

10. Monitoring and evaluation

The participation of representatives from indigenous communities and social organizations in the monitoring and evaluation of project activities and social, economic and ecological changes is considered an integral part of the IPDP. Special attention will be given to ensure compliance with the timing of sub-projects' implementation, as well as with responsibilities and agreed actions. Responsibilities and agreements will be recorded in minutes of meetings and periodic reports.

In addition, external assessments conducted by specialists will be carried out to record progress and difficulties during implementation of sub-projects implemented by indigenous communities and organizations.

The results of monitoring and evaluation activities will be reported and disseminated among social organizations and civil society, including the translation of key documents to relevant indigenous languages.
The outcomes of the first phase of project implementation will supply information to update the IPDP in order to further promote successful activities and improve of those that were not so successful.
11. Activities and costs

Activities by strategic line will be supported according to the typology designed in the project, considering the organizational level of indigenous communities and their organizations. Tables 13 and 14 detail the activities to be carried out during the first four-year phase of the project and the estimated budget.

Considering the special conditions of the focal area La Cojolita (high level of social conflicts and land tenure problems), during the first year of project implementation there will be additional activities carried out in this focal area. The activities will involve participatory planning to adjust the global strategic lines of the plan and to adapt them to the particular conditions of the area. The conclusion of these activities will be a condition for the application of investment resources in La Cojolita.

During the Project's Mid-Term Review, an update of the strategic lines of the IPDP will be carried out. This update will take into account the experience during the first phase of the project--considering the need to count with updated data of the social conditions—and based on later consultations with resident communities of focal areas of phase 2. Delivery of the revised plan, satisfactory to the Bank, will be a condition for the application of resources to focal areas of phase 2.

Table 13. Schedule of activities by strategic line

Strategic Lines	Activities 2001	Activities 2002	Activities 2003	Activities 2004
Strengthening organizational capacity	Sharing experiences Preparation of community technical tables Planning, management and administration of projects, accounting Training in planning	Preparation of community technical tables Management and administration of projects, accounting Sharing experiences	Preparation of community technical tables Planning, management and financing, accounting Sharing experiences	Participatory planning Organizational strengthening Planning and management of projects, accounting Sharing experiences
Promoting sustainable production and conservation	Training for sustainable production Assessment of local use patterns Diversifying production Feasibility studies Stabilization of production of basics Reforestation with native species Dissemination of conservation experiences	Stabilization of production of basics Training on: agro-ecology, forestry management, agro-forestry Organic production Training for technic certifiers of organics Production of aggregate value Reforestation with native species	Stabilization of production of basics Training on: agroecology, forestry management, agroforestry Promoting micro enterprises Projects on agroecology, forestry, tourism Dissemination of conservation experiences Reforestation with native species	Promoting organic production Diversifying production Promoting apiculture Training, support and management Marketing
Ensuring and improving access to programs	Agree with institutions provisions for that matter Translation of procedures to indigenous languages Ample dissemination through mass media communication Specific workshops about programs using translators Neutral conflict resolution mechanisms for agrarian problems	Agree with institutions provisions for that matter Translation of procedures to indigenous languages Ample dissemination through mass media communication Specific workshops about programs using translators	Agree with institutions provisions for that matter Translation of procedures to indigenous languages Ample dissemination through mass media communication Specific workshops about programs using translators	Agree with institutions provisions for that matter Translation of procedures to indigenous languages Ample dissemination through mass media communication Specific workshops about programs using translators
Ensuring participation in monitoring and evaluation	Workshops about the objective of monitoring and evaluation Monitoring and evaluation workshops	Monitoring and evaluation workshops	Monitoring and evaluation workshops	Monitoring and evaluation workshops

Table 14. Estimated Budget (US dollars)

Strategic Lines/Activities	2001	2002	2003	2004	Total Cost US$
Organizational strengthening	45,000.00	45,000.00	45,000.00	45,000.00	180,000.00
Participatory planning workshops	8,000.00	8,000.00	8,000.00	8,000.00	32,000.00
Training of community promoters	6,000.00	6,000.00	6,000.00	6,000.00	24,000.00
Workshops for project planning	10,000.00	10,000.00	10,000.00	10,000.00	40,000.00
Technical training	6,000.00	6,000.00	6,000.00	6,000.00	24,000.00
Sharing experiences	15,000.00	15,000.00	15,000.00	15,000.00	60,000.00
Sustainable production	71,500.00	71,500.00	71,500.00	71,500.00	286,000.00
Technical advice to productive projects	8,000.00	8,000.00	8,000.00	8,000.00	32,000.00
Advice on administration of productive projects (men and women—craftsmanship, etc.)	5,000.00	5,000.00	5,000.00	5,000.00	20,000.00
Advice to form micro credit revolving fund	6,000.00	6,000.00	6,000.00	6,000.00	24,000.00
Productive projects	23,500.00	23,500.00	23,500.00	23,500.00	94,000.00
Assessment and follow-up to productive projects	9,000.00	9,000.00	9,000.00	9,000.00	36,000.00
Restoration	10,000.00	10,000.00	10,000.00	10,000.00	40,000.00
Reforestation	10,000.00	10,000.00	10,000.00	10,000.00	40,000.00
Access to programs	40,000	40,000	40,000	40,000	160,000
Institutional commitments	10,000	10,000	10,000	10,000	40,000
Translation	10,000	10,000	10,000	10,000	40,000
Dissemination	10,000	10,000	10,000	10,000	40,000
Workshops	10,000	10,000	10,000	10,000	40,000
Monitoring and evaluation	10,000	10,000	10,000	10,000	40,000
Workshops	10,000	10,000	10,000	10,000	40,000
TOTAL	166,500	166,500	166,500	166,500	666,000

Annex 13: Corridors and Focal Areas

1. SELECTED CORRIDORS

Based on workshops with experts, consultancies and meetings with stakeholders, five corridors have been selected (Figure 1). These corridors are considered of crucial interest for maintaining connectivity between areas with pristine biodiversity, generally protected areas of internationally recognized importance (Table 15), and have been designated as priority areas by the National Commission for the sustainable use of Biodiversity (CONABIO). Together, the corridors encompass a wealth of ecosystems.

Table 15. Protected areas connected by the corridors

State	*Corridor*	*Protected area*	*Extension (ha)*	*Ecosistems*
Campeche	Sian Ka'an - Calakmul	Reserva de la biosfera Calakmul	723,185	Selva baja caducifolia, mediana subperennifolia, vegetación acuática, vegetación secundaria
Chiapas	Selva Maya – Zoque	Reserva integral de la Biosfera Montes Azules	331,200	Selva alta perennifolia, mediana subcaducifolia, bosque de pino-encino, jimbales, sabana
		Reserva de la Biosfera Lacantun	61,874	Selva alta perennifolia
		Reserva de la Biosfera "Selva del Ocote"	48,140	Selva alta y mediana perennifolia
		Monumento natural "Yaxchilan"	2,621	Selva alta perennifolia y vegetación ribereña
		Monumento natural "Bonampak"	4,357	Selva alta perennifolia
		Área de protección de flora y fauna "Chan Kin"	12,185	Selva mediana y alta perennifolia
		Área de protección de flora y fauna "Cascadas de Agua Azul"	2,580	Selva alta perennifolia
		Área de protección de flora y fauna "Metzabok"	3,337	Selva alta perennifolia
		Área de protección de flora y fauna "Na-Ha"	3,833	Selva alta perennifolia
	Sierra Madre del Sur	Reserva de la Biosfera "El Triunfo"	119,177	Bosque mesófilo, bosque de coníferas, selva alta perennifolia
		Reserva de la Biosfera "La Sepultura"	167,310	Bosque lluvioso de montaña y de niebla, selva caducifolia, selva baja caducifolia y chaparral de niebla
Quintana Roo	Sian Ka'an - Calakmul	Reserva de la biosfera Sian Ka'an	528,148	Selva mediana baja y subperennifolia, selva baja caducifolia, manglar, tintales, marismas, petenes, dunas costeras
		Área de protección de flora y fauna Uaymil	89,118	Selva baja inundable, selva mediana, manglar
Yucatán	Corredor Norte de Yucatán	Reserva de la Biosfera de la Ría Lagartos	47,840	Selva baja inundable, selva mediana, manglar, dunas costeras
		Reserva de la Biosfera de la Ría Celestún	59,130	Selva baja inundable, selva mediana, manglar, dunas costeras
		Reserva Estatal de Dzilam	61,707	Selva baja inundable, selva mediana, manglar, dunas costeras
		Reserva Estatal de El Palmar	50,177	Selva baja inundable, selva mediana, manglar, dunas costeras

Deforestation in the corridors during the last decades has been intense, resulting in generally fragmented forests. Deforestation in the corridor areas has been quantified, as a part of project preparation activities, through interpretation of the satellite images from the seventies to date. Gathered information provides a valuable baseline for measuring change during project implementation.

2. SELECTED FOCAL AREAS

Within the broad corridor areas, a choice has been made to concentrate efforts in *focal areas*. Focal areas have been selected on the basis of opportunities and immediate needs for conservation and sustainable use of biodiversity, considering also aspects of social organization and available information. In the terrestrial corridors, they conform areas with an important forest vegetation cover, presenting the last opportunity to maintain or restructure connectivity between reserves. Table 15 lists general information on corridors, Table 16 presents information on focal areas and their proposed assignment to the two implementation phases.

Table 16. General information on corridors

Corridor	State	Number of municipalities	Area (ha)	Number of focal areas	Number of municipalities with jurisdiction in focal areas	Number of Communities (a)	Area (ha) (a)
Selva Maya - Zoque	Chiapas	25	1,397,797	5	8	35	216,282
Sierra Madre del Sur	Chiapas	12	660,713	3	7	15	229,808
Sian Ka'an - Calakmul (Quintana Roo)	Quintana Roo	3	1,200,000	2	3	30	595,000
Sian Ka'an - Calakmul (Campeche)	Campeche	2	1,000,000	2	2	25	300,000
Norte de Yucatan	Yucatan	8	245000	4	8	15	245,000
Total				16	28	120	

Note: The definition of the focal areas in terms of area and number of communities is based on priority-setting analysis undertaken during preparation. Given the demand-driven nature of several project activities (including participatory planning and pilot sub-project), during implementation the actual degree of presence of the project in focal areas will depend on beneficiaries' response. Therefore, the numbers in the table must be interpreted as indicative.

Table 17 - Focal areas

Corridor	Focal Area	Area	Number of communities	Year 1-2-3-4-5-6-7
Selva Maya – Zoque (North Chiapas)	La Cojolita	51,297	5	---------
	Ixcan	23,010	7	-------
	Nahá - Metzobok	27,489	1	-------
	Selva Chol	65,574	16	-------
	Selva Zoque	48,912	6	---------
Sierra Madre del Sur (South Chiapas)	Pico del Loro	86,529	10	---------
	Fraylescana	73,966	3	-------
	Cintalapa	69,313	2	-------
Sian Ka'an – Calakmul (Quintana Roo)	Carrillo Puerto	461,000	16	---------
	Area Sur de José Ma. Morelos	134,000	14	---------
Sian Ka'an – Calakmul (Campeche)	La Montaña	120,000	7	---------
	Zoh Laguna – Xpujil	180,000	18	---------
North Yucatan	Oriente	45000	6	----------
	Centro Oriente	36000	3	---------
	Progreso	55000	3	---------
	Hunucmá	85000	3	----------

Focal areas cover areas ranging between 20,000 and 460,000 hectares, the larger areas being located in Campeche and Quintana Roo where some ejidos have more than 50,000 ha extension. Focal areas in the Yucatan corridor are described in Annex 14.

3. BIODIVERSITY SIGNIFICANCE, THREATS AND OPPORTUNITIES IN FOCAL AREAS

An analysis has been undertaken of biodiversity significance, opportunities and threats for its sustainable use at the focal area level. The results are exemplified here with respect to the focal area Xpujil – Zoh Laguna in Campeche. The analysis of threats to biodiversity in this Corridor builds on, and expands the analysis undertaken by WWF in the context of its initiative on the root causes of biodiversity loss.The full results of the analysis (in Spanish) can be consulted at the internet site: http://freecenter.digiweb.com/pages/cbm.

Table 18 - Sian Ka'an - Calakmul, focal area 1: significance, threats and opportunities.

Biodiversity Significance	This is a critical area, as it connects between the northern and southern block of the Calakmul reserve. Strong changes in forest cover have occurred. At present four villages with considerable forest coverage remain, that make up two connectors: one at the west of the reserve (the ejido Conhuás), and one at the eastern side (ejidos Álvaro Obregón, Nuevo Bécal and 20 de Noviembre). The area between both connectors has been subjected to strong deforestation.
Threats	Cultivation of chilli peppers, for which high forest is cut and burned The indiscriminate use of insecticides, affecting bee-keeping Excessive extraction of wood from large forest masses and a tendency to clear-cut fragmented forests
Root Causes	Colonization pattern of small ejidos Government programs favoring chilli production and use of insecticides Lack of policies to guide land use considering ecological principles Persistence of inefficient land-use systems Lack of diversification of production Many ejidos have only small areas for common use Small forested areas are no attractive economic alternative; impoverished forests (valuable woods already extracted) unattractive for conservation Internal ejido organization is inadequate to manage forest effectively and to comply with market requirements Inadequate organization of commerce causes a lack of economically attractive, forest-based activities
Recommended strategies	Diversification and intensification of production systems to reduce pressures on the forests Increase the length of fallow periods by increasing the number of consecutive cropping cycles through the use of cover crops Stabilize forested areas by:

	• Making activities based on the forest economically attractive • Exploiting a larger array of species • Increase the value of products (added value) Stimulate local groups to manage fauna rationally Stimulate forms of tourism that require strong local participation Improve commercialization Strengthen the position of women in production
Opportunities	Existence of practices of agroforestry and sustainable agriculture The large ejidos with important forest resources have management experience Experience exists with the management of fauna and giving services to hunters Archaeological sites of huge potential exist People consider tourism as an additional source of income and an association of tourist guides has been formed Farmers' organizations exist In the area several NGOs and research institutes have a large experience Women's groups exist that manage local credit schemes Positive experiences exist with the participative policies conducted by the technical team of the reserve
Actions to be stimulated	Intensify milpa agriculture using green manures and cover crops such as *Mucuna deeringianum* and experiments with alternative species Establishment of polycultures integrated with reforestation Fallow enrichment Strengthen the operation of nurseries Strengthen the local capacity of forest management Stimulate practices of low impact extraction of forest products Economical evaluation of forest resources Participate in an integral scheme of training ; Exchange of experiences with other groups of farmers
Main-streaming	Reorient government support to chilli pepper production Reorient government practices concerning titles of ejido lands Adapt programs of sedentarization of milpa agriculture to local circumstances; Reorient the enforcement activities of protection of the environment

An exercise of analysis of rootcauses confirmed that in all corridors multiple threats to biodiversity exist. However, their relative importance varied between corridors (Table 18). Overall weighting indicated that training and institutional coordination are of utmost importance for biodiversity conservation.

Table 19 - Root causes of biodiversity loss in the corridors. A scale from 0 to 3 was used to indicate if a rootcause does not (0), little (1), considerably (2) or very much (3) influence in biodiversity loss.

Root cause of loss of biodiversity in corridors	*Yucatán Coastal Zone*	*Sian Ka'an – Calakmul*	*Chiapas-North*	*Chiapas-Sierra Madre del Sur*	*SUM*
Legal framework deficiencies	3	3	3	1	10
Lack of effective enforcement	1	3	3	1	8
Lack of economic incentives for conservation	0	2	2	2	6
Lack of planning capacity, outreach, knowledge and education	3	2	3	3	11
Increased pressure on natural resources through population growth	3	3	3	2	11
Deficient operation of markets	2	3	3	3	11
Dependence on natural resources because of persistent poverty	2	3	3	2	10
Lack of institutional coordination	2	3	3	3	11

Sectorial approach to planning	3	2	3	2	10
Limited information for planning	1	1	2	2	6
Urban development	3	1	1	1	6
Industrial waste	1	1	0	0	2
Land conflict	0	2	3	2	7
Use of biocides	1	2	1	2	6
SUM	25	31	33	26	115

4. MONITORING

During project implementation, the impact of landuse on biodiversity in the corridors, focal areas and communities will be assessed according to the protocol of monitoring and evaluation, by use of remote sensing techniques, sampling and by participatory mapping of land use at the community level (17). The information will permit the steering of the planning of landuse and mainstreaming through the use of matrixes that resume the strength of threats at ecosystem, species and gene level.

Annex 14: Northern Yucatan Corridor

A. Background Setting and Issues to be Addressed

The coast of the State off Yucatan is emerging from a rural coast to a place of industrial and commercial activity, including major fishing, shipping, and tourism enterprises and extensive supporting infrastructure. Untill recently, these activities have had little concern for biodiversity, resulting in degraded wetland habitats and disturbed coastal dynamics. The original continuity making up a biological corridor popularly known as the **"The Emerald Coast,"** is threatened.

By creation of nature reserves - Celestun and El Palmar in the west and Bocas de Dzilam and Ria Lagartos in the east - biodiversity is conserved at the extremes of the Yucatan Coast. In the center, economic activities have to be adapted for compatibility with the conservation of natural resources. To make reality such a combination is the goal of the Yucatan Coastal Corridor.

The physical elements of the Corridor are shown diagrammatically in **Figure 2**.

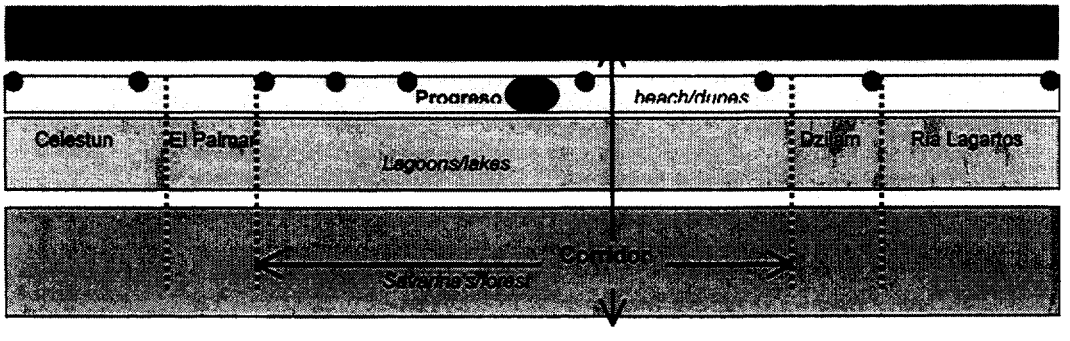

Figure 2. Physical elements of the Yucatan Coastal Corridor. The proposed Yucatan corridor project is targeted on the **unprotected** part of the coast and landinward, as shown by the lateral and vertical arrows in Figure 2. The width of the corridor is pragmatically defined by the southern limits of the coastal municipalities.

The Corridor covers around 115,000 has. Added to this should be the coastal waters of the sea extending offshore to a depth of around 50 meters, in order to include the area fished by artisan fishermen.

The Yucatan Coastal Corridor is unique, globally, in its assemblage of habitats, species, and ecological processes and in the way the coastal communities make use of wetland resources. Some significant features are: 1) the Yucatan coast borders a land without rivers - the Yucatan Peninsula - whereby all the fresh water flow to the unique and extensive (378 km) coastal wetland/estuarine ecosystem is via springs from underground sources, not rivers or overland flow; 2) the biotic community of the sand dune system along the coast is unique, globally; 3) several species of global interest inhabit the Corridor; (e.g., American Flamingo, three sea turtles, crocodile, 33 endemic species of invertebrates, and 130 international migrant bird species); 4) important international ecotourism is centered on wetlands and beaches of the Corridor; 5) the wetlands and near shore marine ecosystems influence the

international waters of the Gulf of Mexico and the Caribbean; and 6) the Ria Lagartos reserve is internationally recognized as a UNESCO Biosphere Reserve and as a Ramsar Wetland; the Celestun reserve is a candidate for the same recognition.

The common landscape characteristics and main existing land uses in the parallel zones of the UYCC are summarized in Figure 3.

Figure 3. Land/water uses in the Yucatan Coastal Corridor.

landscape zones	characteristics	land/water uses
Near coastal waters	- Shallow sea over the continental shelf to a depth offshore of 20 m. - Resources include octopus, grouper, and many other species - Benthic area has abundant seagrasses and some rock	1. Marine fishing 2. Off-shore sea port and shipping 3. Water recreation 4. Drainage and feeding of coastal lagoons 5. Discharge of urban effluent 6. Sea water intake for solar salt production and aquaculture
Beach and dunes	- White sandy beaches and dunes, both variable in width - Dunes 2-3 m above sea level - Unique highly diverse dune vegetation, - Specific fauna, including many birds and protected animals such as sea turtles	1. Fishing ports (13) and Navy base/harbor (Yucapeten) 2. Human settlements (17) and a major town (Progreso) 3. Holiday homes, tourism and beach recreation 4. Coconut plantations 5. Minor horticulture and livestock
Coastal Lagoons and cienagas	- Mangrove lined lagoons and ciénagas, varying in salinity - Wetland system fed by . Rain, . Freshwater springs, . Sea water through sea inlets and dune percolation - Maybe more than 3km wide	1. Artisanal fisheries 2. Aquaculture 3. Hunting (e.g. ducks) 4. Land reclamation (roads, residential development, etc.) 5. Rowing course (Progreso) 6. Marina at Progreso (planned) 7. Solar salt production 8. Ecotourism
	- Mangrove forest - Savannas (wet grasslands) - Low semi-deciduous forest - Springs and ponds surrounded by freshwater flora *(petenes)*	1. Cattle ranching 2. Collection of forest products (wood, leaves, herbs, etc.) 3. Hunting (e.g. deer) 4. Limited agroforesty and agriculture

The region has a population of approximately 60,000 people. Currently, half of this population depends on fisheries activities in the coastal lagoons and along the coast. For inland localities, the most important source of income is the recently installed clothing assembly industry , construction industry, trading,agriculture and animal husbandry.

The social situation in the corridor has experienced dramatic changes in the last decades:

- Before 1950 there were few people and rich fisheries, primarily used for local consumption.
- Between 1950-1970 roads and urban centers were constructed and fisheries cooperatives were founded.
- 1970-2000 experienced development of commercial fishing, improved processing, port construction, tourism and migration to the coast.

From a sociological and economic perspective, the coastal communities were the last resort for many farmers in their constant search for survival strategies in past decades (extraction of salt, copra, recollection of mollusks, crustaceans, scaled fish catch in lagoons and swamps). The Mexican state, and in particular the Yucatan State, thought of the Yucatan coast as the lifesaver during the period of the sisal crisis between 1978 and 1992. Fisheries were one of the selected activities in the state diversification programs for the farmers. The Yucatan coast is currently, and will continue to be, an essential region for the state's economy.

In this context, the Corridor needs a systematic plan to integrate the conservation and sustainable use of biodiversity and natural resources. This will only be possible with the participation of the stakeholders and the change of public policies at the federal, state and municipal levels.

Causes and effects of ecological change in the area have been assessed (Table 16). Scoring results suggests that roadways, settlement growth, livestock ranching, the absence of policies to integrate the increasing population productively in a diversified economy and insufficient land use planning and management are major threats to biodiversity. Results reflect that the Northern Coast of Yucatan is going through a series of problems closely related and linked to the use, management and administration of its resources

Table 20 - Estimated impact of human interventions on biodiversity in the UYCC based on current policies and practice.

HUMAN INTERVENTION	SCALE OF ADVERSE IMPACT ON BIODIVERSITY							
	Affecting sea defense	Loss natural resources	Affecting hydrology	Affecting water quality	Reducing size habitats	Affecting flora & fauna	Obstructing bioconnectivity	SCORE
1. Land use								
1.a Public works								
- Roads		3	3	1	2	2	3	14
- Ports	1		1	1	2	1	1	7
1.b Private land use								
- Settlement growth	1	1	1	3	3	3	3	15
- Landfill		1	2	2	3	1	3	12
- Salt works	2	1	1	1	3	1	1	10
- Agriculture and agroforesty				1	1	1	1	4
- Aquaculture			1	1	2	1	1	6
- Livestock/cattle ranching		2	1	2	2	3	2	12
- Holiday homes, hotels, etc.	3	1		2	3	1	3	13
2. Govt. policies -								
- No limitation of in-migration	1		1	2	3	2	3	12
- No control of land use	1		1	3	3	3	3	14
- Groundwater extraction		1	1	2		1		5
- (deficient) Waste disposal		1		3	1	3	2	10
- (deficient) Fisheries control		3				3	1	7
- (deficient) Coastal defense	3	1	1	1	1	2	2	11
3. Private actions/effects								
- (over)fishing and hunting		3		1		3	2	9
- destruction of mangrove		3	2	2	3	3	3	16
- collection of forest products		1			1	1	1	4
- pollution of water and soil		3		3	1	3	2	12
- ecotourism activities		1				2	1	4

1 = limited or potential, indirect adverse effect (threat) *2 = moderate adverse effect* *3 = severe negative effect*

B. BASELINE - RESULTS OF PROGRAMS TO DATE AND OTHER PROPOSED NEW PROGRAMS

Conservation efforts have concentrated on creating and managing the five nature reserves – four in the Corridor plus the offshore Alacranes Reef (in Yucatan jurisdiction). At the state level there have been efforts to organize integrated management of the coast; e.g., a comprehensive coastal management program was drafted for the State, by a group of experts in the late 80s and updated in the mid-nineties. Projects have been applied to make resource use sustainable (fisheries, agriculture), however, efforts have been too isolated. Yet progress has been made in legislation and in individual environmental initiatives in the different areas of the project.

C. PROJECT DESIGN FRAMEWORK

As a general approach and to create guiding principles for future interventions in the UYCC aiming at nature conservation, the following steps will be taken:

- ***Design and Monitoring, testing and unification***

1) From the start of the restoration stage the impact of all actions taken should be baselined, monitored, and evaluated.
2) Testing means that successful results obtained from restoration trials in a pilot area can be used to undertake restoration in similar areas of the corridor.
3) Unification implies taking measures to ensure that local users of the restoration area be informed about, and be closely involved in, the restoration process to create an early sense of ownership and guardianship.

- ***Restoration of Biological Diversity***

1) Remove the a-biotic obstacles that have been causes of degradation of the various habitats such as restricted water flows, water salinity and water pollution; removing a-biotic obstacles may speed natural self-regeneration. The existing program by the state wetlands committee will be strengthened.
2) Assist recovery of biotic conditions by controlling pollution and replanting mangroves, reforestation, etc.
3) Fragmented research and actions need to be integrated into an overall "Emerald Coast" conservation strategy and action plan that takes into account the interests of a multitude of stakeholders, including local communities, land owners, fishermen, businessmen, common people, and politicians.
4) The principles used for nature protection in the official reserves should also be made applicable to the corridor, through consensus building and creating commitment through vision, information, dialogue and hopefully "win-win" decision making.

- ***Sustainable Use of Biological Diversity***

1) Adopt and execute, in close consultation with user groups, "best practice" methods for resource management for the fisheries sector (fishing rules, techniques and quotas) and for cattle ranching, agriculture, forest management, etc.

DESIGN OF THE PROJECT

In order to organize the Corridor Project efficiently, it is necessary to select strategic Focal Areas within the UYCC for concentration of Project interventions. It is proposed to create two tiers for Focal Area selection: 1) four areas by geography, and 2) five areas by theme.

- The intention behind this selection is to support actions of sustainable development in the corridor areas closest to reserves in the first phase of the project (4 years), and focus this component on the central part close to Progreso in the second phase (also 4 years).

Proposed areas of physical intervention

To assist restoration and conservation of biodiversity in the UYCC, areas of desired intervention were identified. Intervention support is judged most needed in the following areas:

- *Water resource management and hydrology*
- *Waste management and pollution control*
- *Habitat restoration and conservation management*
- *Sector-specific natural resource management (notably in agriculture, agroforestry, livestock and fisheries/aquaculture sectors*
- *Ecologically oriented regional land-use planning and management*

The first two categories largely aim at restoration and improved, conservation oriented, management of the abiotic environment, being nature's primary life support system and thus a condition *sine qua non* for biodiversity. Interventions in the first two categories are largely the domain of the public sector and require Government initiated action. Actions under the last three categories require intimate co-operation between the public and private sectors and should notably involve the local resident and business communities in the UYCC. Under the fifth category actions are grouped aiming to create a mosaic of land uses and rules for human activities to create sustained co-existence of people and biodiversity.

Support Services and Project Management

A number of service activities will be needed to support the physical interventions described above. These activities will include at least the following items:

-- Communication. Cross-sectoral discussion groups and workshops of stakeholders (fishermen, ranchers, developers, agencies, tourism, shipping, etc.) should be organized for Focal Areas and around recommended Focal Themes.

-- Education and awareness. Intensive public awareness campaign coupled with targeted awareness exercises to build support for the Corridor program.

MONITORING AND EVALUATION

For the project as a whole a monitoring and evaluation system has been developed, which will be applied in the Yucatan corridor, taking into account specific aspects, related with its coastal characteristics. A few examples are given below:

1) Indicator species status: Turtles, flamingos and other keyspecies of international significance (endangered, endemic, seasonal migrants from other countries).
2) Hydrology: Number of operational springs and inflows in UYCC, using silicate analysis; salinity gradients; flow rates of water in wetland basins.
3) Dune ecosystem conditions: Length and width of dunes restored by rebuilding, replanting; condition of vegetation (density and species composition; number of faulty *espigones* (groins) removed or replaced; effect of controls on building location.
4) Water quality: Dissolved phosphate/nitrate amounts in key locations; presence of organic toxics ; event monitoring for oil and chemical spills; waste disposal.
5) Overfishing: Index of catch by species and units of effort particularly of shrimp and clams (baseline exists
6) Forest cover; reduction in cleared areas of forest (baseline needed); number of hectares converted to sustainable use .
7) Mangrove conservation: area covered with mangrove forest.

Table 21 - List of possible interventions

The following interventions are considered important for the Yucatan Corridor.

Intervention	Detailed Activity	Design and Monitoring	Mainstreaming	Sustainable Use
1. Water Resources Management and Hydrology	Management of Fresh Water	Monitoring Corridor design Modeling of water flow and nutrients in cuencas Survey of pollutants in spring discharges in Focal Areas	Inventory and strategy to clean springs (work by seasonal labor program)	Improve water use practices by farmers in Northern Yucatan
	Hydraulic improvement	Monitoring of improved flow and biotic connectivity Seasonal salinity gradients in Focal Area basins	Converts in roads	
	Manipulation of seawater entrance/exit into wetlands	Workshops: users, government, science) on basin management Monitoring		Evaluation by community groups of marine water entrance (by tide gates)
2. Waste Management and Pollution Control	Urban waste management	Inventory of dumping of fish waste, by-catch and biocide use. Ecological guidelines for sewage effluent, including feasibility of tertiary treatment in stunted mangrove forests	Improved design program for home cesspools, pits, and septic tanks	Projects for solid waste disposal (e.g., recycling of fish processing wastes; improved design for trash/garbage dumps) Pilots for community level waste management and biofilters
3. Habitat restoration and conservation management	Restoration of wetlands flora	Strategy development and project design for planting Monitoring	Headstart planting of mangroves in key areas (use seasonal labor force)	Selective planting of trees in petenes (use seasonal labor force)
	Beach/dune management	Design for model dune restoration program Monitoring of progress	Create effective set of controls for beachfront management	Pilot for rebuilding, replanting dunes (use seasonal labor force)
	Restoration of forest/savanna fringing habitats	Monitoring	Design of restoration projects (using seasonal labor)	Replanting by communities
4. Sector Targeted Management	Species protection	Monitoring of charismatic species	Diligence in protection of crocodiles Design of system to mark power wires to prevent flamingo contact	Intensified beach patrols to protect nesting turtles Protection and management programs
	Management of fishing	Guidance on improvement in fishery rules Monitoring	Technical/social projects of alternative employment for displaced fishermen	Pilot studies of alternative employment schemes (recycling of fish wastes, aquaculture, cottage industry, etc.)
	Control of livestock ranching	Diagnosis of effects of ranching on wetlands environment (pollutant types, concentrations, and effects) Monitoring	Proposed management controls on livestock ranching (including agro-chemicals; waste management)	Proposed alternatives to current ranching (e.g., deer and pheasant ranching, environmentally friendly agroforesty, etc.)
	Management of industry in wetlands	Survey of industry in wetland basins Assessment and consensus on impacts of industry and needed management Monitoring	Assessment of expansion potential for sustainable uses of basins	Support to "Model Farm" for aquaculture including pilot studies of small-scale sustainable alternative uses (e.g., oysters, mussels, clams, and brine shrimp), training, extension and facilitation of leases and UMAs

Intervention	Detailed Activity	Design and Monitoring	Mainstreaming	Sustainable Use
5. Ecological land use planning and management	Need for land use planning and management	Map all present land uses (housing, commercial, industrial, natural areas, infrastructure) Prepare analysis of ecologically disturbing land uses (annotated damage map) Monitoring	Recommend prohibited uses in private and public water and land areas (including the Federal Zone) to protect wetlands and beach/dune system Mark off zones for particular uses (housing, hotel, commercial, aquaculture, etc.) and indicate permitted uses in each zone (including types and densities of use) Recommend rules governing uses (e.g., waste disposal) Recommend controls on infrastructure (routes, standards for emplacement, etc.)	
	Cadastral studies for focal areas	Identify and map private holdings where conservation may be needed		
6. Service Functions	Capacitating		Training and/or briefing exercises for government staff (including municipal officers) Targeted training (and technical advice) for creators of sustainable projects	Targeted training of potential resources managers and technicians in the communities, particularly focusing on coastal management and community organization
	Awareness	Monitoring of success	Mass media (television, print media) Event coverage (public gatherings) Showings (film, video, live theater) Notices, posters, etc.	

Annex 15: Communication Strategy

Background

A wide range of cultures and a significant biodiversity characterize the area of implementation of the proposed project. Within the Mexican MBC operational frame and in each of the five selected areas, several organizations, groups and stakeholders from the public sector, NGOs, academia, and private sector share a common work environment. While each party represents different interests, sets different goals, and pursues a different agenda, one of the unwritten objectives – and challenges – of the Mexican MBC project is to promote the flow of information and common understanding among the different local groups and between them and the decision makers.

Because of its socially and environmentally complex nature, and in order to allow coordinated planning, conflict resolution, and knowledge and information sharing, the design of the project includes a comprehensive communication strategy at different levels of interaction. The preliminary concepts are summarized below, and the complete version is available in the Project's files.

International context

Taking into consideration the special characteristics of the Mexican MBC project, the implementation team will coordinate with the other Central American countries to establish a clear identity, promote an international image, and raise awareness through a series of specific activities. These include Workshop with the other countries' representatives to develop a common message and a strategy. Within the overall framework of the MBC initiative in the sub-region, an effort will be made to assess the state of the art and to provide a common, international branding of the MBC.

Regional context

The corridors span four states in the Southeastern Mexico: Yucatan, Campeche, Quintana Roo and Chiapas (hereafter referred to as "the region"). While internally heterogeneous and diverse, the four states of the region share many characteristics: globally important biodiversity, large numbers of indigenous inhabitants, cultural richness, high proportion of people living in rural areas, unresolved problems of infrastructure and services, high incidence of poverty, important protected natural areas, and traditional agriculture and tourism as main economic activities. The regional identity is mainly based on cultural and ecological factors.

While there exist interesting attempts to promote regional communication and integration (e.g., the Mundo Maya initiative by SECTUR and a number of regional fora organized by the state governments), research institutions with regional coverage (e.g., El Colegio de la Frontera Sur and the Sistema de Investigación Benito Juárez), and NGO networks (e.g., Red de Organizaciones del Sureste para el Desarrollo Sustentable), there is no established mechanism to promote information and communication at the regional level of all the actors involved in the Mexican MBC.

State context

Each of the states in which the proposed project operates has a specific social and political dynamic. The understanding of this dynamic provides the framework for the implementation of the communication strategy. Issues such as centralization of decision making at the State Government, poor communication between the grassroots and decision makers, insufficient co-ordination between federal and state policies

have to be considered when it comes to communication materials and contents design. In Chiapas, were the conflict with the EZLN continues unresolved, special care on messages design will have to be taken into account. The final beneficiaries, the rural population depending on natural resources for subsistence and income generation, have little knowledge of the region as a whole. Communication materials will have to include cultural and geographic references meaningful to the target audience (e.g., in indigenous communities there are traditions and believes related to nature that are important to use as communication tools). Given the cultural context, a further challenge for the communication strategy is to draw an image of development that includes sustainability and gender. In the project area at least five different mayan languages are in use (zoque, chol, tzeltal, maya peninsular, lacandon). The communication strategy will be implemented by specialized NGOs with strong grassroots connections and knowledge of the social and cultural background.

Media and communication at regional level

As of yet only national newspapers provide adequate coverage for common information, since no state news agency covers the four states, and attempts of some NGOs and projects to produce regional technical publications and bulletins have remained isolated and scattered. By the same token, there is no coverage of the region as a whole. Separate state broadcast companies cover only state and national events. Only national TVs, as Televisión Azteca and Televisa, provide adequate coverage. Electronic media, Internet in particular, are becoming increasingly more important and are likely to play an important role in the future. To date, however, connections are not yet sufficient and reliable enough to allow efficient coverage.

Design of the communication strategy

The communication activities of the MMBC will be implemented at three levels of action: (i) international and national linkages, including international coordination with the Central America Biological Corridor; (ii) specific linkages between biological corridors within each state and protected areas; and (iii) awareness-raising and information of the public at large.

Within these three levels of action, the project's communication strategy will be implemented in cycles of four phases: (i) positioning of the MMBC; (ii) promotion of the MMBC and development of the project at the level of each biological connector; (iii) extension of the project within the same biological connector; and (iv) evaluation and follow-up of the project's activities.

Objectives at regional level

The communication strategy for the MMBC aims to: (i) position the MMBC at regional level; (ii) promote biodiversity in development planning and institutional policy; (iii) encourage exchange of experiences on sustainable management of biodiversity; and (iv) facilitate coordination at regional, national and international levels.

Characterization of the audiences

A typology of target audience profiles, taking into consideration details about primary activity, decision-making level, kind of interaction with other actors, access to information, interests, income, age, sex, and nationality, has been built during project preparation (project file).

Communication strategy

The main general elements of the communication strategy of the MMBC are reported below. Based on these general elements, a specific communication strategy for one of the corridors, Sian Ka´an-Calakmul, has been prepared (project files).

Phase 1 – Year 1.

Primary Audience/Segment 1: Corridors' Coordinators

- Regional integration workshop for the coordination group and participation in the regional bulletin, web page and email network. Specific objective: Improved knowledge of project design, implementation, characteristics of each connector, and relevant actors at regional level.

Primary Audience/Segment 2: State Committees

- Promotional and informative video, triptych, bulletin, web page and email network. Specific objective: Improved understanding of the regional impact of the project.

Primary Audience/Segment 3: State and Federal Government

Bulletin, web page, meetings, press releases, TV presentations, informational folders and triptychs. Specific objective: Improved understanding of project principles and objectives among the federal and state representatives of the official sectors in the states covered by the project.

- Bulletin, web page, meetings with promotional video, informational folders, triptych, email network, posters. Specific objective: Increased favorable opinion about inter-sectoral coordination.

Primary Audience/Segment 4: NGOs participating in the Project

- Bulletin, web page, meetings, press releases, TV presentations, informational folders and triptychs. Specific objective: Increased project understanding within the representatives of the civil society organizations of the states covered by the project.

Primary Audience/Segment 5: Coordination GEF-World Bank

- Web page, meetings and update notes for decision makers of the World Bank and GEF. Specific objective: Increased project understanding within relevant officials.

Secondary Audience/Segment 1: Researchers

- Bulletin, web page and articles in scientific magazines. Specific objective: Increased project understanding by researchers whose work is relevant for the biological corridor.

Secondary Audience/Segment 2: Coordination in Central America

- Bulletin, web page and meetings between teams. Specific objective: Increased information exchange between MMBC and the Central America Biological Corridor.

Secondary Audience/Segment 3: Urban population between years 15-45

- TV presentation (news, week-end programs), press releases and radio campaigns in urban public between years 15-45. Specific objective: Improved information and understanding of the concepts of ecological reserve and biological corridor. General development of a favorable position towards project supported activities.
- Radio campaign with details about each corridor's strategy. Specific objective: Increased project understanding of rural public in the areas of MMBC activities.

Outputs

- **Bulletin TOL CHE** – Official information bulletin of the MBC project, released quarterly in 2000 copies.

- **Radio Campaign** – Eight spots of thirty seconds each for eight months through Red Estatal de Radios, INI broadcasters, private broadcasters and IMER, in Spanish and indigenous languages.
- **Promotional Videos** – Four promotional of 3" to 5" and four of 20" through private local networks and national broadcasting and cable companies.
- **Project Presentation on TV** – At least 6 panels, news , interviews on local and national TV networks.
- **Press conference** –First press-conference: project objectives, components and outputs; second press-conference: design and implementation of the pilot corridor (Sian Ka'an-Calakmul); third-press-conference: follow-up on the pilot corridor activities; fourth press-conference: actions for the implementation of the other corridors.
- **8 press releases**– The most relevant project information will be made available periodically.
- **Inserts in magazines** – Monthly project activities update through an insert in one of the four magazines selected with national coverage. Size according to the project phase for its positioning.
- **Poster and triptych** – 5000 posters with slogans used in the radio campaign and promotional spots on TV; 3000 triptychs.
- **Informational folders for decision makers** – 1000 informative manuals about the project, participating institutions, environmental policies at national and international levels, a folder with informative sections, and a directory about relevant project actors.
- **Regional forum** – Two regional fora to build multi-sectoral coordination among relevant actors.
- **Interactive WEB Page** – Updated information and feed-back about the relevant aspects of the project.
- **Electronic mail network** – Regular electronic mail network for decision makers.

Phase 2 – Year 2-4

This phase will: (i) promote the integration of biodiversity in the planning and development of institutional policies; (ii) facilitate the exchange of experiences about sustainable management of biodiversity; and (iii) facilitate coordination at regional, national and international levels.

The audience is classified according to the same typology of phase 1.

Phase 3 – Project expansion – After year 4

In this phase there will be a re-design of the communication strategy, starting again with the strengthening of the Project's image, changing the tone and form of the messages to contents that convey achievements, outputs and evaluation of concrete results. The strategy will expand its communication channels and promote the expansion of the Project.

Phase 4 – Monitoring and Evaluation

This phase is included in each annual process, and it corresponds to the methodological process of impact evaluation of the communication strategy.

Objectives at State Level

The communication strategy by state corridors aims to: (i) position the corridors within the rural communities and stakeholders within the area of influence of the project, in particular those located in the focal areas; (ii) promote biodiversity in development planning at the State and municipal levels; (iii) promote adoption of sustainable practices within the rural communities in the area of influence of the project; (iv) facilitate social participation in the development of the project cycle; and (v) encourage co-ordination among sectors involved in project implementation.

A first, specific communication audit and strategy has been developed for the Sian Ka'an Calakmul corridor. This strategy will be used as a reference for the remaining corridors.

Communication strategy for the Sian Ka'an-Calakmul Corridor

The Sian Ka'an-Calakmul corridor spans two states, four municipalities and four focal areas. While the corridor offers a wide range of potential natural resources, practices can be improved for sustainability and biodiversity conservation (e.g., subsistence agriculture, natural gum, organic honey production, ecotourism). The target audience at communities are mainly Mayan communities with an average literacy of three years of primary school.

Other specific communication strategies

Communication Strategies in the Corridors in Yucatan, and Chiapas will be developed during the first year of project implementation. Methodology for the production of these strategies is available in the project files.

Regional and state levels of the communication strategy overlap but do not duplicate effort. The regional strategy assures that an average of relevant information is available for the whole project, while the state strategies are focused on supporting the implementation of the project components in each area.

The two tables below provide a summary of the key elements of the communication strategy at the regional and state level (Objective, Audience, Activities, Output, Frequency, and Coverage).

Table 22 Summary of communication strategy - Regional level

Objective	Audience	Activities	Output	Frequency	Coverage
Official and relevant information of the MMBC available for all stakeholders and institutions in South eastern Mexico in a periodic basis	All segments of primary audiences for regional strategy and Segment 1/Secondary Audience	Design and production of an informative material, establishment and management of a data base for printed and electronic distribution, establishment of a core of contributors. Development of a protocol for authorization of contents	Bulletin TOL CHE Web page Email network	Quarterly 2000 copies Regular electronic mail network for decision makers. Weekly updated information and feed-back about relevant aspects of the project	2000 institutions and persons, in Southern Mexico, D.F., C.A., and USA. 200 persons participating in the e-mail network. Web page, globally access
Positioning the image, objectives and geographic scope of the MMBC	All segments for primary audiences	Design, production and distribution of printed materials for outreach and image positioning	Poster of the project Triptych Institutional video	5000 posters with slogans used in radio and TV promotional 3000 triptychs 25 copies of institutional video	Distributed national and international (USA and C.A.)
Increasing support by public and decision makers for project implementation and its components.	Segment 3/ Secondary Audience Segment 1/Secondary Audience Segment 3/Secondary Audience	Production of video materials. Database of media contacts National PR with State broadcast for donation of time. PR with TV program producers and journalist. Organization of Press conferences Production of Spanish radio spots	3 Project Presentation on TV/year (State TV) TV promotional spots Articles in National Newspapers Radio campaign in commercial and public radio broadcasters in the four States and in Mexico City.	Radio campaign 3 months, 4 spots /4 days per week Four Promotional videos 30' produced in digital quality 2 press conferences/year 1 press releases/ every 3 months	More than 10 million people (TV and Radio) 200,000 peoples by newspapers
Dissemination of project experiences and success Increase awareness on environmental issues and sustainable development (After the year 2)	All the audiences	Articles and inserts in magazines of national distribution. Audiovisual record of project experiences. Image library Radio programs Edition and distribution of an annual report	Articles in magazines Videos of project experiences at the regional level. TV interviews Annual report Radio programs and spots on Environmental issues relevant to project region.	4 inserts/year depending on project positioning. 4 videos (1 every two years) The last video will close de project with an evaluation of impact. 2000 copies of annual report.	10,000 peoples 2000 persons in the region, Mexico City and Central America
Facilitate mainstreaming and decision makers involvement	Primary Audience /Segment 3	Production of written materials specific for decision makers at the State and National levels.	Information folders for decision makers	1000 informative manuals about the project.	1000 persons in the region and in Mexico City.
Monitoring an evaluation of communication strategy and its impact	All audiences	Elaboration of an Information System Baseline data Polls Focal groups	Monitoring reports annual and impact reports at the 4 year and 8 year	Annual Polls	

Table 23 Summary of communication strategy - State level

Objective	Audience	Activities	Output	Frequency	Coverage
Positioning the objectives the corridors at the State Level	Primary Audiences	Design and production of written materials in Spanish based on social and cultural context. Production of a promotional video for rural population and social organizations	In each state the type of written material may vary (e.g. Sian Ka'an-Calakmul will be Mural newspaper and a community version of TOL CHE) Promotional video translated in local languages	Quarterly, copies may vary depending of each state and corridor. 4 promotional videos in 5 local languages	Municipalities of each corridor. Communities of each corridor
Environmental awareness raising and dissemination of basic concepts of the project (e.g. Protected areas, sustainable management, biodiversity)	Primary Audiences Secondary audience/Segment 6	Production of radio campaigns Establishment of agreements with local radio broadcast (private and state) Establishment of a communication network in the region.	Radio campaigns translated in 5 languages and adapted for each corridor	4 Radio campaigns	Municipalities of each corridor. Communities of each corridor State coverage
Increasing support by Municipalities and facilitate sustainable development planning	Primary Audience/Segment 3 Secondary Audience/Segment 1 Secondary Audience/Segment 2	Elaboration of contents, design and production of a package of planning tools, sustainable alternatives and municipality information for state and municipal decision makers, to be produced from year 2-4	Municipal information package for each municipality where the project has activities	? Number of municipalities	Municipalities of each corridor. State and Federal decision makers
Support the adoption of sustainable use practices in communities	Primary Audience/Segment 1	Design and production of written and audiovisual materials translated in local languages and adapted to the social and cultural backgrounds	Videos on sustainable alternatives Booklets on sustainable alternatives Oriented to practice and supporting concepts	2 videos/year/corridor 3 written materials/year/corridor	Based on project coverage at field level.
Facilitate co-ordination and participation of institutions and NGOs	Secondary Audiences	Periodic project newsletter at State level, to be inserted in the regional bulletin and disseminated in a sub list of the email network.	Periodic update of project activities at the State level for stakeholders	Frequency to be determine by project activities and needs	Less than 100 persons/each corridor
Increase public support for environmental issues and project activities	Secondary Audiences	Press releases for local journals. Workshop with local journalist State TV spots and interviews Radio spots in Spanish	Newspapers articles Network of journalist TV spots Radio spots	1 article/month 2 TV spots / two months/year 2 radio spots in Spanish /three months/year	

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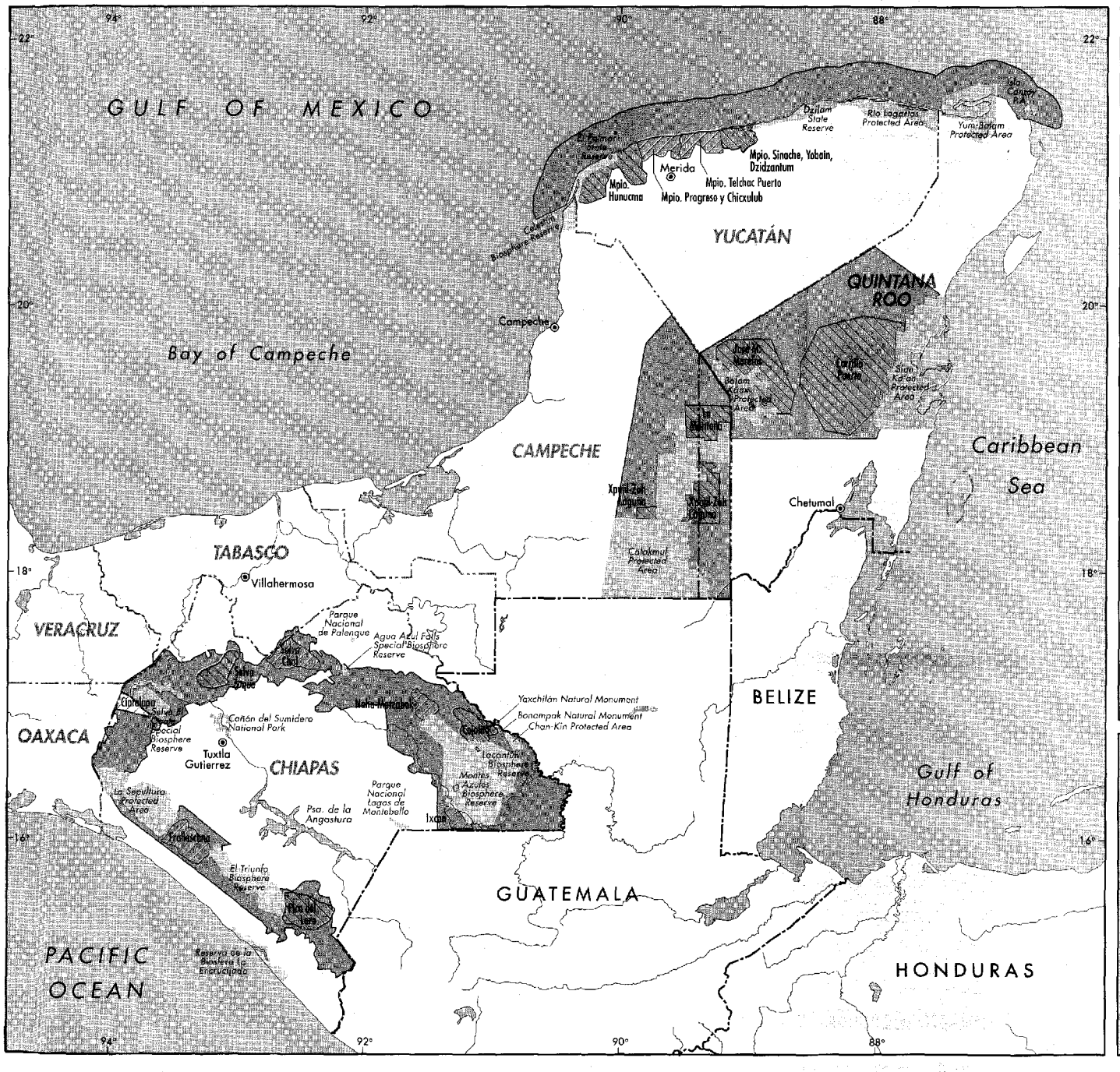

MEXICO
MESOAMERICAN BIOLOGICAL CORRIDOR PROJECT
CORRIDORS AND FOCAL AREAS WITHIN CORRIDORS

- CORRIDOR AREAS
- Mpio. Hunucma — FOCAL AREAS, PHASE 1
- Cintalapa — FOCAL AREAS, PHASE 2
- PROTECTED AREAS
- STATE CAPITALS
- RIVERS
- STATE BOUNDARIES
- INTERNATIONAL BOUNDARIES

0 50 100 150 KILOMETERS
0 50 100 MILES

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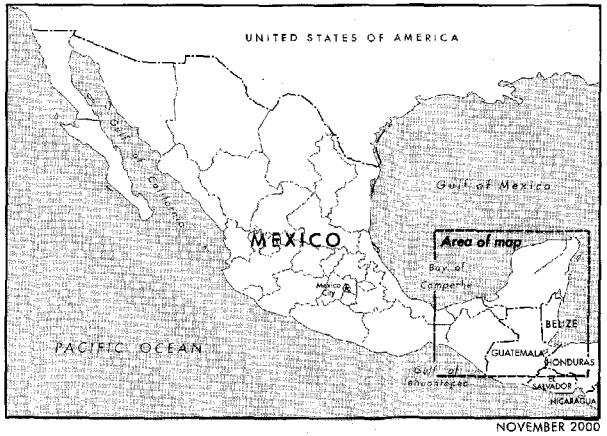

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