Global Environment Facility

GEF

Mohamed T. El-Ashry
Chief Executive Officer
and Chairman

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February 28, 2001

Dear Council Member,

The UNDP, as the Implementing Agency for the project, *MEXICO: Integrated Ecosystem Management in 3 Priority Ecoregions,* has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by the Council in July 2000 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by the UNDP satisfactorily details how Council's comments and those of the STAP reviewer have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.gefweb.org. If you do not have access to the WEB, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Mohamed T. El-Ashry

Cc: Alternates, Implementing Agencies, STAP

United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY (GEF)

12 January 2001

Dear Mr. El-Ashry,

Subject: **MEX/00/G31/A/1G/99 – Integrating Ecosystem Management in 3 Priority Ecoregions**

I am pleased to enclose the project for Mexico entitled "**Integrating Ecosystem Management in 3 Priority Ecoregions**" approved by the GEF Executive Council in July 2000. Also enclosed is the response to comments provided by the GEF Secretariat and Council.

As per paragraph 29 and 30 of the GEF Project Cycle, we are submitting this project to you for circulation to the Executive Council Members for comments and, subsequently, for your final endorsement.

Thank you in advance for expediting the review and approval of this project.

Yours sincerely,

Rafael Asenjo
Executive Coordinator

Mr. Mohamed El-Ashry
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PM

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PROJECT TITLE: INTEGRATED ECOSYSTEM MANAGEMENT IN 3 PRIORITY ECOREGIONS OF MEXICO

IA RESPONSE TO COMMENTS FROM THE GEF EXECUTIVE COUNCIL

Comments	Response from IA	Reference/Note:
CONSTITUENCY: SWITZERLAND		
What is the relation of this project to the Mesoamerican Biological Corridor?	The target sites in Oaxaca, Veracrux and Guerrero States, though in the tropics, are a considerable distance from the Mesoamerican Biological Corridor, which in Mexico, will extend across portions of Campeche, Chiapas, Quintana Roo, and Yucatán States. There is little remaining natural ecological connectivity between the Corridor and the sites, a factor that precludes their assimilation within it (an option considered). Various economic considerations foreclose expansion of the Corridor to incorporate the sites. Moreover, the initiatives will operate in different social and institutional landscapes, meriting the different conservation approaches advanced. However, the initiatives are complementary, and close programmatic linkages will be maintained between them.	See Paragraph 51 and Annex 5
How are national conservation priorities established, and what is their relation to the GEF portfolio?	The GEF's interventions in Mexico form part of a wider programmatic approach, developed with the active involvement of the Government of Mexico, other stakeholders and the GEF Implementing Agencies. The approach aims at demonstrating a cross-spectrum of conservation models, ranging from strict preservation, to bioregional scale management, in different ecological and social settings. The GEF will provide phased and sustained support for the implementation of these models, leveraging progressively deeper commitments to conservation from Mexico. GEF support to this effort reflects national conservation priorities identified in the Mexican Biodiversity Action Plan. The Plan was developed following an assessment of conservation needs across Mexico, including levels of alpha and beta diversity, representation within the conservation estate, degree of threat and other indicators, and review of viable conservation approaches. A range of conservation priorities have been identified, reflecting the biological, ecological and social heterogeneity of Mexico, which include, inter alia, the integration of conservation and development objectives at bioregional scales—a need addressed under this project.	See Paragraph 49
The conservation strategy lacks	Biodiversity conservation constitutes one of three overriding project objectives, the others	See paragraph 21, 23,

Comments	Response from IA	Reference/Note:
adequate definition. It is necessary to define biodiversity conservation objectives within the project frame.	being protection of forest carbon sinks and foreclosure of land degradation. The conservation objectives of this project are spelled out in the goals and immediate objectives, and are further qualified by impact indicators provided in the logical framework. The overall project goal is to: "protect the biodiversity and ecological functions of a representative forest biomes, within 3 globally significant ecoregions". The indicators for achievement of the goal include: maintenance of forest cover (80% of 2000 baseline maintained in 2009), and survival of forest dependent species. The immediate project objective is to scale up the focus of environmental management to the bioregional level, to ensure effective biodiversity protection across the three ecoregions. Several impact indicators have been identified to gauge success in this regard. A framework Bioregional Conservation Plan and Strategy will be prepared and continuously updated following land use capability determinations, and will identify large habitat blocks, corridors, patches and other critical areas that need protecting to safeguard biodiversity. These Plans and Strategies will inform development options. As bioregional management remains untested in Mexico, an organic approach to such management is necessary, to allow consensus to be built on site-specific strategies. The process for defining these is detailed in the description of Outputs 1 and 2.	25-34 and logical framework matrix on page 19-26
The information provided in the proposal does not allow an assessment of whether protected areas will be managed in a sustainable manner.	As described in the brief, the category of protected area to be created in each site will be defined in Phase 1 of Project Implementation, following further assessment. The costs of PA administration following project closure will depend upon the modality selected. However, the annual recurrent cost is likely to range between US$ 0,80 and US$ 1,20 per hectare. These costs will be covered by the Government of Mexico, but will be defrayed through user fees and other instruments introduced under Output 3.	See Paragraph 37, 41-43, 47
The risks identified in the log frame need to be analyzed within the brief.	The Risks Matrix has been expanded to address risks identified in the Log Frame.	See Paragraph 58
Are biodiversity friendly resource uses sufficient to achieve conservation goals? There is a risk of dispersing efforts and weakening impact.	The investment in modifying livelihoods planned under Output 4 while important will, by itself be insufficient to achieve conservation goals. Recognising this, a number of complementary interventions have been designed, aimed at creating the institutional architecture, policy and fiscal framework, and other conditions precedent to success. Landscape level management actions are being accompanied by site-specific efforts to create new conservation set asides, and by capacity building, social organization, awareness raising and advocacy activities to build constituencies for conservation. In order to focus impacts, the project will concentrate efforts on eight Pilot Areas, as described in the project brief (see also the attached maps). This will allow approaches to be tested and adapted on a small scale, before being applied widely in each region.	

Comments	Response from IA	Reference/Note:
Constituency: Germany		
Useful to know how this project relates to the "Direccion general de Restauracion y conservacion de suelos (DGRCS)" as the national co-ordination body for the Convention to Combat Desertification (CCD) and how experiences could be used in the further development and implementation of the National Action Program It is recommended that implementation arrangements and concrete procedures be identified during project implementation to exchange experiences between related projects. The role of the CHM and CONABIO might be emphasized in this regard	As focal point for the CCD, the General Directorate for Soil Conservation and Restoration (DGCRS) is preparing a roster of certified soil technicians, as well as a register of soil conservation techniques and practices per soil type. Following the Council Member's suggestion, meetings have been held between project staff and DGCRS to ensure that any relevant experiences be incorporated into the DGCRS' work, and that that work cross-fertilize project interventions during the implementation phase. The NGO: Institute of Ecology of Xalapa is participating in a regional GEF project through UNEP on managing subsoil biodiversity, with demonstrations at two sites: Los Tuxtlas, Veracruz and Calakmul, Campeche. Project activities will be systematically adapted to incorporate the results of the demonstrations, where feasible. CONABIO will play an active role in disseminating project lessons and best practices, particularly to the MesoAmerican Biological Corridor Project, where CONABIO is responsible for monitoring and evaluation. The Terms of Reference of the Project Technical Unit include the dissemination of information through CONABIO.	See Paragraph 51and 60
Constituency: France		
GEF is primarily financing capacity building, enhanced biodiversity knowledge and carbon sequestration studies within the technical assistance offered by the full scale project. The investment elements are only found within component 5, with a GEF contribution of 3.5 Million USD. Thus the remaining 12 million USD of GEF funding for technical assistance and capacity building, seem excessive	The costs of technical assistance and capacity building are not excessive, when factored over a period of 8 years and three regions (equating to US$ 637 500 per year per region on average). Moreover, the project aims at building capacity at several levels, from local communities to ejidos, local and State Governments and national institutions. Cost co-efficients for the initiative compare favorably with those for other similar conservation projects, including the MesoAmerican Corridor project.	
Constituency: Sweden		
It would be useful to know if the promising experiences in Mexico	Numerous studies of the carbon sequestering potential of Mexico's forests have been undertaken in recent years. Both the National Autonomous University of Mexico's	

Comments	Response from IA	Reference/Note:
with carbon sequestration on communal land through improved management of natural forest (described in Ecological Economics, 2000, 33) could be drawn upon.	Institute of Ecology and the Southern Border College have published studies on carbon sequestration potential within plantations and in old growth and secondary forests (De Jong et al. 1995, Ordóñez, 1997,1998 y 1999, Masera et al. 1995 y 1997). The project also builds on the findings of the specific study referred to, which focused on the same forest types being targeted for conservation, and documents best practices in and cost effective approaches for managing communal forests for the purposes of carbon sequestration.	

United Nations Development Programme

Project of the Government of Mexico

and the

Global Environmental Facility

Project Document

Integrated Ecosystem Management
in 3 Priority Ecoregions

United Nations Development Programme
Project of the Government of Mexico

Project Number: MEX/00/G31/A/IG (GEF)
Title: Integrated Ecosystem Management in 3 Priority Ecoregions
Short Title: IEMPE
Duration: Eight (**8**) Years (Phase **1**: 5 years; Phase **2**: 3 years)
Starting Date: 01 March 2001
Completion Date: 29 February 2009
Executing Agency: NEX-Secretariat of Environment, Natural Resources and Fishery (SEMARNAP)
Implementing Agency: Sustainable Regional Development Programme (PRODERS-SEMARNAP)
Project Sites: Chinantla (Oaxaca), Los Tuxtlas (Veracruz) and Montaña (Guerrero)
Primary Target Beneficiaries: Forest Edge Communities
Secondary Target Beneficiaries: Government (at all three levels), NGOs, Local private sector.
DCAS Sector/Sub sector: (20) Environment; (10) Environment policies, planning and legislation;
ACC Sector/Sub sector: (3) Natural resources; (12) Sector policy and planning.
Primary areas of focus: (3) Promoting environmental and natural resources sustainability; (17) Improvement of data and information on sustainable development.
Primary Type of Intervention: (2) Direct support; (9) Advocacy and strategy oriented.

Summary of GEF and Cost-Sharing Inputs in US$ as per attached budget

INPUTS

GEF	
1G-GEF Full Project Phase 1	**10,524,923**
1G-GEF Full Project Phase 2	**4,775,077**
1G-GEF PDFB	**350,000**
Total GEF:	**15,650,000**
Co-Financing	
Government Phase 1	**45,845,177**
Government Phase 2	**15,749,889**
Government-PDFB	**120,000**
Total Government Full Project	**61,715,066**
TOTAL	**77,365,066**

Brief Description: The project will protect biodiversity and sustain vital ecological functions within three globally significant ecoregions: the Tehuantepec Moist Forest, the Pacific Dry Tropical Forests, and the Sierra Madre del Sur Pine-Oak Forest. These ecoregions contain a range of forest communities including pine forest, pine-oak forests, cloud forest, tropical rain forest, tropical dry forest and mangroves, which provide habitat for native fauna, act as carbon reservoirs, and protect watersheds. Yet they face a suite of growing anthropogenic pressures that imperil their ecological integrity and functions. This situation is mirrored in other parts of Mexico and the Government has responded by founding the Sustainable Regional Development Program (PRODERS), which aims at integrating biodiversity conservation and development objectives in 24 discrete regions. Working at three sites: Chinantla in Oaxaca State, Montaña in Guerrero and Los Tuxtlas in Veracruz, the project will strengthen and cross-fertilize PRODERS by piloting integrated and replicable ecosystem-management models that conserve biodiversity and sequester carbon, while foreclosing land degradation. The objective is to establish the institutional framework and local capacities to manage a mosaic of biodiversity-friendly land and resource uses, including set-asides for biodiversity protection, compatible agro-forestry and silvo-pastoral systems, and ecological restoration. A number of cross-sectoral interventions are advanced to remove barriers to integrated ecosystem management. The Government of Mexico will then systematically replicate the management paradigm in other bio-regions.

Approved and Signed by:	**Signature:**	**Date:**	**Name/Title:**
Secretariat of Environment, Natural Resources and Fisheries (Sustainable Rural Development Programme)	_____	_____	Director
Secretariat of Environment, Natural Resources and Fisheries (Coordination of International Affairs)	_____	_____	Coordinator
Secretariat for Finance and Public Credit (Unit for International Financial Organizations)	_____	_____	Director
Secretariat for Foreign Relations (Unit for Scientific and Technical Cooperation)	_____	_____	Director
United Nations Development Programme (UNDP)	_____	_____	Resident Representative

List of Acronyms

ANP	Natural Protected Areas
BCI	Interagency Planning and Programming Agreements
CBD	Convention on Biological Diversity
CNA	National Water Commission
COBIDES	Committees for Integrated Ecosystem Management and Biodiversity Protection
CONABIO	National Commission on Biodiversity Knowledge and Use
COPLADES	State Development Planning Committee
EAP	Economically Active Population
FANP	National Fund for Protected Areas Management
FCCC	Framework Convention on Climate Change
FONAES	National Fund to Support Social Enterprises
GoM	Government of Mexico
INE	National Institute for Ecology (SEMARNAP)
INI	National Institute for Indigenous Affairs (SEDESOL)
LMC	Local Management Committees
NPD	National Development Plan
PNUD	United Nations Development Program
PROAREP	National Program for Attention to Priority Regions
PROCYMAF	Conservation and Forest Resources Sustainable Management Project
PRODEFOR	Forestry Development Program
PRODEPLAN	Commercial Forestry Plantations Development Program
PRODERS	Sustainable Regional Development Program
PROFEPA	Office of the Federal Environmental Protection Attorney
PRONARE	National Reforestation Program
SAGAR	Secretariat of Agriculture, Livestock and Rural Development
SCT	Secretariat of Communications and Transportation
SECOFI	Secretariat of Trade and Industrial Development
SEDAF	State Secretariat of Agricultural, Livestock and Forestry Development
SEDENA	Secretariat of National Defense
SEDESOL	Secretariat of Social Development
SEMARNAP	Secretariat of Environment, Natural Resources and Fisheries
SEP	Secretariat of Public Education
SINAP	National System of Protected Areas
SRA	Secretariat of Agrarian Reform
SSA	Secretariat of Health
UMAS	Sustainable Wildlife Systems
VMC	Village Management Committee

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A. PROJECT CONTEXT

1. Environmental Context: Mexico is one of the world's biologically richest countries, with the second highest count of reptiles and mammals recorded in any nation, and the fourth highest tally of plants and amphibians (Mittermeier 1998). A very high incidence of endemism is characteristic, with more than 900 endemic vertebrate species, and up to 70% endemism in some plant families (i.e. Cactaceae and Agavaceae). The determinants of this extraordinary wealth include the nation's rugged topography, varied climate, and complex bio-geographical history[1]. Some 29 % of Mexico's territory is forested, and forests provide a number of vital ecological functions, including by storing and accumulating carbon, sustaining hydrological cycles, and stabilizing soils. Yet, despite their ecological values, Mexico's forests are being lost at an alarming pace, with some estimates placing forest loss at between 600,000 and 700,000 hectares per year (Masera et al, 1997). The country may have lost as much as 95% of its original tropical forest cover, more than half of its temperate forest biomes, and a significant portion (>50%) of its semi-arid vegetation. The global environmental implications of this loss are grave, both in terms of the scale of biodiversity loss, and contribution to Mexico's GHG emissions and to land degradation. Mexico's forests are estimated to store 1,500 million metric tons of carbon (Masera, 1995). Presently, changes in land use, including permanent conversion of forests to other land uses and degradation account for over 30% of Mexico's CO_2 emissions (UNDP &WRI, 1999).

2. This project will seek to complement other biodiversity management initiatives, including planned investments in the Mexican protected area estate, by nesting conservation and regional development strategies within an integrated approach to ecosystem management. This approach is distinguished from other conservation efforts in that it will work at bioregional scales and across the productive sectors. While primarily geared towards generating global conservation benefits, by protecting flora and fauna that might otherwise be extinguished, the project will also generate other global environmental benefits by safeguarding carbon sinks, and foreclosing severe land and water degradation. Three globally significant sites have been selected as the focus of intervention: La Chinantla, La Montaña and Los Tuxtlas[2]. All of these sites are mountainous and are distinguished by large local variations in altitude, substrate and micro-climatic conditions. All are in turn characterized by exceptional beta-diversity—a product of these geo-physical attributes.

a) The Chinantla region in the southern part of the state of Oaxaca covers an area of 461,000 hectares (ha.) within the globally important Tehuantepec Moist Forest ecoregion. The area under forest totals 248,186 ha., the two largest remaining habitat blocks covering areas of 64,474 ha. and 56,123 ha. respectively. The Chinantla has two broad floristic belts, (Hernández 1999), including Mexico's biologically richest cloud forest (Rzedowski, J., 1999), and one of the country's largest extant tropical rain forests. A total of 1,847 species of vascular plants, 35 of which are endemic and 41 listed in Mexico's Red List of Endangerment; 93 amphibians (62 endemic, 49 listed); 200 reptiles (114 endemic, 107 listed); 530 birds (31 endemic, 169 listed); and 260 mammals (41 endemic, 52 listed) have been recorded.

b) The Montaña region in Guerrero comprises an area of 692,000 ha., of which 281,332 ha. have natural forest cover. Two globally important ecoregions are represented: the Pacific Dry Tropical Forest and the Sierra Madre del Sur Pine-Oak Forest. The region's forests include two relative large, though spatially disconnected, forest blocks, namely the Huamuxtitlán-Tehuaxtitlán ravine (41, 652 ha.) and Iliatenco-Barranca del Aguila forest (69, 998 ha), plus one other large forest block and several forest patches. La Montaña protects a number of unique plant communities,

[1] The number of species identified is expected to increase as field research progresses. Currently, field biologists have studied only a small number of taxonomic groups, including vertebrates and certain plant families, in depth.

[2] The regions are ranked as high conservation priorities in Mexico's Biodiversity Action Plan (CONABIO, 2000).

including tropical dry forests, the species assemblages of which display considerable variation when contrasted with similar communities elsewhere in the two ecoregions (PAIR-Montaña, 1999). There are fragments of hilltop holm oak groves and riparian vegetation in the ravines, unique areas of acanthus forests and montane cloud forest (PAIR-Montaña, 1999). A total of 40 amphibians (10 endemic, 16 listed; 112 reptiles (10 endemic, 52 listed); 561 birds (7 endemic, 85 listed); and 98 mammals (2 endemic, 25 listed) have so far been identified. The inventory of plants is incomplete but is expected to be large.

c) Los Tuxtlas in Veracruz has an area of 165,000 ha. of which 24% is forest cloaked. There are 4 large remaining forest blocks, covering a combined area of 39,719 ha, plus a number of outlying forest patches. Los Tuxtlas is the northernmost example of tropical rainforest in North America, and protects a remnant of the regionally outstanding but threatened Tehuantepec Moist Forest ecoregion. Forest communities include tropical moist forest, tropical dry forest, mangroves, hill forest and cloud forest. 1,300 species of plants have been recorded (2 endemic, 15 listed); 42 amphibians (35 endemic, 25 listed); 113 reptiles (82 endemic, 63 listed); 561 birds (27 endemic, 24 listed); and 63 mammals (6 endemic, 6 listed).

3. Institutional Context: Several Federal Agencies contribute in different ways to development and land use management. SEMARNAP, the Environmental Secretariat, has overall responsibility under national legislation for discharging regulatory functions relating to the environment, including in the forestry, fisheries, agriculture and urban/ industrial sectors, and for air quality (climate change) and watershed management. This includes oversight of compliance by developers with environmental standards, administration of protected areas and other special management zones created to protect natural resources, and co-ordination of the country's response to global initiatives, including the Environmental Conventions. The Attorney General's Office for Environmental Protection (PROFEPA) is responsible for prosecuting offenders for malfeasance under environmental legislation, and works closely with other SEMARNAP units. SAGAR—the Agricultural Secretariat—has overall responsibility for promoting and managing agricultural and rural development, supporting both smallholders and large-scale producers. The Secretariat coordinates a number of programs and services, including extension, farming systems research, and marketing and distribution. Another Secretariat, SEDESOL, is responsible for social development and, through its Institute for Indigenous Affairs (INI), for the welfare of indigenous peoples. A fourth Secretariat, the Secretariat of Communications and Transportation (SCT), is responsible for constructing infrastructure such as roads. All these Secretariats are headquartered in Mexico City, but maintain offices the States that manage the bulk of their field operations.

4. Municipalities are responsible for town planning—defining and enforcing zoning requirements in villages and hamlets. Municipalities are also responsible for providing civic utilities such as water supplies and waste management systems. Mexico's 31 States share responsibilities with Federal Agencies for delivering Government services, and have generally created institutional structures that mirror those created at the Federal Level. SEDAF, the State Secretariats of Agricultural, Livestock and Forestry Development are responsible in principal, for delivering services to the agriculture, livestock and forestry sectors, although budgetary constraints have hitherto prevented them from effectively discharging these obligations. However, the Federal Government has embarked on a far-reaching administrative decentralization program, which should see the gradual transfer of some functions and budgets for services from the center to the State level.

5. Land management jurisdictions for croplands, rangelands and forestlands depend on the tenure system. About half of Mexico's croplands, and 80% of the forest estate are under a form of land tenure known as the *ejidos* system, administered by agrarian communes. Under this system, land

is divided into individual plots, tenure rights over which are allocated to heads of household, or *ejidatarios*, who appropriate rights to descendents. Members acquire land rights upon reaching adulthood. Another tenure system, known as *comunidades*, is characteristic of indigenous communities. Here, land is managed by and in the interest of the community. Under Agrarian Law, *ejidos* and *communidades* are responsible for land use planning, allocation and management, and for enforcing federal or local regulations that circumscribe land uses in the public interest, such as within protected areas. These units are therefore the primary local vehicles of land use planning and management, and have a critical stake in the conservation arena. In addition to local governments and community based groups, several local NGOs are engaged in the areas of environmental management and sustainable development at the 3 sites, including, in Chinantla, ERA, Methodus, and Mesofila, in Montaña, PAIR, and in Los Tuxtlas: Luisa Pare, Sierra Santa Marta, and Alicea.

6. Policy Context: The *National Development Plan* (NDP) advances a medium-term development agenda, emphasizing the need to balance economic, social and environmental objectives and encouraging the active involvement of civil society in environmental management. Mexico ratified the UNFCC—Framework Convention on Climate Change—in 1993, and has since advanced several measures to meet commitments under the Convention. These include the preparation of a Country Study, Inventory of Emissions Sources, National Communication to the Conference of Parties to the UNFCC and an Action Plan for abating emissions of green house gasses (GHGs). The regulation of land uses to mitigate emissions of GHGs resulting from changes in land use status is flagged in the Plan as a national policy priority. Mexico's Congress ratified The *Convention on Biological Diversity* on the same day as the UNFCC in 1993. The NDP's *Environmental Program* lists the protection and sustainable use of biodiversity as one of its three highest priorities. The Government has recently finalized a *National Biodiversity Strategy*, with the financial support of the GEF, which flags 4 pillars of conservation management: i) protection and preservation of ecosystems; ii) assessment of biodiversity; iii) management of information on biodiversity; and iv) diversification of the use of natural resources.

7. Legal Context: The principal environmental statute in Mexico is the General Law of Ecological Equilibrium and Environmental Protection (LGEEPA), enacted in 1988 and amended by congressional consensus on December 13, 1996. A specific section of the Law deals with biodiversity, providing the legal framework for Protected Areas (ANPs). The Organic Law of the Federal Public Administration, (enacted in 1994), provides for 7the creation of SEMARNAP and defines its functions and legal responsibilities. Other key legal provisions related to the environmental sector include the Federal Hunting Law (1996), regulating taking of wildlife; and the Forestry Law (1996) which regulates forestry, including protection, restoration, reforestation and production from a development perspective. In addition to the Laws mentioned above, other legal instruments with a bearing on environmental management include the Fishing Law, the Federal Law of Plant Varieties, the Agriculture Law, the Plant and Animal Health Laws, the National Water Law, Agrarian Law and General Human Settlement Law (1993). Other Legislation and specifications to Laws, such as Presidential Decrees, complete this framework.

8. Overview of Land Use: 39 municipalities have administrative jurisdiction over the 3 project regions. The regions have a combined population of approximately 720,000, with a mean population density of some 4.62/ hectare. A general summary of land uses is provided in Table 1:

a) In La Chinantla, 70.5% of the economically active population (EAP) derives their principal livelihoods from agriculture and forestry. 3.8% of the total area (or 7,701 ha) is cropland, cultivated with corn, coffee and, to a much smaller extent, vanilla bean. Smallholders extract different non-timber forest products, including ornamental plants (mainly Camedor Palms, and some orchids, ferns, and cycads), and medicinal plants to supplement their household income.

Livestock husbandry is dominated by cattle production. Slash and burn agriculture is still practiced on slopes of 15 to 45 degrees, but intensive agriculture on permanent plots predominates in the Chinantla lowlands. 93% of the land in the lowlands is administered under the ejido system, and 7% as communal property, compared with 4% as ejido and 96% as communal property in the uplands. The mean size of smallholder plots under the ejido system is 2 hectares. (Beltrán, E. 1999, Mesofilo Group, 1999 and PAIR-Oaxaca, 1999.)

b) In La Montaña, 84.4% of the EAP is devoted to agricultural activities (INEGI, 1998). 55,000 ha are under cultivation, mainly with coffee, corn, and rice. Hillside subsistence farming systems dominate on slopes of 15 - 45 degrees. On gentler slopes, draft animals are used for tilling. Goats and, to a lesser extent, cattle and sheep, are raised for subsistence. There are a number of small cattle ranches in the low lands. The average size of farm plots is 3 hectares. Land tenure in the Huamuxtitlán ravine is as follows: 45% communal, 14% ejido, 40% private and 1% federal. In Ileatenco, 21% of land holdings are administered as ejidos and 88% is communally owned. (INEGI, 1994 and PAIR-UNAM, 1995.) Copal harvests (from certain Bursera species) and handicraft production supplement household income. Approximately 90% of households depend upon firewood to meet domestic needs (Arias, 1997). Finally, some medicinal herbs are collected from the wild for subsistence and for sale in local markets.

c) In Los Tuxtlas, some 60% of mestizo communities and 79% of indigenous communities obtain their principal source of livelihood from agriculture and livestock production. Corn and tobacco comprise the staple crops, while coffee, fruit, legumes and root crops are also cultivated, both for productive purposes and home consumption. Indigenous communities grow maize on hillsides, and manage small herds of livestock. Livestock husbandry is dominated by non-transhumant cattle production—accounting for a larger share of aggregate income than in the other regions. Wild harvests provide a means of supplementing household income for forest-edge communities. A number of non-timber products are harvested, notably some palms, orchids, cycads and medicinal plants. The tourism sector has also seen growth, providing new opportunities for local employment. 66% of land holdings are administered as ejidos, 3% under communal management, 22% under private ownership, and the residual, by the State. The mean size of farm plots in the region ranges between 16- 24 ha. (INEGI. 1990).

TABLE 1: SUMMARY OF LAND USES

Statistics/ Land Use	La Chinantla	La Montaña	Los Tuxtlas
Size of Region	461,000 ha.	692,000 ha	165,000 ha
Households	19,533	43,575	41,080
Area of Forest	248,186 ha.	291,332 ha	39,719 ha.
Size of largest Habitat Blocks	64,474 ha /56,123 ha.	41,652ha./69,988 ha.	9,805 ha/18,031 ha/ 1,883 ha/ 10,000 ha
Area of Croplands	17,701 ha.	55,000 ha.	6,422 ha.
Area of Rangelands	44,489 ha.	112,104 ha.	90,913 ha.
Area of Degraded Land	2,384.64 ha.	88,576 ha.	2,448 ha.
Area under Tree Plantations	18,672ha.	0 ha.	2,000 ha.
Secondary Vegetation	115,185 ha.	124,228 ha.	13,443 ha
Water bodies	13,382 ha.	20,760 ha.	2,000 ha
No. of Cattle [Goats/Sheep]	39,125 cattle	59,429 cattle 123,408 goats	221,874 cattle

Statistics/ Land Use	La Chinantla	La Montaña	Los Tuxtlas
		15,710 sheep	
Fuel wood Consumption	71,295 Ton/Year	190,863 Ton/Year	157,439 Ton/Year

BASELINE SITUATION

9. Threats: All of the target sites have experienced significant past disturbance, unfortunately a situation that prevails throughout Mexico, particularly in tropical forest biomes. 46.16%, 57.9% and 76% of the original forest cover in La Chinantla, Montaña and Los Tuxtlas respectively has been extinguished, and the remaining forest is threatened with insularization. Despite the fact that the regions are different in many regards (socio-culturally, historically, bio-geographically, etc.), they face similar threats to their ecological integrity. These are natural habitat loss, defaunation, and soil and water degradation. The determinants of these threats are briefly summarized below:

a) Agricultural encroachment constitutes the main threat to forests. Farming systems, while varying by crop and agro-ecological conditions, are generally characterized by their low productivity. Soil and water conservation practices such as crop rotation, mulching, ditching and terracing are not evenly practiced. This results in nutrient depletion and soil degradation, contributing towards declining farm productivity. Farmers residing at the forest-edge may simply abandon existing plots and establish new fields on forestland to maintain farm productivity. Such encroachment is also a primary contributor towards habitat fragmentation.

b) The expansion of livestock rangelands at the expense of forests is a major threat in all the regions, but particularly in Los Tuxtlas. Stocking intensities on rangelands may not reflect their environmental carrying capacities, and overgrazing is a problem in some areas. Despite this, rangeland management remains perfunctory, with little evidence of pasture rotation, or efforts to otherwise enhance the quality of pasture. Similar problems are emergent in Chinantla, although this threat is far less acute in that region. But in La Montaña, where goats dominate stock inventories, and livestock are often released into forests to browse, damage is being sustained to the biologically rich forest under story. There has been little investment in the development of improved silvo-pastoral systems and cultivation of trees for fodder.

c) Wildfires occur periodically in the dry season (January – May) in all the regions and are often deliberately kindled to clear plots for farming or ranching or because of land disputes. The consequent loss or deterioration of vegetation and ecological structure catalyses a downward spiral of ecological degradation. Wildfires also contribute towards GHG emissions. According to data provided by SEMARNAP, some, 904 ha, 3,812 ha and 1,720.ha of forest have been damaged by fire in Chinantla, Montaña, and Los Tuxtlas respectively between 1997-99. Burning of vegetation and crop residues is not illegal, and, indeed is an important part of farming and pastoral management, releasing potash into the soil. But fire needs to be more effectively controlled to minimize the impact, particularly during sustained droughts.

d) In all three regions the illegal and selective extraction of forest products, including timber and minor forest products, is common. This threat is growing in La Chinantla. While such uses do not generally cause habitat conversion, they do pose a threat to native flora and fauna. Fuelwood provides the major source of energy for rural communities. Wood is also cut for housing and agricultural uses (posts, corn bins, etc.) In La Montaña, fuel wood harvests have a strong impact on the environment for in addition to home consumption, stocks are marketed.

10. Root Causes: The root causes of the aforementioned threats, assessed following input from communities, are summarized in Annex 2. Widespread poverty constitutes a key problem in all areas, because it correlates with risk adversity, and a propensity against technological innovation. The problem is compounded because the poor, often indigenous communities, may lack access to Government services, including agricultural extension advice and marketing support. Other key problems stem from an institutional failure to accommodate ecological management objectives within the development agenda, including by accounting for ecological capital values when siting infrastructure such as roads, a failure to invest sufficiently in ecological capital, such as in fuel wood plantations, and, in La Chinantla, promotion of land settlement. Local ejidos and comunidades in La Chinantla and La Montaña with remaining stocks of forest capital are facing encroachment from neighboring communities. Although this is illegal, they have often lacked the wherewithal to effectively stem this encroachment, particularly as these forestlands have not been designated as ecologically sensitive areas—to be protected. A widespread lack of awareness of ecological values, and their contributions to productive activities, has hampered effective policy integration in the past. But this situation is changing as forests become scarcer. Finally, a failure to effectively administer forestry and conservation laws means that the risk attached to infringements of the law is perceived to be low. Successful management will merit tighter enforcement.

11. Baseline Programs: Absent intervention, the afore-mentioned threats in the 3 regions are likely to gradually accelerate, resulting in the extirpation of forests, except, perhaps, from small, fragmented patches in areas that are relatively inaccessible. This will have its corollary in the loss of biodiversity and impairment of ecological services, with both global and domestic environmental impacts. Given the demographic and economic fundamentals of the regions, any resolution of this crisis will necessitate broad based and cross-sectoral coordination of polices and management responses. In other words, the threats and their antecedents will need to be addressed at a regional level. A number of constraints have hitherto served to hamper management on this scale:

a) Despite the laudable policy framework for environmental management, mechanisms for coordinating and administering interventions across sectors are weakly developed. Policy makers and end-users of natural ecological capital tend to be poorly informed of the links between ecological and productive systems, and the externalities associated with development.

b) A multi-agency framework for planning, monitoring and adapting environmental management is missing, foreclosing effective mainstreaming of conservation with development objectives. Mismatched sectoral policy objectives are causing unintended negative ecological externalities, and a legal basis for solidifying their management at bioregional scales is lacking. Enforceable local land use codes are needed to give legal backing to ecosystem management.

c) Technological solutions to enhance the conservation compatibility of productive activities remain undefined within the specific environmental context of the regions. Due to a lack of information and technical capacities, institutions are unable to effectively promote conservation. Local stakeholders—municipalities, farmers' organizations, and indigenous groups, amongst others— have not participated in the analysis and design of sustainable use paradigms for the productive sectors. This has reduced their willingness to adopt the models.

d) The protection of forests per se will not protect biological diversity owing to the risk of defaunation and insularization. There remains an unmet need to create nuclei protected areas within 2 of the 3 target regions, La Chinantla and La Montaña, to establish refugia for wildlife.

The baseline for each of 5 'bundles' of actions required to address these 'barriers' is as follows.

12. Institutional Frameworks: The Government initiated the Sustainable Regional Development Program (PRODERS) in 1996 to realize sustainable development objectives, including poverty alleviation, by combining investments in the productive sectors with environmental management so as to enhance their ecological, social and economic sustainability. The Government has recognized that many of the threats to ecological integrity have their genesis far away from natural ecological frontiers, in policy and investment decisions orchestrated at the federal and regional levels that impact the price and benefits of environmental management and spur land use conversion. Field based conservation tends to be focused within small-protected areas. While important, these efforts are often poorly married with regional development activities, including policies, planning and investment operations. PRODERS is aimed at coordinating and strategically adapting policies, planning and investments across sectors and institutions in 24 regions. But, although PRODERS has deployed this concept on a trial basis with encouraging results, for several reasons the model has not yet been fully developed. In particular, there is an unmet need to integrate global environmental management objectives into the framework. PRODERS commenced activities in Chinantla and La Montaña in 1997, funding community outreach work, and creating regional planning committees. In the case of Chinantla, these have taken the form of 2 Technical Committees for Natural Resource Management, and in La Montaña, a Regional Sustainable Development Council. These Committees are composed of representatives from Federal and State authorities, local NGOs and local producer associations.

13. As part of the NDP, Mexico's President inaugurated the National Program for Attention to Priority Regions (PROAREP) in 1998. This Program, under the umbrella of "Interagency Planning and Programming Agreements", is an effort to integrate the development efforts of eight Secretariats: SAGAR, SCT, SEDESOL, SEMARNAP, Agrarian Reform, Commerce and Industry, Public Education, and Health. PROAREP focuses on 36 regions, including the PRODERS regions, with selection based on social well-being. Regional Development Councils (COPLADES) are being created at a State level as a forum for policy dialogue among Federal, State and Municipal authorities, as well as with NGOs and grassroots organizations. While PRODERS is a pivotal part of the Program, it has yet to confront global environmental dilemmas.

14. There is a widespread paucity of understanding of the ecological dimensions of sustainable development, and the socio-economic impacts of ecological degradation. Such an understanding will be critical to create a constituency for sustaining ecosystem management. But, amongst federal and state Government agencies, only SEMARNAP is engaged in awareness raising, and then mainly on 'brown' issues. Several NGOs in Los Tuxtlas have obtained funding for awareness programs, but these initiatives are nascent and need scaling- up to have a lasting impact.

15. Planning and Monitoring Adaptive Ecosystem Management: While national system plans for conservation have been developed, regional plans to operationalize these are lacking. In both La Chinantla and La Montaña, land use management plans have not as yet been developed. In Los Tuxtlas, where a Biosphere Reserve has been established, a management plan for the Reserve is being prepared. But, all told, this covers only a fraction of the bioregional landscape. In the other regions, basic information required to guide planning is missing, including information on the distribution of biodiversity, and geographical and socio-economic fundamentals. This information will need to be collected, collated and interpreted. Existing data management systems and information technology will need to be upgraded for this purpose. A larger constraint is that the framework and skills set required to engineer the participation of local communities and other stakeholders in the planning effort is largely absent, although there will be some effort by NGOs to engage communities in a dialogue on sustainable development in the baseline scenario. Any attempt to develop a Bioregional Land Use Management Plan will need to be anchored by accompanying community-planning efforts and management agreements within *ejidos* and *comunidades*. SAGAR,

SCT, SEDESOL, SRA and the State Governments will maintain a social outreach program as part of their baseline efforts, which may be capitalized upon for this purpose.

16. In Los Tuxtlas, PROFEPA has established a natural resource monitoring program for the Biosphere Reserve, as part of its planning efforts, although, at present, this only covers core areas of the Reserve. However, an integrated monitoring and evaluation program, which informs management planning, will need to be created to create an adaptive framework for management.

17. Policy Development: There is a significant problem with weak policy integration, which needs addressing. For example, Government policies have promoted settlement in La Chinantla, without regard to the environmental impacts and in all 3 sites, there is no basis for matching the social benefits against the private costs of environmental management, and internalizing ecological externalities into the economic calculus of development through resource pricing. Also, the criteria for selecting beneficiary groups for service delivery do not sufficiently account for their social status or their natural resource holdings. Poorer groups—most in need of support—are often excluded. Finally, there has been a focus on promoting 'technical fixes' in the productive sectors, without accounting for local agro-ecological conditions or for their wider conservation impacts. Until the creation of the Interagency Planning and Programming Agreements", no official inter-agency coordination mechanism for policy integration existed. Nevertheless, this development in itself is not sufficient to address global environmental concerns. New mechanisms for policy development and integration across Government agencies, and, involving civil society, are needed. This will need to be accompanied by the creation of new policy assessment tools—to enable decision-makers to weigh the relative costs, benefits and tradeoffs between different forms of natural resource usage. Additionally, new statutes and other subsidiary legislation will be required to give legal backing to local and regional Land Use Plans.

18. Rural Livelihoods: A number of agencies supply development services, including extension, farming systems research, marketing, training, credit and other support programs[3]. These services have a major bearing on land use allocation, and thus indirectly on conservation outcomes. But, in general, they are not geared towards protecting natural ecological capital and services, have not been adapted to prevailing agro-ecological conditions and have not adequately incorporated traditional knowledge of ecological processes. A tremendous effort is needed to reorient these investments to enhance their compatibility with forest conservation objectives. But for this effort to be successful in the long run, technical demonstrations are needed to define how best to adapt production systems to facilitate conservation while satisfying economic objectives. In this regard, to encourage the uptake of improved systems by local communities, it is critical that demonstrations be interwoven with indigenous systems of soil and water conservation, and account for constraints on land, capital and labor. Uptake of 'enhanced' systems will tend to be most successful where the risks are low, and benefits per unit of work effort high. Successful models already exist in the sites and may be capitalized upon: for instance, several coffee and vanilla producers in Los Tuxtlas and Chinantla have substituted chemical fertilizers with organic farming methods and promoted shadow coffee cultivation in agro-forestry systems using native trees, in some instances in combination with apiculture. These systems have capitalized on green markets for coffee and honey, which compensate for the costs of modifying the production system. An example of a low-cost/ high- benefit system for sustainable farming intensification on hillsides is the abonera system, involving the cultivation of corn in velvet bean (Mucuna pruriens) fields. The bean is mulched upon reaching maturity, providing

[3] Several other SEMARNAP programs complement the PRODERS initiative. These include PRODEFOR, which provides funding for sustainable forest management, PROCYMAF, which prepares and updates forest management plans and sponsors field research; PRONARE (implemented with SEDESOL and SEDENA) which promotes reforestation; and PRODEPLAN, which provides subsidies for the development of commercial forestry plantations.

a rich organic fertilizer. Models for carbon sequestration have also been developed in tropical agro-forestry systems similar to those included in the project sites. When compared to the marginal profits inherent to subsistence agriculture in the region, the studies suggest that economic alternatives such as remuneration for carbon sequestering can foster paradigm shifts in local land use (De Jong et al., Masera et al, Ordóñez Díaz, JA). These models will be applied as appropriate during project implementation.

19. Diagnostic studies performed during project preparation have identified several gaps in the knowledge and technology base, which need plugging to improve the record of environmental management. Table 2 provides a list of domestic investment needs, which will define the baseline, and the knowledge barriers that need to be conquered to create biodiversity friendly landscapes.

TABLE 2: LIST OF INVESTMENT AND DEMONSTRATION NEEDS

Investment Need (national baseline)	**Knowledge/ Technology Gap** (barrier)	**Environmental Benefit**
Expansion of area under permanent tree plantations to provide 1] fuel wood; 2] fodder for livestock; and 3] household construction materials to reduce pressures on remaining forest s	Need to develop silvicultural models that utilize native species as multi-purpose crops; integrate these models with local agrosilvo-pastoral systems; Introduce energy efficient wood stoves (test locally appropriate models) to reduce biomass consumption for energy	Improved habitat quality for wild-life; development of biological corridors between large habitat blocks, restoration of degraded lands, improvement in soil conservation, and carbon sequestration;
Improve local livestock husbandry systems through intensification and improvement of animal health, nutrition, and rangeland management	Define best mix of pasture rotation, soil and water management, stall feeding, and pasture enrichment (i.e. plantation of nitrogen fixing legumes) for each site	Reduce rangeland degradation, and indirectly, pressures to clear forests for pastures; decrease intensive use of agro-chemicals, reduce emission of below-ground carbon reserves
Engender sustainable farming system intensification, improve soil fertility through inputs of fertilizer, terracing on steep slopes, crop diversification, marketing and distribution networks, and contribute to the further development of green markets.	Define best agro-forestry systems for each site, using native species as shade trees and living fences, identify most ecologically benign methods of soil conservation, such as mulching and ditching, for each site; identify means of improving on-farm fire management	Improve habitat conditions for flora and fauna at the landscape level; reduce rate of land degradation, carbon emissions and agro-chemical use, and indirectly, the impetus for forest clearance; reduce danger posed by wildfires to forest
Diversify local incomes, investment in feasibility and marketing studies, promotion of new income earning opportunities, training and extension.	Determine means of integrating wild harvests into farming systems on farms and rangelands through 1] enrichment planting for apiculture; and 2] testing on-site culture of minor forest products (ornamental plants, mushrooms etc.)	Increase tree cover; Improve habitat conditions for native flora and fauna, and enhance the relative values of conservation to mono-cultures and other conservation incompatible land use regimes

20. Protected Areas: While a Biosphere Reserve with a core area of 155,122 ha. has recently been created in Los Tuxtlas, basic conservation operations have yet to be operationalized there, although the Government is in the process of compensating landholders for foregoing access to the site. In the baseline scenario, the Government of Mexico will fund the establishment of a field station, the purchase and maintenance of office equipment, and the salaries of a Park director, assistant director, program director, technical adviser and administrative assistant. However, rangers are needed for enforcement activities, and ranger posts and ancillary equipment, including vehicles are needed to operationalize basic conservation functions. There are no existing protected areas in La Chinantla and La Montaña, and no plans to create such areas in the default scenario, although they are clearly needed to supply refugia for wild species and races. In other words, protected area management will need to be an important accompaniment to any bid to create and manage biodiversity friendly landscapes, and to protect vital ecological services. But, given the cultural, demographic and economic fundamentals of these landscapes, it will clearly be necessary to consider

carefully different categories of protected areas available and reach a consensus with the relevant local communities and state and federal agencies during the first phase of the current proposed project. A balance will need to be found between the management of whole landscapes and site-specific intervention in protected areas.

B. STRATEGY FOR USE OF PROJECT RESOURCES

21. The long-term Goal is to protect the biodiversity and ecological functions of a representative sample of forest biomes, within 3 globally significant ecoregions: Tehuantepec Moist Forests, Pacific Dry Tropical Forests, and Sierra Madre del Sur Pine-Oak Forests. The Immediate Objective is to marry global environmental protection and rural sustainable development objectives through demonstration of an integrated ecosystem management paradigm that scales up the focus of environmental management to the bioregional level. As already detailed, 3 sites have been selected as the focus of bioregional management, each containing a mix of natural forest, rangelands, and croplands and abandoned, degraded lands. The project will test and implement new institutional arrangements to coordinate planning, and investment in ecosystem management across sectors, to create a mosaic of conservation-compatible land uses, including 1] new set-asides for biodiversity protection in biologically important areas; 2] tree plantations, using native species, to supply fuel wood, other household wood needs and fodder; protect watersheds and conserve soils, and repair degraded lands; 3] sustainable farming systems in surrounding landscapes that halt encroachment into protected forests; and 4] silvo-pastoral systems, that account for the carrying capacities of rangelands and that prevent their degradation[4].

22. Pilot Areas: To secure the desired global environmental benefits, conservation efforts will initially focus on a total of 8 pilot areas: 2 in Montaña, 2 in Chinantla and 4 in the Los Tuxtlas PA, capturing the largest remaining blocks of natural habitat and adjacent lands (see maps in Annex 3). The intention is to gradually expand the focus of field interventions to cover other areas, as experience is gained in the pilot areas. The pilots aim at protecting large habitat block that cover an area of 271,966 ha. with 120,597 ha. in Chinantla, 111,650ha. in La Montaña and 39,719 ha. in Los Tuxtlas, in addition to protecting forest patches on adjacent lands and creating biodiversity friendly neighboring landscapes. The ejidos and comunidades with jurisdiction over these areas have a population of 87,651, including: 10,752 in Chinantla, 64% of them Chinanteco Indians, distributed in 58 villages, 36,099 residents in La Montaña in 69 villages, 70% of whom belong to the Tlapanec, Nahua or Mixteco ethnic groups; and a population of 40,710 in Tuxtlas distributed in 62 settlements, 65% of them being of Nahuas, Zoque or Popoluca ethnic origin.

23. The project will be phased to allow an opportunity to learn from and adapt management. Phase 1 will have a duration of 5 years and will focus on demonstration, consensus building and planning within pilot areas. Phase 2 will have a duration of 3 years, and will focus on consolidating and replicating management in each region. A number of pre-requisites to trigger graduation to phase 2 have been established. The sequence of proposed activities and triggers is detailed in the logical framework. The Project has 5 Outputs: 1] the creation of institutional arrangements at the regional and local levels to co-ordinate ecosystem management efforts. This will include the mobilization of villagers within the pilot areas, and broad-based advocacy and awareness raising. 2] The preparation

[4] The 3 sites provide very different ecological landscapes in which to test bioregional management. Preliminary ecosystem pattern analyses show La Chinantla to be the least fragmented, with large additional blocks of contiguous forests, and good internal connectivity between forest blocks. In La Montaña, extensive forest areas have been fragmented, and the forest estate now consists of several larger blocks and numerous patches. In Los Tuztlas, forest cover has been largely reduced to 4 'islands', with a few forest patches in ravines and in areas with limited accessibility.

of comprehensive ecosystem management plans within ejidos and comunidades and on private land holdings, with accompanying monitoring and evaluation systems to facilitate their adaptation. 3] Strengthening environmental impact assessment protocols, instituting user fees, and integrating conservation and development policies by developing new policy prescriptions. 4] Systematically adapting investments in the productive sectors to improve their compatibility with conservation goals; and 5] establishing and strengthening conservation set-asides in sensitive areas. An 8-year time budget is proposed given the spatial scale of intervention, the number of actors involved, and the need to test and adapt strategies.

24. Stakeholder Involvement in Project Design Work: Great efforts were made to identify and involve all possible stakeholders in design work during project development. These stakeholders included governmental authorities at the national, state and local levels, representatives of local communities and non-Government organizations. These groups were consulted on several occasions, and using different approaches that have sought to reach agreements between stakeholders on management strategies. A start-up workshop was conducted with members of the Federal Government Secretariats, academic institutions, NGOs, farmer organizations from the three states and the private sector to clarify the project concept. SEMARNAP then created an Advisory Board (AB) for the project, with representation from stakeholders attending the workshop. The Board has provided leadership in initiating public consultations, and has helped to define the necessary institutional arrangements needed to ensure project success. Workshops were then conducted in each region with the participation of local communities, engaging a cross-section of different groups. Community outreach teams were employed to canvass views from community leaders and community-based organizations. A total of 58 community assemblies were organized in La Chinantla, 69 in La Montaña, and 62 in Los Tuxtlas, providing a forum for open participatory assessments of threats to forests and management needs throughout the 3 regions. Finally, project design staff worked closely with federal representatives from SEMARNAP and with the three PRODERS Director Generals in each of the three States. Weekly meetings were held with the General Directors of the Interagency Planning and Programming Agreement (BCI) to discuss progress in project development. A series of diagnostic studies have been prepared in parallel, and have helped inform the process of designing project interventions.

C. PROJECT OUTPUTS, INDICATORS AND ACTIVITIES

OUTPUT 1: INSTITUTIONAL FRAMEWORKS FOR INTEGRATED ECOSYSTEM MANAGEMENT ARE STRENGTHENED AND ARE FUNCTIONING EFFECTIVELY. GEF: US$4.1173M; COFIN: US$5.2573M.

25. The project will test new institutional arrangements to coordinate ecosystem management, and adapt them as necessary. The General Directorate of Regional Affairs within SEMARNAP will brief the Interagency Planning and Programming Committee established under PROAREP, and Planning Councils for Regional Development (COPLADES), and provide other support to ensure that participating Federal and State agencies strengthen their programmatic integration. Multi-sectoral Committees for Integrated Ecosystem Management and Biodiversity Protection (COBIDES) will then be established in the regions, with representation from SEMARNAP, SAGAR, SEDESOL, the States, Municipalities NGOs and Farming and Livestock Associations. The COBIDES will be constructed around the existing Technical Committees in La Chinantla and La Montaña, and the Management Committee for the Biosphere Reserve in Los Tuxtlas. Their Terms of Reference will be to advise and assist COPLADES and the Federal and State Government implementing agencies to incorporate global environmental objectives into services extended to the productive sectors, and promote, coordinate and monitor implementation of the

Land Use Plans to be developed under Output 2. SEMARNAP will provide secretariat services for each COBIDES. UNDP/GEF will provide technical assistance and training to ensure that they fulfill their functions.

26. The Regional Framework will be complemented by Local Management Committees (LMC's), each representing a number of *ejidos* and *comunidades* and private landholders and tasked with coordinating land use planning, management and monitoring within them[5]. The geographical focus of each Committee will be determined on the basis of social criteria and sub-watershed boundaries, and flexibility in their focus and composition will be exercised to ensure that the coordination arrangements are socially feasible. By law, as tenure is exercised at the *comunidades*, *ejidos* or private landholder level, these units must be the locus of local land use planning and management. While the LMC's will serve as vehicles for action, ecosystem management will be operationalized within these units. The project will recruit and train teams of community motivators within each LMC jurisdiction to mobilize the participation of communities in the management program. The LMC's will initially be established in the pilot areas identified within each region. Following stakeholder consultations undertaken during project development, and reflecting the physical boundaries of watersheds it is proposed that 5 Committees be established in Chinantla, 6 in La Montaña, and 4 in Los Tuxtlas. UNDP/GEF will provide funding and technical assistance to train LMC Members in strategic planning, negotiation and monitoring, and the community motivators in social engagement, and conflict resolution methods.

27. In order to create a receptive social environment for the institutional frameworks to operate, the project will provide funding for an awareness campaign, seeking to underscore the nexus between global environmental concerns and pressing local economic and social development objectives. The awareness campaign would also provide a vehicle for disseminating information on ecosystem management objectives, government services, project activities and demonstration work, supported under the other project outputs. Recognizing that written media may be inaccessible to some of the poorer members of local communities, the project will make extensive use of radio for this purpose, although media outreach activities will also utilize newspapers and other channels of communications. A special effort will be made to involve primary school teachers in this campaign, both because primary school is usually the highest educational level reached in the regions, and because of the leadership provided by teachers within the communities. Regular teacher training workshops will be sponsored to provide a forum for collaborative learning and stakeholder mobilization. While some macro-guidelines for the campaigns will be prepared, the intention is to develop locally relevant awareness materials. UNDP/GEF and SEMARNAP will share these costs.

OUTPUT 2: PARTICIPATORY PLANNING AND MONITORING SYSTEMS FOR ADAPTIVE AND INTEGRATED ECOSYSTEM MANAGEMENT ARE ESTABLISHED. GEF: US$2.2624M; COFIN: US$3.7336M.

28. Rapid biological and environmental assessments, inventories and studies will be conducted in order to supplement and verify baseline information on land uses, biodiversity and ecological services. Aerial images will be purchased, and ground-truthing exercises conducted at sample plots to assess the physical status of different biomes. This will be complemented by other field demonstration, as necessary. A stock taking exercise will be undertaken upon project commencement to evaluate information already available and define gaps in information, at both spatial and temporal scales. Outputs will include an updated ecosystem pattern/use analysis, identification of conservation hotspots, and quantification of carbon storage in biomass. Information will be used in order to inform

[5] These Committees are necessary to coordinate planning and management from the bottom up, and ensure that local-residents, and particularly indigenous groups, are fully engaged in kindling ecosystem management activities.

land-use planning, and in particular, prioritize areas for biodiversity conservation or corridor restoration—so as to conserve a representative sample of habitats.

29. Social assessment studies will be conducted in the first year to more accurately document social conditions (social organization, land tenure, socio-political conflicts and gender issues, among other relevant issues), as well as to develop a register of traditional knowledge of area ecology. This will represent the social baseline of the project, and will be central to verifying/ adjusting the design of policy, organizational frameworks and financial incentives established under other outputs. Productive systems for agriculture, livestock husbandry, and forestry will be documented and mapped. Participatory rural appraisal methods will be used for this purpose.

30. Data collected through the proposed baseline assessments will be synthesized, analyzed and stored in a multi-attribute database for use in land use planning, monitoring and evaluation. The project will strengthen Geographic Information Systems in each region, supporting purchases of hardware, programming and data entry. The GIS will be constructed to provide overlays of agro-ecological, biological, geo-physical, productive system, social, demographic and economic indicators with a scale of 1:50,000. Data base management capacities would be developed and training provided to enable end-users to manipulate the system. Information generated through the system will be available to local stakeholders and the public upon request.

31. Integrated ecosystem planning will be orchestrated from the bottom up, through a two- way flow of information between communities and planners that engenders a cross synthesis of Bioregional Conservation Strategies and Local Management Plans. A Bioregional Conservation Strategy will be prepared and continuously updated following land use capability determinations, and will identify large habitat blocks, corridors, patches and other critical areas in need of special protection. This will be overlaid with Local Management Plans within *ejidos*, *comunidades* and private land holdings, to ensure that local planning efforts are congruent with integrated ecosystem management objectives. A framework 10-year Bioregional Conservation Plan will be prepared, to provide a strategic basis for guiding conservation management efforts throughout each of the sites.

32. Local Management Plans will be prepared through an iterative process, overseen by the Local Management Committees, that will combine scientific advances and traditional knowledge in 5 stages: characterization, diagnosis, prognosis (trends), evaluation, and definition of allowable land uses. The effort will be led by a technical team employed through the project, and a group of community workers, comprised of local *"campesino"* members—all of whom will be trained in participatory planning methods, conflict resolution and other skills. Careful attention will be paid to the selection of these workers, to ensure that their skills are matched to this complex task. The social outreach work will be carefully managed, with intensive briefings and debriefings organized.

33. Land use zoning will be based on the methodological norms established by SEMARNAP. This is composed of three elements: the definition of zones based on land use suitability (conservation set asides, agro-forestry, restoration, biological corridors, intensive agriculture, silvo pastoral areas, settlement areas,); definition of allowable uses within each zone; and identification of specific projects or activities, to operationalize management within the zones, with a financial projection. The agreed zoning scheme will be consolidated into the Bioregional Conservation Plan, with accompanying rules and regulations developed under Output 3 to facilitate conservation, and ensure that land uses conform to the zoning requirements. The Local Management Committees will supervise and provide follow-up, monitoring and evaluation of the Plans and their schedule of activities. Master Plans will be updated every 5 years, but Operational Plans will be adapted annually, based on an assessment of progress and feedback from ongoing monitoring & evaluation

34. A regular monitoring program will be instituted to gather data and verify trends and impacts, using the database as a reference source. The outputs of the monitoring program will be evaluated, and made available for planning purposes, to inform strategic decision-making and adapt management. Outputs would be compared against other data generated by external sources, including the Social Poverty Index (INEGI, SEDESOL), Municipal Development indicators (CEDEMUN), Indigenous Population indicators SEDESOL, INI), rural enterprise data (FONAES), and Agrarian Census data (Ref. Agraria y su Procu.). While these data are available at a larger scale than that needed for ecosystem management, they will be useful as a control for the project impacts. Finally, the project will establish close linkages with SEMARNAP's early warning system established to prevent wildfires, which will monitor precipitation, alert communities to fire hazards, and support the planning and management efforts engineered locally.

OUTPUT 3: ENABLING POLICY, LEGAL & FINANCIAL MECHANISMS ARE INSTITUTED, PROVIDING INCENTIVES FOR REPLICATING & SUSTAINING MANAGEMENT. GEF: US$1.4832M; COFIN: US$0.6041M.

35. The project will provide support to adapt local statutes to backstop the Bioregional Conservation Strategy, including, by giving Local Management Plans legal standing, integrating conservation and development policies, incorporating conservation impact requirements into environmental appraisal procedures, and developing incentives for compliance. The latter will address the policy and legal dimensions of enforcement, as well as address the issue of access to public services, including extension services, especially by the rural poor. This support will be provided in several steps. First, a review of policy options will be performed with stakeholder input. Then, a list of recommendations for policy reform will be prepared, and draft polices and regulations processed. The project will work with decision-makers and planners at the regional level to sensitize them to the need for reform, engage them in policy debate, and harness their support for the recommendations. Finally, legal services will be provided to facilitate regulatory reforms UNDP/GEF will finance the cost of technical assistance, while the GoM will finance staff.

36. UNDP/GEF will also finance technical assistance to enhance policy making and enforcement capacities for integrated ecosystem management. This will include the development and application of instruments for integrating conservation objectives into sector policies and programs. Such instruments will include multi-criteria decision analyses, as a means of evaluating the tradeoffs and externalities associated with different land uses; and reinforced environmental impact assessments for large developments, including of roads and other infrastructure, in ecologically sensitive areas. Safe minimum standards for such development will be defined, with checklists to guide the process of assessment for different categories of land use. Training will be provided to policy makers and planners in conservation impact appraisal methods. A concurrent awareness drive will appraise NGOs and local community groups of these requirements.

37. The recurrent costs of maintaining the new institutional arrangements are estimated at US$ 0.6 m per annum at current prices, although this estimate will need to be confirmed following their operationalization and possible refitting. This includes the recurrent costs of operating the COBIDES and Local Management Committees, monitoring and evaluation, and maintaining cadres of community forest guards. The principal investments in land use management over the long term will come from substituting baseline expenditures in the productive sectors to enhance their conservation compatibility. The Mexican Government will absorb the bulk of these costs by reorienting its investment priorities in the regions. UNDP/GEF will finance an economic appraisal of the value of ecological services provided by natural ecosystems, as a basis for improving long-term budgetary negotiation positions. To supplement funding for conservation work, particularly in the new protected areas to be created under output 5 in La Chinantla and La Montaña, UNDP/GEF will

provide support for the identification and implementation of new fiscal tools to recover a portion of management costs. An investigation of options will be undertaken in Phase 1, taking on board the results of the afore-mentioned valuation exercise, and will include water fees, tolls on the use of infrastructure in ecologically sensitive areas, and recreational use fees. The feasibility of introducing such charges will be assessed, with an appraisal of willingness and ability to pay, and the overhead associated with implementation. UNDP-GEF will then provide support to design the fiscal instruments, where feasible. The agreement of Government agencies to pilot feasible mechanisms is a trigger for phase 2.

OUTPUT 4: SUSTAINABLE AND INTEGRATED LAND USE MANAGEMENT MODELS ARE PILOTED AND PROMISING APPROACHES ARE REPLICATED BIOREGIONALLY. GEF: US$3.8650M; COFIN: US$47.2218M.

38. During the first phase of the project, targeted field demonstrations of conservation compatible, area-specific, farming, livestock husbandry, forestry, and agro forestry systems and other sustainable land use practices will be sponsored in the pilot areas. The aim is to identify economically and socially feasible means of arresting threats to natural habitats, including by mitigating land degradation and improving the productivity of existing productive systems. The demonstrations will be undertaken with the full participation of local communities, using a network of trained 'contact farmers' to facilitate farmer to farmer contact, and an accompanying economic assessment of the costs and benefits of land use options from a social and private (household) perspective. This is essential to ensure that alternatives are economically as well as technically feasible. The range of demonstrations to be supported in each region have been determined following the participatory diagnostic assessments performed during project development:

a) In the case of La Montaña, stakeholders have indicated an interest in the following: 1] Developing multi-purpose tree plantations for fuel wood and fodder using native species (*Acacia cochliacantha, Acacia pennatula, Acacia famesiana, Lysiloma divaricata, Acacia bilimekii, Leucaena esculenta, Lysiloma acapulcense and Glincidia sepium*). to complement existing silvicultural tests, which have focused on non-native species. The project would test different silvicultural models to optimize tree growth both on and off- farm[6]. 2] Testing energy-efficient (fuel wood-saving) stoves; the project would develop and field-test locally appropriate stove models. 3] Developing ecologically appropriate silvo-pastoral systems for goats. The project would assess carrying capacities for livestock, and test pasture rotation and ecologically benign pasture improvement methods. 4] Supporting sustainable farming system intensification; the project would pilot agro-forestry systems and soil conservation methods, that improve habitat for native fauna and flora, control burning, protect soil biomass and conserve soil nutrients, including crop rotation, diversification (i.e. ornamental plants), terracing, mulching and ditching. The demonstration will focus on the following crops: corn, rice, fruit, coffee, and Maguey and will be adapted for prevailing agro-ecological conditions.

b) In Los Tuxtlas, communities have expressed an interest in developing wildlife ranching (honeybees/ iguanas) as a means of conserving habitat and diversifying livelihoods. The project will test ways and means of establishing *in situ* ranches within secondary forests and restoration areas, through site enrichment with native species. The demonstration will build on national efforts to create green markets for honey. Communities have also requested an investment in development of tree plantations using native species, with a focus on wood production to fulfill household demands for fuel wood and timber. The project will adapt local silvicultural trials to test growth rates and productivity enhancement measures for native species. Finally,

[6] These efforts will be informed by the on-going work of ICRAF to develop such diversified silvicultural regimes.

communities have requested an investment in the promotion of organic agriculture and mixed silvo-pastoral systems. The project would test means of arresting soil degradation and thus reducing emissions of below-ground carbon stores and improving on–farm habitat quality by promoting the cultivation of hedgerows as living fences, mulching, mounding and ditching, and cultivation of nitrogen fixing trees and legumes on croplands and pastures to improve soil and pasture quality. The demonstrations will focus on smallholder cattle husbandry and several local crops: chili, tomato, papaya, watermelon and flowers.

c) In the Chinantla region, communities have requested support for improving the sustainability of agriculture and forestry through development of agro-forestry. The project will support the development of conservation compatible agro-forestry systems on croplands and grazing areas that improve habitat quality for native fauna, reduce agro-chemical intensities, and protect soils. Silvicultural trials and plantation development schemes will be adapted to promote cultivation of native multi-use species, to provide fodder, rehabilitate degraded areas and improve habitats. Farming system trials, again adapted to suit local agro-ecological conditions, which vary according to elevation, soils and aspect, will focus on mixed cropping of on Ixtle, shade coffee and ornamental palm ("Palma Chamaedorea"). The latter demonstration will be linked to national efforts to create green markets for shade coffee.

39. The demonstrations will build on the existing 'state of the art' know-how. Results will be used to inform and adapt land use planning at all levels. The costs of these demonstrations will be shared by UNDP/GEF and the Government of Mexico, with UNDP GEF covering the costs of technical assistance, training and technical assessments, specifically to adapt and integrate productive systems to improve the quality of habitat for native species on crop and range lands, reduce carbon emissions, and, through sustainable intensification, decrease encroachment into the natural forest estate. The Government of Mexico will finance the costs of land, labor and material inputs and technical assistance for activities that, while necessary to generate global benefits, can also be justified in terms of the national cost/ benefit equation. This includes support to improve the quality and productivity of livestock, and crop varieties, marketing, distribution and micro-credit.

40. As a follow on to the demonstrations, and to promote replication of best practices and internalization of good management paradigms within extension systems for the productive sectors, the project would sponsor a comprehensive training program for contact farmers, and extension workers. This program will be based in existing vocational training sectors. The costs will be shared by UNDP/GEF (for the global environmental management dimensions) and the Government of Mexico. A total of 60 extension workers and 1500 contact farmers will benefit from training in the 3 regions. Support packages for the various productive sectors would then be systematically and strategically adapted, including information materials, inputs, marketing, distribution and credit support, so as to promote uptake of the improved production systems, and discourage conservation incompatible uses. The costs of such adaptation, of accompanying investments in plant and materials, and of extension will be borne entirely by the Government of Mexico[7].

OUTPUT 5: CONSERVATION SET ASIDES ARE ESTABLISHED AND BASIC CONSERVATION FUNCTIONS WITHIN THEM ARE FULLY OPERATIONALIZED. GEF: US$3.5721M; COFIN: US$4.7782M.

41. As part of the matrix of land uses, and to protect large habitat blocks as refuge for native

[7] The log frame provides an estimate of the area to be brought under integrated ecosystem management over the life of the project, by category of land use (natural forest, agro-forestry, silvo-pastoral systems, soil conservation etc.).

species, the project will also contribute towards the establishment of new protected areas, managed as communal or federal reserves, and management of the recently established Biosphere Reserve at Los Tuxtlas[8]. At Los Tuxtlas, the project will invest in infrastructure and equipment, including ranger posts and vehicles, to meet gaps in the inventory, and will provide funding for additional field staff, including rangers and a public relations officer. In La Chinantla and La Montaña, where protected areas are presently lacking, a comprehensive package of support will be extended to demarcate 3 new reserves (1 in La Chinantla, linking the 2 largest remaining habitat blocks and 2 in La Montaña), and fully operationalize protected area functions within them. The reserves will be established through an organic process, advanced as an outgrowth of community land management. The project would enter into a dialogue with Ejidos, indigenous leaders and large and medium landowners with the objective of reaching agreement on the protection of contiguous habitat blocks, defining appropriate land uses, and developing regulations. This work will be directed by a technical team, which will work in parallel with the community land use planners. The regulations and management plan(s) that result from these parallel processes will be integrated, to synergize management within the 3 reserves and their adjacent landscapes. The LMCs will oversee monitoring & evaluation with the support of SEMARNAP. Depending on the category of new protected areas that will be created, the estimated annual recurrent costs will roughly vary between US$0.8 to US$1.20 per hectare. These costs are based upon current recurrent cost levels within federal biosphere reserves in Mexico, however the project will as explained above in paragraph 37 make an extensive effort to generate new and additional fiscal and market mechanisms to generate reserve revenues.

42. Technical assistance will be extended to the regional PROFEPA offices to improve the rate of interception and successful prosecution of malfeasance under the new policies and management statutes. This will include the development of cadres of community forest rangers, improved 'intelligence' systems using networks of local informants, and definition of effective strategies for intercepting offenders. While the focus of the project is on creating positive incentives for ecosystem management with active community support, such action is needed to uphold the law. A training program, jointly designed by PROFEPA and local communities, will train these teams.

43. The GEF will fund construction of PA infrastructure, and supply equipment for surveillance, enforcement, outreach and other conservation functions. Depending on the site, infrastructure/equipment will include staff offices, vehicles, living quarters, interpretation centers, office equipment, communications equipment, and basic monitoring tools. Incremental operational costs, including recurrent staffing, utilities, outreach and maintenance costs, etc. would be shared between the GEF and the GoM, with the GEF contributions decreasing over time.

44. End of Project Situation: At project closure there will be improved ecosystem management efforts at the regional and local levels and a greater awareness to ensure long-term sustainability of these efforts with involvement by ejidos and comunidades. Multisectoral committees (COBIDES) and Local Management Committees (LMCs) will coordinate land-use planning, management and monitoring on the regional and local levels, respectively. The government will have strengthened its oversight and compliance capabilities, management of forest ecosystems and watersheds, and moved towards the integration of conservation and development policies through new participatory approaches, policy prescriptions and investments compatible with conservation goals. Replicable efforts in awareness raising, training, and sustainable agriculture demonstration projects will ensure that local capacities and interest exist to protect biodiversity while benefiting from compatible agro

[8] A range of conservation functions will be developed, including enforcement (boundary demarcation, surveillance and policing), public education, applied research and monitoring, and management of non timber resource harvests. Besides protecting wildlife, the protected areas will allow for the sustained production of environmental goods and services, including non timber resources, water, and pasture, and will secure future outdoor recreational use options.

forestry and silvo-pastoral systems. Local communities will in particular have received the skills to avoid land degradation and to adapt their use of natural resources to optimize their economic welfare yet preserve the remaining forest ecosystem. Mexico will have established three new set-asides and strengthened conservation in these sensitive areas.

LOGICAL FRAMEWORK MATRIX

<table>
<tr><th>Objectives</th><th>Indicator</th><th>Means of Verification</th><th>Assumptions & Risks</th></tr>
<tr><td>GOAL:</td><td colspan="3">Ecoregions: 1) Tehuantepec Moist Forest; 2) Sierra Madre del Sur Pine-Oak Forest; 3) Pacific Dry Forest</td></tr>
<tr><td>Ecologically sustainable development protects biological diversity, carbon sinks and hydrological functions in a representative sample of three ecoregions</td><td>1 Percentage of forest types in each site no less than 80% of 2001 baseline at project closure
<table><tr><th>FOREST TYPE</th><th>BASELINE Ha</th><th>% BASELINE IN 2009</th></tr><tr><td>Pine-Oak Forest</td><td>271,871 Ha.</td><td>217,503-271,871 Ha.</td></tr><tr><td>Trop.Dry Forest</td><td colspan="2">72,534 Ha.58,027-72,534 Ha.</td></tr><tr><td>Cloud Forest</td><td colspan="2">44,466 Ha.35,573-44,466 Ha.</td></tr><tr><td>Mangroves</td><td>523 Ha.</td><td>418-523 Ha.</td></tr><tr><td>Trop.Rain Forest</td><td>204,050 Ha.</td><td>163,240-204-050 Ha.</td></tr></table>2 Existence of indicator forest-dependent species [list] remain at project closure (year 2009)
3 No significant deterioration in water quality and quantity (stream flow and turbidity) from target focal sites beyond year 2001 baseline
<table><tr><td colspan="18">Water Quality (Turbidity-T) and Surface Runoff (Q) in Pilot Areas</td></tr><tr><td>Pilot Area</td><td colspan="2">1</td><td colspan="2">2</td><td colspan="2">3</td><td colspan="2">4</td><td colspan="2">5</td><td colspan="2">6</td><td colspan="2">7</td><td colspan="2">8</td></tr><tr><td>Sampling Point</td><td>S-A</td><td>B</td><td>A</td><td>B</td><td>A</td><td>B</td><td>A</td><td>B</td><td>A</td><td>B</td><td>A</td><td>B</td><td>A</td><td>B</td><td>A</td><td>B</td></tr><tr><td>Baseline:</td><td>Q=</td><td colspan="16"></td></tr><tr><td></td><td>T=</td><td colspan="16"></td></tr><tr><td>Year 1:</td><td>T=</td><td colspan="16"></td></tr><tr><td></td><td>Q=</td><td colspan="16"></td></tr><tr><td>Year 2:, Etc. through Year 8:</td><td colspan="17"></td></tr></table></td><td>1: GIS maps of land use

2+3: Environmental monitoring studies and sampling surveys

1-3: Field records and project evaluations</td><td>Mexico maintains political and economic stability
No significant increase in environmental threats (global warming, wildfires, earthquakes)
No major infrastructure projects carried out without application of integrated ecosystems management criteria
Focal sites are of sufficient size to maintain long-term ecological processes</td></tr>
<tr><td>IMMEDIATE OBJECTIVE:</td><td colspan="3">Sites: 1) La Chinantla, Oaxaca; 2) La Montaña, Guerrero; 3) Los Tuxtlas, Veracruz</td></tr>
<tr><td>Cross-sectoral integrated ecosystem management is operationalized with broad stakeholder participation in 3 sites.</td><td>1 Integrated ecosystem management paradigm operationalized in three sites, in accordance with land use capability, by project closure
<table><tr><th>LAND USE SITES</th><th>BASELINE</th><th colspan="3">ALTERNATIVE = Baseline+Ha</th></tr><tr><td></td><td></td><td>Tuxtlas</td><td>Montana</td><td>Chinantla</td></tr><tr><td>Natural Forest</td><td>579,237 Ha.</td><td>+750 Ha.</td><td>+700 Ha.</td><td>+3550 Ha.</td></tr><tr><td>Agrofor/Plantat.</td><td>20,672 Ha.</td><td>+1055 Ha</td><td>+3795 Ha.</td><td>+4150 Ha.</td></tr><tr><td>Annual Crops</td><td>79,123 Ha.</td><td colspan="3">79,123 (same + sustainable use)</td></tr><tr><td>Degraded Lands</td><td>93,409 Ha.</td><td>1393Ha.</td><td>84781 Ha.</td><td>0 Ha.</td></tr><tr><td>Pasture/Rangelands</td><td>247,506 Ha.</td><td>90913 Ha</td><td>112104Ha</td><td>42723 Ha.</td></tr><tr><td></td><td></td><td colspan="3">(managed rangelands)</td></tr></table>75% of the pilot area farmers and 5% of site farmers have adopted at least one project-promoted sustainable practice by project closure</td><td>1: GIS maps of land use change (in years 3, 5 & 8)
Project and BCI progress reports

2: Project field records, progress reports and</td><td>GoM remains committed to environmental protection, and sustainable development programs
SEMARNAP leadership under the new administration continues to be supportive of PRODERS and integrated ecosystem management
The GoM (Inter-institutional Collaboration Program - BCI “Bases de Colaboración Interinstitucional”) continues to operate and be supported by the eight primary rural development Secretariats
GoM supports NGO involvement</td></tr>
</table>

<table>
<tr><th>Objectives</th><th>Indicator</th><th>Means of Verification</th><th>Assumptions & Risks</th></tr>
<tr><td></td><td></td><td>evaluations</td><td>and democratic processes in conservation work
Local residents are willing to change land use practices for conservation benefits</td></tr>
<tr><td>Output 1: Institutional frameworks for integrated ecosystem management strengthened and functioning effectively at each site</td><td>1 One COBIDES established and operating effectively (scorecard) in each site by the end of year one
2 Local Management Committees established and covering 100% of the sub watershed communities in pilot areas, according to schedule (trigger for phase 2).
Number of Local Management Committees Established
SITE Los Tuxtlas Montana Chinantla
Year 2 1 2 2
Year 3 2 2 2
Year 4 1 2 1
TOTALS: 4 6 5
3 Regional awareness campaign designed and approved by the SCU in each site by the end of year one
4 Level of environmental awareness in children, Government officials and the general public meets campaign goals by years five and eight</td><td>1: Progress reports and project evaluations
2: Project progress reports, SCU meeting minutes, project evaluations; and independent assessments
3: Project progress reports, and campaign plans
4: Sociometric surveys</td><td>Continuity in local leadership provides a locus for learning and awareness
Education and media institutions willing to collaborate with project awareness activities
Government institutions open to awareness-raising
Institutional rigidities to cross-sector collaboration can be overcome</td></tr>
<tr><td>Output 2: Participatory planning and monitoring systems for adaptive and integrated management are established</td><td>1 Baseline biological and socioeconomic assessments completed and utilized in pilot areas by year two; bio-regional master/management plan completed by year three, updated by year six; project operating plans completed and updated annually
2 Information systems (SIRD database and GIS) showing environmental, biological, socioeconomic, and production-system trends, established and utilized according to plans, by year 3
3 Communities have developed and approved conservation plans in sub watersheds according to schedule (trigger for phase 2).
4 Annual monitoring and evaluation exercises completed, demonstrating acceptable accomplishment of results
5 Two or more cases of local participatory planning adopted in any site by</td><td>1: Project progress reports; assessments and plans
2: Geographic and database systems, and assessments; remote sensing imagery
3: Management plans; assembly meetings/acts, and agreement documentation
4: Monitoring and evaluation reports; technical progress reports</td><td>Community and other stakeholder conflicts can be resolved
Communities support and collaborate with the project, and governments support and collaborate with local communities
Local land tenure conflicts are resolvable
Baselines will faithfully represent “background” trends
Minimum infrastructure exists to support local information management
Local communities will share information regarding resource practices, economics, etc.</td></tr>
</table>

Objectives	Indicator	Means of Verification	Assumptions & Risks
	year five	5: Project evaluations and site survey	
Output 3: ***Enabling policy, legal and financial mechanisms and frameworks are instituted, providing incentives for replicating and sustaining management***	1 "Mainstreamed" resources (human and financial) for priority regions meeting leveraging targets by project closure 2 Baseline funding provided according to plan, and meeting annual leveraging targets by year five **(trigger for phase 2)** 3 Site-specific policy needs assessment and strengthening plans developed by year two and implementation of key recommendations initiated by year four **(trigger for phase 2)** 4 Feasibility of user fees (water, recreation, etc.) demonstrated, and instruments designed and approved by relevant authorities where feasible by year five **(trigger for phase 2)**, and piloted by year six 5 Training and complementary technical assistance completed successfully for multi-level and multi-criteria analysis, strengthening of environmental impact review/mitigation, and local statute adaptation/adoption by year three	1& 2: Project accounting reports, and progress reports 3: Policy assessments/plans; project progress reports 4: Technical and feasibility studies on financial mechanisms; agreements; project progress reports 5: Technical reports, project evaluations and progress reports	Institutions willing to carry out policy and regulatory reform Political and economic will exists to "internalize" environmental costs The public is willing to pay for conservation benefits Local populations are receptive to policy and regulatory prescriptions
Output 4: ***Sustainable use management models are piloted and promising approaches are replicated on a bio-regional scale***	1 Demonstration models planned and implemented successfully, according to schedule 2 65% percent of the farm population of the pilot areas have adopted project-promoted sustainable land management practices by 2009 3 1500 contact farmers in pilot areas recruited and demonstrating sustainable land management approaches by 2006. 4 50% or more of project-promoted models demonstrating social, economic and environmental feasibility by year four 5 Two or more cases of successful replication/adoption of each promising model in any site by year five	1: Project progress reports and evaluations 2: Official census figures and censuses of beneficiaries; technical assessments 3: Surveys of module operation and maintenance 4: Site-level technical assessments and surveys 5: Independent technical assessments	Sustainable practices exist for marginal lands of the focal sites Impact of population growth within sites remains manageable No major change in relative prices occurs against conservation compatible practices and land uses
Output 5: ***Three new conservation set asides established [one in Chinantla and two in Montana,] and conservation functions operationalized***	1 Three reserves with adequate management and infrastructure (scorecard), by project closure 2 Three protected areas decreed (one in Chinantla and two in Montaña), with broad stakeholder consensus and participation, by year 5 3 Four zoning plans completed for the Chinantla (2) and Montaña (2) pilot areas with community consensus by 2004 4 Consensus agreements covering 189 communities reached by year five	1: PA Monitoring/scorecard results; GIS 2: PA zoning maps and decrees 3: Zoning plans; project field records, and progress reports 4: Community agreements, assembly meeting minutes	SEMARNAP will have the will and resources to support additional PAs Qualified PA staff candidates exist to work in the area Local communities will have incentives to support protected areas

PROJECT ACTIVITIES

Phase I Activities (Year 1-5)	Phase II Activities (Year 6-8)
OUTPUT 1 - 1.1 Operationalize project management systems	
1.1.1 Advertise staff positions. 1.1.2 Establish project offices. 1.1.3 Equip project offices. 1.1.4 Hire project personnel. 1.1.5 Prepare work plans for the regional coordination units. 1.1.6 Finalize terms of reference for the sub-contracts. 1.1.7 Select sub-contractors through competitive bidding. 1.1.8 Establish and operate financial accounting and activity reporting system 1.1.9 Appraise evaluation reports and take necessary action to improve project delivery. 1.1.10 Conduct training workshops for project personnel. 1.1.11 Clarify project objectives and strategies with all major stakeholders. 1.1.12 Perform independent evaluation of the project to verify the achievement of pre-defined triggers for the graduation to phase 2.	1.1.13 Evaluate staff capabilities vis-à-vis phase II and revise TORs. 1.1.14 Revise staff structure and reinforce capabilities for site-based replication work. 1.1.15 Select sub-contractors through competitive bidding. 1.1.16 Maintain high standard of financial accounting and activity reporting. 1.1.17 Appraise evaluation reports and take necessary action to improve project delivery. 1.1.18 Perform terminal evaluation of the project.
1.2 Support the establishment and operations of COBIDES and LMCs	
1.2.1 Establish COBIDES and reach agreement of the terms of reference of each. 1.2.2 Prepare a joint work plan with the eight Federal Ministries and State Government Agencies. 1.2.3 Establish the social, geographic and other criteria for establishing LMCs. 1.2.4 Convene the local management committees (LMCs). 1.2.5 Establish regulations and by-laws to govern the COBIDES and LMCs. 1.2.6 Prepare work plans for the COBIDES and LMCs. 1.2.7 Develop an integrated (BCI) pilot area development plan, to be revised and updated every three years. 1.2.8 Train LMC members in strategic planning, social engagement, and negotiation methods and strengthen their environmental management skills. 1.2.9 Provide targeted training in environmental law and conflict resolution.	1.2.10 Develop plans for strengthening local capacities (beyond communities in the pilot sites). 1.2.11 Revise and update the joint work plan with the 8 federal ministries and the state government agencies. 1.2.12 Revise and update workplans for the COBIDES and the LMCs. 1.2.13 Select and train community motivators to disseminate new technologies and know-how 1.2.14 Expand training activities in accordance with the agreed capacity development plan.
1.3 Raise awareness and implement environmental education programs	
1.3.1: Develop strategies for building environmental awareness with stakeholder participation. 1.3.2 Design and develop training and promotional materials. 1.3.3 Initiate awareness outreach actions. 1.3.4 Convene teacher training workshops to engage primary school teachers in awareness raising and environmental education. 1.3.5 Monitor the efficacy of awareness activities and adapt strategies as necessary.	1.3.6 Refine awareness and environmental education activities and expand their geographical focus

Phase I Activities (Year 1-5)	Phase II Activities (Year 6-8)
OUTPUT 2 - 2.1 Establish information management, retrieval and analysis system.	
2.1.1 Design and establish a GIS and accompanying multi-attribute data base for each region 2.1.2 Acquire and interpret remote sensing imagery [scale: 1: 50,000]. 2.1.3 Provide training to enable end users to operate the information system.	2.1.4 Update information in the database, and incorporate information into the GIS. 2.1.5 Acquire and update remote sensing information [scale 1:50,000.] 2.1.6 Establish a clearinghouse facility for information dissemination
2.2 Implement environmental, economic and social feasibility studies	
2.2.1 Prepare an inventory of information on the social, environmental, and economic landscape, pertinent to the objectives of integrated ecosystem management. 2.2.2 Characterize and register traditional knowledge of ecological systems. 2.2.3 Perform social assessments to document landownership, usufruct systems, sociopolitical conflicts and gender issues of concern to environmental management. 2.2.4 Characterize productive systems for agriculture, livestock and forestry. 2.2.5 Undertake an ecosystem pattern/ use assessment, generating biological information required to prepare conservation plans. 2.2.6 Fine-tune activity design, based on the findings of feasibility studies.	2.2.7 Update the ecosystem patter/ use analysis within defined conservation 'hotspots'.
2.3 Support participatory management planning at the local and bioregional levels	
2.3.1 Convene community outreach teams and train team members in participatory planning, conflict resolution and other relevant skills. 2.3.2 Convene technical teams to assist Local Management Committees with planning efforts 2.3.3 Initiate participatory planning, involving all major stakeholders. 2.3.4 Establish consensus locally on allowable land uses, restrictions, and zoning regimen 2.3.5 Develop maps, plans and zoning agreements at the sub-watershed levels. 2.3.6 Formalize land use zones within the pilot areas following methodological norms established by SEMARNAP. 2.3.7 Consolidate the agreed zoning scheme into a 10-year bioregional management plan. 2.3.8 Provide support for the preparation of Local Management Plans within ejidos, comunidades and private land holdings within the framework of the bioregional management plan.	2.3.9 Revise the Bioregional Conservation Strategy Master/Management Plan. 2.3.10 Integrate Master Plan into BCI Unitary Sust. Dev. Plan. 2.3.11 Provide support to update Local Management Plans
2.4 Monitor project impacts by undertaking periodic assessments and evaluations	
2.4.1. Maintain a GIS- linked tracking system to measure project impacts. 2.4.2. Monitoring land use, and ecological and biological impacts. 2.4.3. Evaluate & monitor community activities, with attention to gender specific	2.4.7 Maintain a GIS- linked tracking system to measure project impacts. 2.4.8 Monitor land use changes, ecological and biological impacts in year 8. 2.4.9 Evaluate & monitor community activities, with attention to gender specific

Phase I Activities (Year 1-5)	Phase II Activities (Year 6-8)
differences. 2.4.4. Monitor and evaluate social/economic change in the pilot areas. 2.4.5 Integrate monitoring activities with SEMARNAP's wildfire prevention/control program. 2.4.6 Feed the results of process and impact monitoring into planning systems.	differences. 2.4.10 Document experiences applying conservation compatible productive systems. 2.4.11 Feed the results of process and impact monitoring into planning systems 2.4.12 Publish and disseminate project findings (lessons and best practices).
OUTPUT 3 - 3.1 Mainstream policy instruments at regional level	
3.1.1. Analyze instruments to incorporate integrated ecosystem management criteria and conservation objectives into sector policies and programs in the pilot areas. 3.1.2 Provide recommendations for policy reforms across the productive sectors. 3.1.3 Convene discussion forums with the different stakeholding groups on public policies, with the purpose of sensitizing them to the need for reform to accomplish environmental management objectives, and engage them in policy debate. 3.1.4 Draft policies and regulations to advance integrated ecosystem management objectives, and in particular to abet enforcement of management plans, and ensure that public services are appropriately geared. 3.1.5 Supply legal services, as necessary, to facilitate regulatory reform.	3.1.6 Backstop implementation of policy and regulatory measures identified in phase 1. 3.1.7 Supply legal services, as required, to consolidate regulatory reform.
3.2 Enhance local capacities to develop sound integrated ecosystem management polices, and execute management strategies	
3.2.1. Develop institutional capacities at state level to plan and execute integrated ecosystem management. 3.2.2. Ensure the adoption of zoning and environmental planning/management regulations, methodologies and procedures in pilot area municipalities. 3.2.3 Provide training to planners in integrated land use planning using multi-criteria assessments and other tools that measure tradeoffs between objectives.	3.2.4 Continue institutional strengthening activities, following assessment of outcomes. 3.2.5 Establish incentive mechanisms to promote adoption of improved and conservation compatible productive systems, by reorienting extension and other support programs for the productive sectors at the site level.
3.3 Strengthen capacities to enforce environmental regulations	
3.3.1 Develop safe minimum standard guidelines for environmental assessments. 3.3.2 Recruit and train community forest guards in pilot areas. 3.3.3 Sensitize NGO's and community based groups to objectives, strategies, plans and programs to enable them to monitor implementation and ensure due diligence.	3.3.4 Expand successful assessment, enforcement and surveillance models. 3.3.5 Train community forest guards outside the pilot areas but within the region.
3.4 Develop means to assure the financial sustainability of protected areas:	
3.4.1. Perform an economic assessment of the value of ecological goods and services supplied through integrated ecosystem management. 3.4.2. Undertake an analysis of willingness and ability to pay for environmental services.	3.4.7 Provide training, and establish the financial management, administrative and operating systems needed to operationalize the user fee regimes. 3.4.8 Monitor the application of user fees and take steps to improve delivery record.

Phase I Activities (Year 1-5)	Phase II Activities (Year 6-8)
3.4.3. Design user fee mechanisms, including revenue collection, and financial management, reporting and disbursement systems, in accordance with Mexican Law. 3.4.4 Develop a sustainable financing plan for protected areas 3.4.5 Confirm national counterpart funding to establish 3 new protected areas. 3.4.6. Obtain formal clearances from the concerned authorities to institute user fee regime, where proven to be feasible and cost-effective.	
OUTPUT 4 - 4.1 Appropriate Technology/Traditional Use Assessment:	
4.1.1. Carry out assessments of alternative land use options for the three regions within the agriculture, livestock husbandry, forestry and agro-forestry sectors, emphasizing the fit with local knowledge and environmental conditions. 4.1.2 Determine the technical and ecological feasibility of different land use options 4.1.3 Determine the economic and financial feasibility of defined land use options	4.1.4 Distill lessons from the introduction of alternative technologies, and disseminate experiences amongst decision makers at the regional and federal levels 4.1.5 Design and adapt the productive modules following an assessment of their efficacy.
4.2 Implement alternative community productive modules	
4.2.1 Identify communities and site locations for implementation of file demonstrations 4.2.2 Select women and men to act as community promoters (i.e. contact farmers) 4.2.3 Refine and disseminate eligibility criteria, methods and procedures for implementing alternative use modules 4.2.4 Assist the communities to procure inputs, equipment and supplies needed to implement the community based alternative use modules 4.2.5 Carefully record inputs, costs, benefits, productivity, labor requirements, and problems encountered, so as to evaluate the success and difficulties encountered 4.2.6 Train participants (contact farmers and extension workers) in the application of the appropriate technology under local conditions.	4.2.7 Continue field demonstration activities and take steps to resolve problem areas 4.2.8 Reassess the social, ecological and economic feasibility of improved land uses.
4.3 Replication to others farmers in pilot areas:	
4.3.1. Engage private sector/vendors to support/promote models. 4.3.2. Help standardize, regulate and certify “best practices”. 4.3.3. Develop and broadly disseminate extension materials 4.3.4. Promote replication through other agencies, especially SAGAR and SEDESOL and by leveraging co-financing, and credit.	4.3.5. Select locations within the sites for replication of phase 1 practices. 4.3.6. Provide support for the adoption of succesful models within the pilot areas. 4.3.7. Develop and broadly disseminate extension materials 4.3.8. Promote replication through other agencies, especially SAGAR and SEDESOL and by leveraging co-financing, and credit.
OUTPUT 5 - 5.1 Establish Protected Areas as refugia for native species	

Phase I Activities (Year 1-5)	Phase II Activities (Year 6-8)
5.1.1 Identify biological refugia, ecologically sensitive areas and biological corridors in Chinantla and Montaña in need of protection to preserve biological diversity. 5.1.2 With the assistance of LMCs, and with the participation of local communities, identify sites for the establishment of protected areas 5.1.3 Evaluate the social and economic feasibility of establishing protected areas 5.1.4 Develop a PA proposal, defining the categories of PAs to be established 5.1.5 Define incentive, compensation, and financing packages for each reserve and negotiate agreements with the local communities and other stakeholders. 5.1.6 Delineate protected area boundaries, prepare preliminary management plans and complete other preparatory work needed to gazette the reserves 5.1.7 Build local consensus on the objectives of each PA, and land use classifications. 5.1.8 Formalize protected areas by legal decree through due administrative process.	
5.2 Establish management plans for the 3 new protected areas	
5.2.1Prepare a five year management plan for each protected area, using participatory methods.	5.2.2 Develop annual operational plans for each PA 5.2.3 Obtain approval for the management and operational plans as required by Law.
5.3 Operationalize protected area management	
	5.3.1 Select and contract staff for each PA. 5.3.2 Develop and Procure the infrastructure and equipment needed for each PA. 5.3.3 Establish and train PA management teams. 5.3.4 Strengthen enforcement capabilities by establishing and training local ranger brigades 5.3.5 Assist PROFEPA to train staff in environmental review and impact mitigation. 5.3.6 Ensure regular maintenance of project infrastructure and equipment.

D. SUSTAINABILITY OF PROJECT RESULTS

45. Expected Benefits: The Global Community will benefit significantly from the protection of direct and indirect use values associated with forests, including carbon storage values. The project sites will provide an important repository of globally important flora and fauna, including a number of endemic species, at risk of extirpation elsewhere in Mexico, and the proposed bioregional management model has potential application in other globally important ecoregions within Mexico, for instance by providing a means for buffering threats to threatened protected areas. Carbon storage benefits will accrue from the protection of natural forests that otherwise might have faced conversion, natural restoration of degraded forests, and from investment in tree plantations. These potential benefits may be summarized as follows:

TABLE 3: CARBON SEQUESTRATION BENEFITS

TECHNOLOGY	LOS TUXTLAS	LA MONTAÑA	LA CHINANTLA	CARBON SAVINGS, in Millions of Metric Tons of Carbon
Forest Protection	3.92-6.0	1.24-2.276	5.073-8.61	10.233-16.89
Natural Forest Management	.1110-.1365	.686-.938	.3479-.4757	.5275-.706
Timber Plantations	.0672-.07875	.0283-.0385	.0329-.0401	.1284-.1572
Agro forestry	.01715-.0259	.049-.074	.0546-.0833	.1207-.1832
Fuelwood Plantations	.039	.499	.538	1.075
Totals	4.15-6.28	2.557-3.826	6.046-10.4968	12.35-18.74

Note: Carbon benefits result both from sequestration and emissions avoidance. Savings were calculated using co-efficients generated under the National Climate Action Program of Mexico, and assessments of probable land use with and without the project over a 20-year horizon. This Program, implemented by the National Institute of Ecology/SEMARNAP, was supported by USAID as part of the GCC Country Studies initiative. The principal investigators responsible for the national data (see Refs. 1997 and 1995b), are Omar Masera and Jose A. Benjamin Ordonez. A ground-truthing exercise is planned.

46. Local communities, 78% of whom are indigenous, constitute the primary domestic beneficiaries. These communities receive a number of ecological goods and services from forests, and social assessment work undertaken during project development has revealed an interest on their part in avoiding land degradation and other adverse manifestations of environmental deterioration. As economic and demographic changes in these communities have outpaced their ability to adapt land use practices to engender ecological sustainability, they have become locked in a cycle of degradation. The project will provide these communities with the technologies, know-how and inputs to adapt their land uses in ways that optimize their economic welfare while preserving the forest ecosystem. SEMARNAP staff will also benefit directly through exposure to new ecosystem management approaches, training opportunities and improvement in relations with their clients in local communities. Secondary beneficiaries—intermediaries in the delivery of project related services— include several non-government organizations, and government agencies, which will benefit from training. Given that the 3 regions are major catchment areas, the project will benefit downstream communities by reducing off-site externalities from watershed mismanagement.

47. Sustainability: The strongest argument in support of this project lies in fact that all the proposed activities have been developed following extensive liaison with affected local communities. In the long-term, global environmental benefit flows will hinge upon the ability of communities to uncover tangible benefits from environmental management, through development, and to internalize the costs and benefits of conservation in their land use allocation decisions. This fundamental is intrinsic to the project's objectives and strategies. Demonstration initiatives aim at identifying means of optimizing economic returns from land uses that are also more ecologically benign than current practices, factoring in the costs and benefits to stakeholders. The mobilization of significant co-financing and institutional agreements with SEMARNAP,

SAGAR, SEDESOL and the States demonstrates the Government's commitment to the approach. This commitment will be important to achieving long-term institutional and financial sustainability. But a major investment will also be made in advocacy /awareness raising to strengthen environmental consciousness amongst stakeholders so as to deepen commitment.

48. Eligibility for GEF Financing and Operational Programme fit: The project fulfils the objectives of the Convention on Biological Diversity by supporting *in situ* conservation (Article 18), ensuring the equitable distribution of benefits derived from biodiversity management (Articles 10,16 and 18), monitoring (Art. 7), awareness raising (Article 13), and institutional reinforcement (Article 12). The project also meets eligibility criteria for funding under the Framework Convention on Climate Change, and in particular, the provisions of Article 4 (1.b), (1.c),(1.d), (1.h), and Article 6 (a.iii). The project is fully consistent with the provisions of Operational Programme 12, Integrated Ecosystem Management, placing a significant emphasis on financial leverage, creating an enabling policy, legal and institutional environment for management, strengthening the capacities of institutions to coordinate responses to environmental dilemmas, and through providing technical assistance for field demonstration, removing constraints to uptake of improved production systems, compatible with conservation management objectives. The project will also generate benefits in three of the four focal environmental concerns targeted by the Programme.

49. GEF Programmatic Framework: The GEF is supporting conservation efforts in Mexico through a phased and sustained Programmatic Framework, building on priorities and strategies outlined in the National Biodiversity Action Plan. The Action Plan and accompanying National Biodiversity Strategy, financed by the GEF, were developed through a highly participatory process involving a cross section of Mexican society. The Strategy was developed following an assessment of conservation needs across Mexico, taking into account the degree of biological representation within the conservation estate, and a review of existing conservation approaches (see Mexico: Country Study on Biodiversity). A range of conservation priorities have been identified, reflecting the biological, ecological and social heterogeneity of Mexico, which include, *inter alia*, the integration of conservation and development objectives at bioregional scales, a priority addressed by this project. The GEF Programmatic Framework will leverage progressively deeper commitments to conservation in Mexico so as to facilitate the achievement of these priorities.

50. Link to UNDP CCF: UNDP's Country Cooperation Framework (CCF) for Mexico supports interventions that combine natural resource use with environmental protection measures. UNDP is assisting the Government of Mexico to meet its commitments under the Environmental Conventions through leveraging funding and supplying technical assistance. UNDP-Mexico also supports the GoM's efforts to engineer the active participation of civil society in the design, execution, and evaluation of environmental programmes. This project incorporates both the afore-mentioned support elements, and UNDP will play a key role in brokering agreements between stakeholders and ensuring that institutional covenants are honored.

51. Linkages with other GEF Projects: The project has been developed following close consultation with the other GEF Implementing Agencies through the in-country Inter-agency GEF Coordination Committee, the National GEF Project Coordination Committee, and, above all, the joint GEF-GoM working group that is preparing a Programmatic GEF Project Framework on biodiversity. Especially close links have been maintained with the architects of the Mexican Mesoamerican Biological Corridor project. [The option of including the three priority ecoregions targeted under PRODERS within the Corridor was considered during project preparation but, for spatial and other reasons, was found to be unworkable.] Informal and formal meetings will be convened with the managers of the Mexican Mesoamerican Biological Corridor project, building on the cooperation already established during project development. In addition, active coordination between the initiatives will be facilitated through the offices of Conabio particularly with regard to monitoring and evaluation (using their considerable experience in this key area).

In order to ensure that GEF interventions are jointly programmed with other initiatives, formal and informal linkages will be maintained between implementing entities. Furthermore the Programmatic framework with GEF on biodiversity conservation will promote coordination and synergies between individual projects and provide technical backstopping so as to abet mainstreaming and information sharing.

E. PROJECT MANAGEMENT ARRANGEMENTS

IMPLEMENTATION AND EXECUTION ARRANGEMENTS:

52. The Project will be executed by the Government of Mexico, with the support of the UNDP-Mexico Country Office. Overall responsibilities for execution will be vested with the Sustainable Regional Development Program Unit (PRODERS) within SEMARNAP. PRODERS will implement the project in partnership with other key Secretariats, NGOs, State governments, municipalities and communities, through institutional coordination frameworks established at the local, regional and federal levels. UNDP will administer GEF funding, and some national counterpart funding, maintain tight controls over the procurement of goods and services from vendors, recruit project personnel, and, together with SEMARNAP, ensure that commitments of counterpart funding are honored. A Memorandum of Cooperation and Letter of Agreement for the provision of support services will be signed between the national counterparts and UNDP to ensure that cost-sharing is administered by UNDP in accordance with the internal operational and administrative guidelines and rules of the federal support programs in question.

53. The Project will establish a small General Coordinating Unit, led by a Chief Technical Advisor (CTA), and backstopped by a finance officer, project assistant and technical experts, including a bioregional advisor and resource economist. Three Site Coordination Units (UCS) will be created in Los Tuxtlas, Chinantla and La Montaña, each staffed by a Regional Coordinator, administrative staff and technical specialists, as locally required. [Typically a Site Coordinating Unit would have a specialist in community and land use planning, as well as biodiversity, agriculture, agro forestry, and other experts, as required.] Finally, the Technical Teams would be complemented by teams of contact farmers, comprising local landowners (either smallholder farmers or pastoralists), responsible for implementing the field demonstrations.

54. The CTA and his/her staff will serve as the permanent link between the Regional Coordinators and UNDP-Mexico. He/she will backstop and provide assistance to all staff and promote and support project activities implemented at the national level. The Project Management Unit (PMU) (composed of the General Coordinating Unit and the Site Coordination Units) will be responsible for preparing work plans, budgets, and Terms of Reference for sub-contractors and consultants, and maintaining financial accounts and records according to the strict standards and rules established by UNDP for nationally executed projects. In close coordination with the Executing Agency and UNDP, the PMU will also monitor and evaluate the progress of project implementation in order to identify and resolve any bottlenecks and improve the quality of interventions. The PMU will arrange regular meetings with the Executing Agent and UNDP to review progress and impacts, customarily on a quarterly basis corresponding with the submission of financial reports and work plans. Finally the PMU will prepare and disseminate information on the project, and lead efforts to coordinate field activities with associated programs.

55. Steering Committee**:** A Project Steering Committee, established under the preparatory phase, will meet twice annually with the role of overseeing project planning and gauging performance, making and monitoring execution of policy recommendations, and supervising, supporting and promoting the initiatives of Project staff. Members will include SEMARNAP, UNDP, Federal Secretariats, the Chair of the 3 Regional PRODERS Boards, State Governments, and a representative of the national NGO community.

56. Federal Coordination: State and Federal Government agencies have shown interest and willingness to actively participate in the development of the project. This support is reflected in their commitment of funding. The General Director of PRODERS meets on a weekly basis with the General Directors of the 8 Secretariats that collaborate under the "Inter-institutional Cooperation Bases" (BCI) policy framework. Three of the most active Secretariats are SAGAR, SEDESOL and INI. The BCI framework will be capitalized upon fully in order to facilitate the high-level co-ordination of policies, strategies and funding.

57. Public Participation: Local stakeholders have been actively engaged in the process of designing the project and project strategies are premised upon active public participation in ecosystem management. However, it is recognized that a number of barriers to participation will need to be overcome. In particular, staff members of SEMARNAP and other concerned government organizations will need to be convinced of the utility of collaborative management through demonstration. An adaptive approach to participation will be employed, allowing strategies to be fine tuned during implementation following social assessments. The project will provide technical assistance to design participatory strategies, to broker dialogue among stakeholders, and build institutional capacities locally and regionally to implement participatory management. The following specific measures are proposed:

Activity	**Responsible Agencies**	**Means of Verification**
Establish working relationships with the principal NGOs and CBOs operating in La Montaña, Los Tuxtlas, and Chinantla, engaging them amongst other things, in awareness raising and project evaluation.	SEMARNAP-PRODERS, SEDESOL delegations, SAGAR-delegations, PMU	Annual Project Reports (APRs) will document the involvement of NGOs and CBOs in project implementation, monitoring & evaluation.
Form Local Management Committees (LMC's) in sub watersheds, representing ejidos, comunidades and private landholdings and task them with coordinating land use planning, management and monitoring. LMC Members will be trained in planning, negotiation and monitoring methods. The composition of the LMCs will be determined following preliminary social assessment.	SEMARNAP-PRODERS, PMU,	Number of LMCs formed, compared against project targets; Assessment of the quality of sub watershed plans; Field appraisal during the two scheduled independent evaluations.
Recruit teams of community motivators within each LMC jurisdiction to mobilize communities, and train them in social engagement and conflict resolution methods. The community motivators will maintain a two-way flow of communication between the communities and project implementers and government authorities on project activities and provide a means of advocacy.	SEMARNAP-PRODERS, LMC, PMU	Continuous project monitoring by PMU on the recruitment of field teams; Assessment of field reports; Field appraisal during the two scheduled independent evaluations.
Work with school teachers as vehicles of information dissemination within the target communities.	SEP, SEDESOL-INI, SEMARNAP-CECADESU-PRODERS, PMU	Annual Project Reports
Establish hands-on training programs; materials will suit local needs and circumstances (e.g., bilingual radio programs, illustrative materials to reach illiterate audiences, training in vernacular tongues).	SEP, SEDESOL-INI, SEMARNAP-CECADESU-PRODERS, PMU	Training materials Annual Project Reports
Enable communities to determine the measures necessary to improve and sustain their quality of life beyond the life of this project. Develop and implement concrete pilot projects that can be easily replicated to meet the needs of comunidades and ejidos. Build capacity to ensure that programs with	SEMARNAP-PRODERS, SEDESOL-Regional development programs, SAGAR-Regional programs, PMU	An independent evaluation will be carried out at the end of phase1, measuring the impact of pilot projects and their replication potential. In addition annual internal evaluations will

Activity	Responsible Agencies	Means of Verification
an economic or commercial component can be managed successfully and provide equitable benefits.		be conducted to monitor the progress of capacity building and local receptiveness to alternative land uses promoted.
Ensure that the Chinanteco, Tlapanec, Nahua, Mixteco, Zoque and Popoluca tribes are treated as distinct individual cultural groups with particular needs and not simply as "Indians." Build sensitivity among government officials to indigenous cultures, and encourage a dialogue between the communities and government officials.	SEMARNAP-PRODERS, SEDESOL-INI PMU	SIA, utilizing the considerable experience of SEDESOL-INI and specialized national NGOs
Undertake Social Impact Assessments (SIA) as part of monitoring under the adaptive management approach. SIAs will track social responses and relations and gauge the success of participation, and provide feedback to management and project strategies.	SEMARNAP-PRODERS, SEDESOL-INI PMU	Biennial SIA Reports Annual Project Reports
Assess progress in attaining participatory management objectives in Annual Progress Reports; report to the GEF on lessons learned during the annual Project Implementation Review (PIR) conducted with the GEF Secretariat. Promote participation by sharing lessons learned from other UNDP and GEF projects, catalyzing networks, and, when necessary, contributing to dispute mediation.	UNDP	Participation will be a focal area of review during the two scheduled independent evaluations of the project. The Evaluation teams will include a sociologist familiar with participatory methods and their application in integrated conservation and development. Project Implementation Review.

58. Project Risks: This project is experimental and has several attached risks, described in brief below. The assumptions underpinning design are provided in the logical framework. The risks need to be judged against the global benefits deriving from successful intervention, particularly the 'spin-offs' from replication. A number of risk abatement measures have been internalized into design, as explained below.

Risk	Rating	Abatement Measure
Lack of local interest in adopting new technologies, farming and silvo-pastoral systems.	M	Local communities have been actively involved in planning the proposed demonstrations, lessening the risk. This risk will be further diminished through a careful and structured campaign to involve communities in planning and designing new management systems. System design will be informed by an economic appraisal of the relative costs, benefits and risks of technological innovation.
Breakdown in agreement between Federal and State authorities on ecosystem management fundamentals, causes mis-match between management needs & agency response.	L	The Steering Committee will play an active role in negotiating coordination agreements and resolving institutional conflicts. The phased approach is designed to enhance the policy leverage exercised through the project. The careful cultivation of partnerships with non-Government organizations and communities initiated during the preparatory phase aims at building new constituencies for management that can demand accountability for service delivery.
Delays in the appropriation of financial commitments.	M	The appropriation of co-financing in phase 1 is a pre-requisite for graduation to phase 2. Additionally, SEMARNAP will commit co-financing for Outputs 1 and 4 through UNDP under a special agreement (providing greater predictability regarding budgetary appropriations) A disbursement plan for co-financing has been prepared; this will be reviewed every year,

Risk	Rating	Abatement Measure
		and the release of project resources will be contingent on realization of the plan.
No major infrastructure projects carried out without the application of integrated ecosystem management criteria's	M-L	The Transport Ministry is represented on the board of the 8 collaborating ministries (BCI), and major infrastructural works will be scrutinized to ensure conformity with environmental management plans. Such projects are also coordinated with the state counterparts and the corresponding municipalities, all of which are participants in the institutional framework for PRODERS.
Focal sites are of sufficient size to maintain long-term ecological processes	L	Ecological factors will be accommodated in designing the protected areas, in close consultation with local stakeholders
GOM remains committed to environmental protection and support regional integrated ecosystem and protected area management	L-M	UNDP will maintain an ongoing policy dialogue with the Government to confirm commitments within the project frame
Conflicts of interest among stakeholders delay consensus building and problem solving.	M-L	The regions have been selected in part because they are served by an active and organized non-Government sector, able to challenge vested industrial interests. A heavy investment in conflict resolution is planned under output 1. The project will forge strategic partnerships with key decision-makers to build consensus. Careful weight will be placed on negotiation skills in selecting project staff.

H=high M= medium L= low

MONITORING AND EVALUATION ARRANGEMENTS

59. Monitoring. A number of indicators of impact have been selected, and will be monitored closely under the project. These include the area of the largest remaining habitat blocks, area under cultivation, number and area of livestock ranches, frequency and intensity of wildfires and storm flows, sediment loads, and area under restoration. Specific targets for these indicators are provided in the logical framework. These parameters will be monitored at 3 points: year 1, to ground truth baselines, year 4 and year 8 of implementation, using a variety of tools, including aerial imagery, field verification, and reports from informants. Impact monitoring will be accompanied by process monitoring activities aimed at uncovering the social, economic and other determinants of impact, regardless of whether trends are positive or negative, so as to provide a basis for adapting management regimes. Such monitoring, which will be undertaken biennially, will include a social assessment to establish social impacts and social responses to management, assess the costs and benefits faced by different groups (smallholders, indigenous groups, women etc), the spatial distribution of costs and benefits, and changes in the composition of stakeholding groups.

60. Evaluation. The project team, SEMARNAP and the Steering Committee, will regularly evaluate project activities. Annual mandatory evaluations will be performed, and results will be used to adapt project strategies. Additionally, annual planning exercises carried out with the participation of community members, peasant organizations and NGOs will provide an organic process for informing strategies. UNDP will inform GEF of these evaluations during the annual Project Implementation Review. Evaluation reports will also be made available to the public, and will be shared with other projects sponsored by GEF under the Programmatic Framework for Mexico as well as with the Meso American Biological Corridor initiative. Close cooperation with these initiatives will facilitate mutual learning, and strengthen strategic planning.

61. Two mandatory Independent Evaluations are scheduled, one in year 5, prior to the completion of phase 1 and the second upon project termination. The phase 1 review will check to ensure that the triggers for commencement of phase 2 have been satisfied. The terminal evaluation will document the lessons learned from the project—to inform further policy development.

62. Prior Obligations: The project document will be co-signed by UNDP and representatives of the Government of Mexico. UNDP assistance to the project will be provided subject to UNDP being satisfied that the prerequisites listed below have been fulfilled or are likely to be fulfilled. When fulfillment of one or more prerequisites fails to materialize, UNDP may, at its discretion, either suspend or terminate its assistance.

GENERAL PREREQUISITES

a) The institutional roles and responsibilities of SAGAR, SEDESOL, SEMARNAP and UNDP should be clarified through formalization of a Memorandum of Cooperation.

b) A Letter of Agreement between UNDP and the institutions for the provision of support services shall have been signed

PREREQUISITES FOR PHASE 2

c) Local Management Committees have been established with jurisdiction over communities in pilot areas;

d) Communities have developed and approved conservation plans in sub watersheds according to schedule;

e) Site-specific policy needs assessment and strengthening plans are developed and key recommendations initiated;

f) Baseline funding is provided according to schedule;

g) There is agreement by relevant federal and state authorities to pilot user fees (water, recreation, etc.) where feasibility is established;

h) Protected areas are decreed (in Chinantla and in Montaña), with broad stakeholder participation.

F. FINANCIAL MANAGEMENT ARRANGEMENTS

63. Cost-effectiveness: In the past, enormous amounts of funds have been targeted towards regional sustainable development and conservation in Mexico in an uncoordinated manner. These programs have been often ineffective in conserving biodiversity and improving rural welfare because they have failed to explicitly recognize the interconnectedness of social, economic and ecological systems. Ecological degradation has imposed off-site externalities on local and global communities, not factored into the cost-benefit calculus of development. This project will address these shortcomings, and, by better integrating economic policy objectives and development strategies with conservation, should improve the efficacy of both rural development and forest conservation efforts. In the longer term, the integrated approach is expected to enhance the cost-effectiveness of conservation. Also, management intervention in the 3 ecoregions will be more cost effective now than later, when degradation in some areas may be irreversible.

64. Incremental Costs: The total cost of the project amounts to US$ 76.8951 million of which 20% or US$ 15.3000 million will be appropriated by the GEF to cover the incremental costs of integrated ecosystem management, and US$ 61.5951 million committed by the Government of Mexico. The baseline

is estimated at US$ 154.4970 million. The GEF grant amounts to a modest 7% of the total cost of the GEF Alternative. Co-financing has been committed by three federal agencies, namely SEMARNAP, SAGAR and SEDESOL, and by the State Governments. In general terms, these Secretariats will finance the costs of sustainable development activities that generate tangible domestic benefits. In particular, this will include funding for community resource planning and management, farm extension services, infrastructure (nurseries), and inputs for intensified farming and improved silvo-pastoralism. The GEF contribution is geared towards removing technical and institutional barriers to integrated ecosystem management. The GEF will fund activities with uncertain, diffuse or long-term benefits, including the cost of operationalising protected areas, gathering data on biodiversity, providing technical assistance to modify natural resource management practices to sustain that diversity, creating or reinforcing institutional capacities for integrated ecosystem management and monitoring carbon sequestration. Project cost data are summarized below:

TABLE 5: OUTPUT BUDGET

PROJECT OUTPUTS	**PHASE 1 (US$)**			**PHASE 2 (US$)**			**TOTAL**
	GEF	**GOVERNMENT COFINANCING**		**GEF**	**GOVERNMENT COFINANCING**		
Output 1		SAGAR	1.9585		SAGAR	1.0612	
		SEMARNAP	1.5098		SEMARNAP	0.7278	
Subtotal	**2.8533**		**3.4683**	**1.2640**		**1.789**	**9.3746**
Output 2		CONABIO	0.3358		CONABIO	0.1492	
		SEMARNAP	2.8345		SEMARNAP	0.4141	
Subtotal	**1.7096**		**3.1703**	**0.5528**		**0.5633**	**5.9960**
Output 3		SEMARNAP	0.3776		SEMARNAP	0.2265	
Subtotal	**0.9380**		**0.3776**	**0.5452**		**0.2265**	**2.0873**
Output 4		SAGAR	14.0939		SAGAR	2.1769	
		SEMARNAP	6.5940		SEMARNAP	3.0090	
		SEDESOL	15.0572		SEDESOL	5.8344	
		SEDAP	0.2856		SEDAP	0.1714	
Subtotal	**3.3683**		**36.0307**	**0.4970**		**11.1917**	**51.0877**
Output 5		SEMARNAP	1.559		SEMARNAP	1.1266	
		SEDESOL	0.7053		SEDESOL	0.5319	
		SEDAP	0.5347		SEDAP	0.3208	
Subtotal	**1.6557**		**2.7983**	**1.9161**		**1.9794**	**8.3495**
Total: Full Project	**10.5249**		**45.8452**	**4.7751**		**15.7499**	**76.8951**
Project Preparation	GEF: US$0.3500 GoM: US$0.1200						
Grand Total Phase 1 + Phase 2				**GEF**	**Co financing**		**Total**
				15.6500		61.7151	77.3651

65. Disbursement Arrangements: UNDP-Mexico's Finance Section will establish and maintain financial accounts for the Project. Two payment modalities will be adopted, differentiated by input and budget line as indicated in the schedule below. UNDP-Mexico will be responsible for making direct payments to personnel and vendors under certain budget lines. For other inputs, advance payments will be made to the Project Management Unit on a quarterly basis, based on the disbursement schedule contained in the budget and detailed work plans to be elaborated by the PMU. The Project Management Unit will open a project account as a repository of funds for the purpose. The Project Administrator will be required

to prepare a quarterly financial statement together with a complete expenditure account and updated work plan, which will be reviewed and approved by UNDP's Finance Section prior to the release of further disbursements. The CTA will be responsible for monitoring the commitment of funds under each budget line.

TABLE 6: DISBURSEMENT ARRANGEMENTS

Budget Line and Input Descriptions	Payment Modality	
	Direct Payment by UNDP	Quarterly Disbursements to PMU
11 International Experts	X	
13 Administrative Support Personnel	X	
15 Duty Travel		X
16 Mission Costs	X	
17 National Professional Personnel	X	
20 Subcontracts < US$30.000		X
20 Subcontracts > US$30.000	X	
30 Training (local)		X
30 Training (regional and national)	X	
34 Workshops (local)		X
34 Workshops (regional and national)	X	
40 Equipment < US$30.000		X
40 Equipment > US$30.000	X	
50 Miscellaneous Expenses		X

66. UNDP will arrange for a mandatory annual financial audit of the project by a private accounting firm for the purposes of assessing the efficacy of financial accounting and monitoring and equipment control systems. More specifically, the audit will confirm that:

a) Financial disbursements are being made in accordance with agreed project activities and input budgets, and are supported by adequate documentation

b) Quarterly financial reports are accurately presented

c) Appropriate management structures, internal controls and record- keeping systems are being maintained

d) Procurement, control and disposal requirements for non-expendable equipment are met.

67. Goods: Goods to be procured under the project consist of computer hardware and software, office equipment, furniture, promotional material, agro forestry equipment, laboratory equipment and vehicles. These will be grouped for procurement purposes. UNDP-Mexico will be responsible for local and international procurement of non-expendable equipment (costing more than US$ 30,000) following established UNDP rules and regulations. The PMU with the assistance of UNDP and SEMARNAP will prepare technical specifications for all project equipment and supplies, and will establish and maintain a property ledger for all non-expendable equipment purchased with project funds. All procurement decisions will be made according to a transparent and competitive bidding process that clearly maintains financial accountability.

68. Consultants: The selection and appointment of consultants for training, studies, technical assistance and promotional activities will follow UNDP's established rules and regulations. The PMU will be responsible for preparing detailed Terms of Reference for subcontracted activities, including functions,

responsibilities, deliverables, measures for ensuring financial accountability and reporting requirements. In all cases, subcontracting will follow competitive processes, as established by UNDP guidelines. A Selection Committee comprised of the PMU and SEMARNAP with the support of the staff of UNDP-Mexico will be in charge of evaluating proposals based on their technical and financial quality. The evaluation process will be reviewed by UNDP-Mexico's Local Contracts Committee (for contracts between US$30,000 and US$100,000) and UNDP-HQ´s Advisory Procurement Committee (for contracts above US$100, 000). Terms of Reference, short lists, letters of invitation and draft contracts for consultancies valued above US$30,000, would be subject to prior review by UNDP-Mexico before evaluation by the Selection Committee. UNDP-Mexico will be responsible for the procurement of consultant services once commissioned.

G. LEGAL CONTEXT

69. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Mexico and the Special Fund, then the United Nations Development Programme, signed by the parties on 23rd July 1963. The host country-Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating/Executing Agency described in that Agreement. Nothing contained within this document or in contractual documents signed in light of this document, will be interpreted as an explicit or tacit renouncement of the immunity of jurisdiction, privileges, exceptions or other immunity enjoyed by UNDP in virtue of the Convention of prerogatives and immunities of the United Nations, to which the Government of Mexico is signatory. The Government of Mexico will assume the risks associated with the operations initiated by this project, and will respond to any claims made by third parties against UNDP, their employees or other people delivering project services in their name. This disposition will not apply in the circumstances where UNDP and the Government of Mexico can prove that the complaints and the corresponding responsibilities are consequences of serious neglect or international misconduct on behalf of the people mentioned.

70. The following types of revisions may be made to this Project Document with the signature of the UNDP Resident Representative, provided he or she is assured that the other signatories of the Document have no objections to the proposed changes:

a) Revisions or additions to any of the annexes of the project document;

b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by the rearrangement of inputs already agreed to or by cost increases due to inflation; and

c) Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

H.1 UNDP-GEF INPUT BUDGET (US$)

Main Source of Funds: 1G – GEF
Executing Agency: SEMARNAP
MEX/00/G31/A/1G/99 PROJECT
Budget "A

SBLN	DESCRIPTION		Y1	Y2	Y3	Y4	Y5	sub.-total	Y6	Y7	Y8	Sub-total	TOTAL
10	**PROJECT PERSONNEL**												
11	**International Personnel**												
11.01	Bioregional man expert	Net Amount	20,000	40,000	40,000	20,000	40,000	160,000	40,000	0	0	40,000	**200,000**
11.99	International personnel sub-total	Su-total	20,000	40,000	40,000	20,000	40,000	160,000	40,000	0	0	40,000	**200,000**
13	**Support administrative personnel**												
13.01	Project assistant General Coordination	Net Amount	27,807	28,641	29,500	29,798	30,692	146,438	31,613	32,562	33,538	97,713	**244,151**
13.02	Finance Officer General Coordination	Net Amount	20,856	21,481	22,126	22,350	23,020	109,833	23,711	24,422	25,155	73,288	**183,121**
13.03	Administrative assistant -Chinantla.	Net Amount	18,075	18,617	19,176	19,371	19,952	95,191	20,550	21,167	21,802	63,519	**158,710**
13.04	Administrative assistant – Montaña	Net Amount	18,075	18,617	19,176	19,371	19,952	95,191	20,550	21,167	21,802	63,519	**158,710**
13.05	Administrative assistant –Tuxtla	Net Amount	18,075	18,617	19,176	19,371	19,952	95,191	20,550	21,167	21,802	63,519	**158,710**
13.06	Secretary General Coordination	Net Amount	11,123	11,457	11,800	11,921	12,279	58,580	12,647	13,027	13,418	39,092	**97,672**
13.07	Secretary - Chinantla	Net Amount	9,733	10,025	10,326	10,432	10,745	51,261	11,067	11,399	11,741	34,207	**85,468**
13.08	Secretary - Montaña	Net Amount	9,733	10,025	10,326	10,432	10,745	51,261	11,067	11,399	11,741	34,207	**85,468**
13.09	Secretary - Tuxtla	Net Amount	9,733	10,025	10,326	10,432	10,745	51,261	11,067	11,399	11,741	34,207	**85,468**
13.99	Administrative support sub-total	Sub-total	143,210	147,505	151,932	153,478	158,082	754,207	162,822	167,709	172,740	503,271	**1,257,478**
15	**Travel**												
15.01	Travel	Net	63,000	63,000	63,000	63,000	63,000	315,000	63,000	62,000	60,000	185,000	**500,000**

		Amount											
15.99	Travel sub-total	Sub-total	63,000	63,000	63,000	63,000	63,000	315,000	63,000	62,000	60,000	185,000	**500,000**
17	**National Personnel**												
17.01	Chief Technical Advisor	Net Amount	71,000	73,130	75,324	76,080	78,363	373,897	80,713	83,135	85,629	249,477	**623,374**
17.02	Regional Director – Chinantla	Net Amount	36,000	37,080	38,192	38,577	39,735	189,584	40,927	42,154	43,419	126,500	**316,084**
17.03	Regional Director – Montaña	Net Amount	36,000	37,080	38,192	38,577	39,735	189,584	40,927	42,154	43,419	126,500	**316,084**
17.04	Regional Director – Tuxtlas	Net Amount	36,000	37,080	38,192	38,577	39,735	189,584	40,927	42,154	43,419	126,500	**316,084**
17.05	Environmental Economist	Net Amount	25,027	25,778	26,551	26,819	27,624	131,799	28,453	29,306	30,185	87,944	**219,743**
17.06	Institutional development advisor	Net Amount	25,027	25,778	26,551	26,819	27,624	131,799	28,453	29,306	30,185	87,944	**219,743**
17.07	Policy analyst	Net Amount	10,000	20,000	20,000	10,000	10,000	70,000	10,000	10,000		20,000	**90,000**
17.99	National personnel sub-total	Sub-total	239,054	255,926	263,002	255,449	262,816	1,276,247	270,400	278,209	276,256	824,865	**2,101,112**
19.00	**PROJECT PERSONNEL TOTAL**	**Total**	465,264	506,431	517,934	491,927	523,898	2,505,454	536,222	507,918	508,996	1,553,136	**4,058,590**
	SUBCONTRACTS												
21.01	Alternative natural resource management- Chinantla *	Net Amount	71,074	142,148	142,148	142,148	142,148	639,666	108,707	43,898	43,898	196,503	**836,169**
21.02	Alternative natural resource management- Montaña *	Net Amount	92,735	180,015	180,015	180,015	180,015	812,795	163,650	57,277	57,274	278,201	**1,090,996**
21.03	Alternative natural resource management- Tuxtlas *	Net Amount	61,823	120,010	120,010	120,010	120,010	541,863	109,100	38,185	38,188	185,473	**727,336**
21.04	Social outreach, planning, local capacity building and awareness raising-Chinantla	Net Amount	144,094	234,154	234,154	234,154	234,154	1,080,710	182,809	144,094	33,337	360,240	**1,440,950**
21.05	Social outreach, planning, local capacity building and awareness raising- Montaña	Net Amount	144,094	234,154	234,154	234,154	234,154	1,080,710	182,809	144,094	33,337	360,240	**1,440,950**
21.06	Social outreach, planning, local	Net	144,096	234,154	234,154	234,154	234,154	1,080,712	182,810	144,096	33,332	360,238	**1,440,950**

* The alternative natural resource management contract includes all the field demonstration modules with technical assistance and prefeasibility assessments

	capacity building and awareness raising-Tuxtlas	Amount											
21.07	Monitoring and Reporting System,	Net Amount	264,203	123,697	62,172	93,696	43,697	587,465	84,200	12,173	81,205	177,578	**765,043**
21.08	Establishment of financial mechanisms	Net Amount	0	0	86,926	90,000	90,000	266,926	73,334	53,333	33,333	160,000	**426,926**
29.00	**SUBCONTRACTS TOTAL**	Total	**922,119**	**1,268,332**	**1,293,733**	**1,328,331**	**1,278,332**	**6,090,847**	**1,087,419**	**637,150**	**353,904**	**2,078,473**	**8,169,320**
	TRAINING												
33.01	Regulatory support workshops	Net Amount	29,182	29,182	29,182	29,182	29,181	145,909				0	**145,909**
33.02	Workshops to interchange integrated management experiences on a national and international scale	Net Amount	16,000	16,000	16,000	16,000	16,000	80,000				0	**80,000**
33.03	Administrative training to facilitate community level implementation and management	Net Amount	29,784	29,784	29,784	29,784	29,787	148,923				0	**148,923**
39	**TRAINING TOTAL**	Total	**74,966**	**74,966**	**74,966**	**74,966**	**74,968**	**374,832**	**0**	**0**	**0**	**0**	**374,832**
45	**EQUIPMENT**												
45.01	Equipment operation and maintenance	Net Amount	15,300	73,925	73,925	73,925	73,925	311,000	63,000	63,000	63,000	189,000	**500,000**
45.02	Purchase of office equipment	Net Amount	84,500	0	0	0	14,000	98,500	0	0	0	0	**98,500**
45.03	Purchase of computing equipment	Net Amount	59,800	0	0	0	33,000	92,800	0	0	0	0	**92,800**
45.04	Purchase of vehicles	Net Amount	140,000	0	0	0	0	140,000	0	0	0	0	**140,000**
45.05	Purchase of field equipment	Net Amount	34,490	0	0	0	340	34,830	0	0	0	0	**34,830**
45.06	Support for Project Execution	Net Amount	77,054	64,475	62,321	56,333	60,227	320,410	42,156	38,382	40,180	120,718	**441,128**
49.00	**EQUIPMENT TOTAL**	Total	**411,144**	**138,400**	**136,246**	**130,258**	**181,492**	**997,540**	**105,156**	**101,382**	**103,180**	**309,718**	**1,307,258**
	MISCELLANEOUS												
52.01	External evaluations	Net Amount					50,000	50,000			50,000	50,000	**100,000**

52.02	Audits	Net Amount	5,000	5,000	5,000	5,000	5,000	25,000	5,000	5,000	5,000	15,000	**40,000**
53.11	Land rent	Net Amount	10,000	10,000	10,000	10,000	10,000	50,000				0	**50,000**
53.12	Support to COBIDES	Net Amount	18,750	18,750	18,750	18,750	18,750	93,750	18,750	18,750	18,750	56,250	**150,000**
53.13	Operation costs-Reserves	Net Amount	37,500	37,500	37,500	37,500	37,500	187,500	212,500	175,000	150,000	537,500	**725,000**
53.14	Infrastructure costs-Reserves	Net Amount	150,000	0	0	0	0	150,000	100,000	50,000	25,000	175,000	**325,000**
59.00	MISCELLANEOUS TOTAL	Total	**221,250**	**71,250**	**71,250**	**71,250**	**121,250**	**556,250**	**336,250**	**248,750**	**248,750**	**833,750**	**1,390,000**
99	TOTAL GEF CONTRIBUTION	Total	**2,094,743**	**2,059,379**	**2,094,129**	**2,096,732**	**2,179,940**	**10,524,923**	**2,065,047**	**1,495,200**	**1,214,830**	**4,775,077**	**15,300,000**

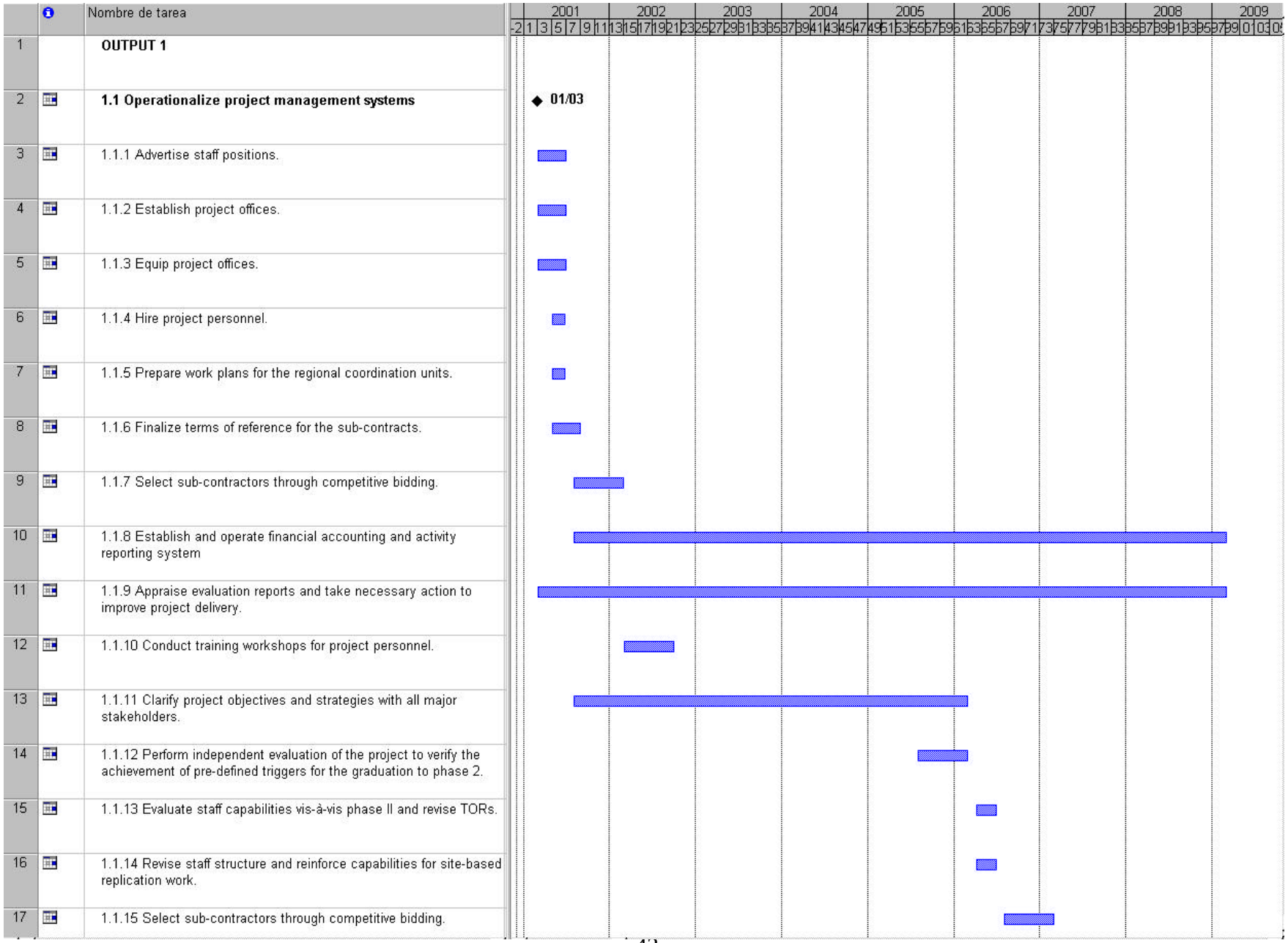
H.2 SCHEDULE OF CO-FINANCING (US$)

Main Source of Funds: 1G - GEF
Executing Agency: SEMARNAP
MEX/00/G31/A/1G/99 PROJECT
Co financing Budget "A"

SBLN	DESCRIPTION		Y1	Y1	Y3	Y4	Y5	sub.-total	Y6	Y7	Y8	Sub-total	TOTAL
20	**SUBCONTRACTS**												
21.01	Alternative natural resource management- Chinantla	Net Amount	1,165,818	2,623,090	2,623,090	2,623,090	2,623,092	11,658,180	1,554,424	1,165,818	1,165,819	3,886,061	**15,544,241**
21.02	Alternative natural resource management- Montaña	Net Amount	1,537,058	3,458,381	3,458,381	3,458,381	3,458,383	15,370,584	2,049,411	1,537,058	1,537,052	5,123,521	**20,494,105**
21.03	Alternative natural resource management- Tuxtlas *	Net Amount	703,637	1,583,184	1,583,184	1,583,184	1,583,185	7,036,374	938,183	703,637	703,639	2,345,459	**9,381,833**
21.04	Social Outreach, Planning, Local Capacity Building and Awareness Raising- Chinantla	Net Amount	340,175	557,888	551,084	551,084	551,084	2,551,315	432,022	340,175	78,240	850,437	**3,401,752**
21.05	Social Outreach, Planning, Local Capacity Building and Awareness Raising- Montaña	Net Amount	340,175	557,888	551,084	551,084	551,084	2,551,315	432,022	340,175	78,240	850,437	**3,401,752**
21.06	Social Outreach, Planning, Local Capacity Building and Awareness Raising- Tuxtlas	Net Amount	340,176	557,887	551,084	551,084	551,084	2,551,315	432,024	340,176	78,242	850,442	**3,401,757**
21.07	Monitoring and Reporting system	Net Amount	945,770	786,907	547,900	140,558	238,475	2,659,610	0	0	525,841	525,841	**3,185,451**
21.08	Establishment of Financial Mechanisms	Net Amount			93,750	93,750	93,750	281,250	56,250	56,250	56,250	168,750	**450,000**
29.00	**SUBCONTRACTS TOTAL**	Total	**5,372,809**	**10,125,225**	**9,959,557**	**9,552,215**	**9,650,137**	**44,659,943**	**5,894,336**	**4,483,289**	**4,223,323**	**14,600,948**	**59,260,891**
	TRAINING												
33.01	Regulatory support workshops	Net Amount	19,261	19,261	19,261	19,262	19,262	96,307	19,261	19,261	19,261	57,783	**154,090**
33.02	Workshops to interchange integrated management experiences on a national and international scale	Net Amount	56,083	56,083	56,083	56,083	56,083	280,415	56,083	56,083	56,083	168,249	**448,664**

39	**TRAINING TOTAL**	Total	**75,344**	**75,344**	**75,344**	**75,345**	**75,345**	**376,722**	**75,344**	**75,344**	**75,344**	**226,032**	**602,754**
	MISCELLANEOUS												
53.11	Land rent	Net Amount	44,641	44,641	44,641	44,641	44,642	223,206	44,641	44,641	44,641	133,923	**357,129**
53.12	Support to local committees	Net Amount	79,227	79,227	79,227	79,227	79,227	396,135	79,227	79,227	79,227	237,681	**633,816**
53.13	Operation costs-Reserves	Net Amount	25,000	25,000	25,000	25,000	25,000	125,000	301,305	125,000	125,000	551,305	**676,305**
53.14	Infrastructure costs-Reserves	Net Amount	64,171	0	0	0	0	64,171	0	0	0	0	**64,171**
59.00	MISCELLANEOUS TOTAL	Total	**213,039**	**148,868**	**148,868**	**148,868**	**148,869**	**808,512**	**425,173**	**248,868**	**248,868**	**922,909**	**1,731,421**
99	**PROJECT TOTAL**	Total	**5,661,192**	**10,349,437**	**10,183,769**	**9,776,428**	**9,874,351**	**45,845,177**	**6,394,853**	**4,807,501**	**4,547,535**	**15,749,889**	**61,595,066**

I. WORK PLAN


Nombre de tarea
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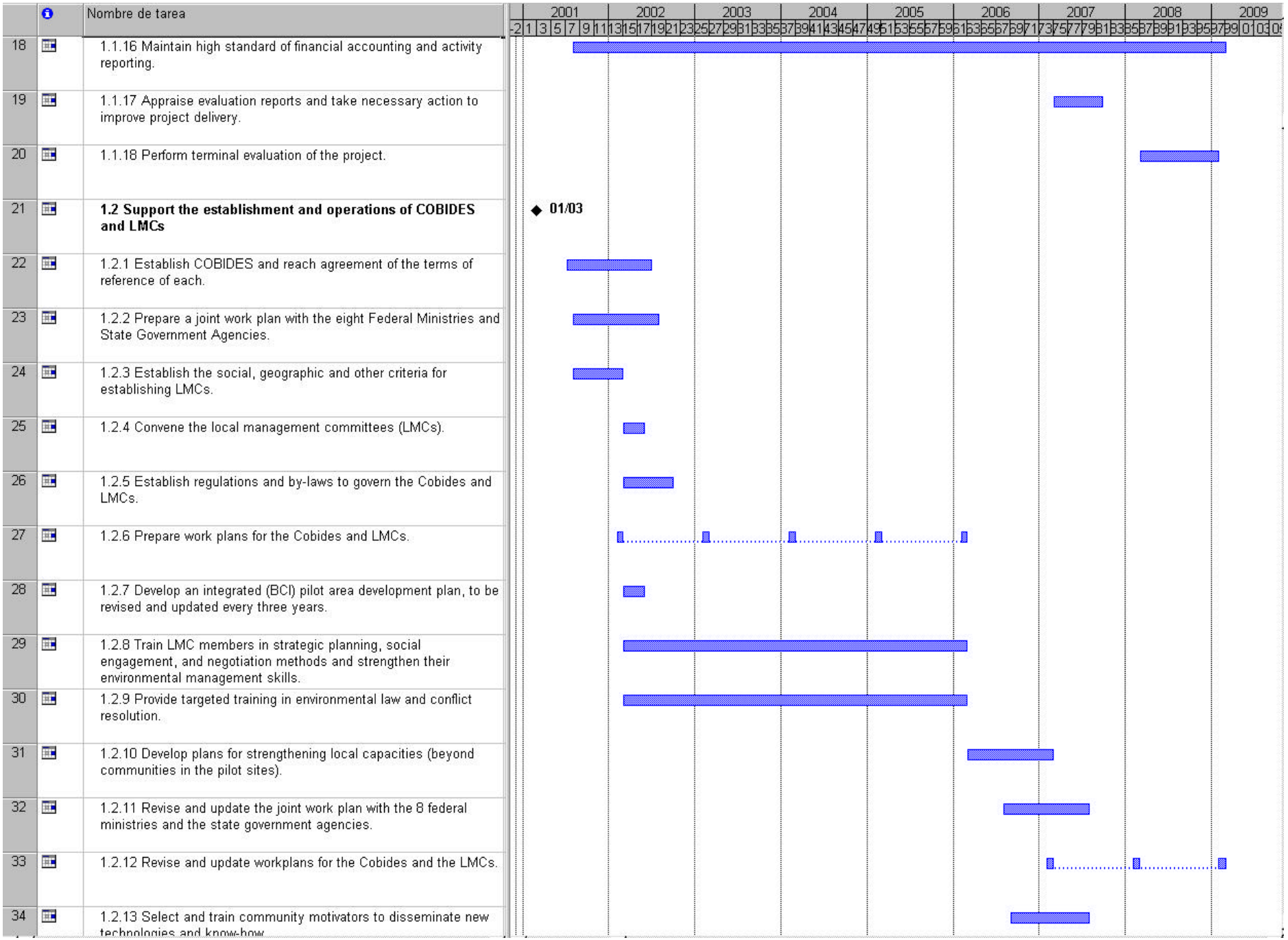
1 OUTPUT 1
2 1.1 Operationalize project management systems
01/03
3 1.1.1 Advertise staff positions.
4 1.1.2 Establish project offices.
5 1.1.3 Equip project offices.
6 1.1.4 Hire project personnel.
7 1.1.5 Prepare work plans for the regional coordination units.
8 1.1.6 Finalize terms of reference for the sub-contracts.
9 1.1.7 Select sub-contractors through competitive bidding.
10 1.1.8 Establish and operate financial accounting and activity reporting system
11 1.1.9 Appraise evaluation reports and take necessary action to improve project delivery.
12 1.1.10 Conduct training workshops for project personnel.
13 1.1.11 Clarify project objectives and strategies with all major stakeholders.
14 1.1.12 Perform independent evaluation of the project to verify the achievement of pre-defined triggers for the graduation to phase 2.
15 1.1.13 Evaluate staff capabilities vis-à-vis phase II and revise TORs.
16 1.1.14 Revise staff structure and reinforce capabilities for site-based replication work.
17 1.1.15 Select sub-contractors through competitive bidding.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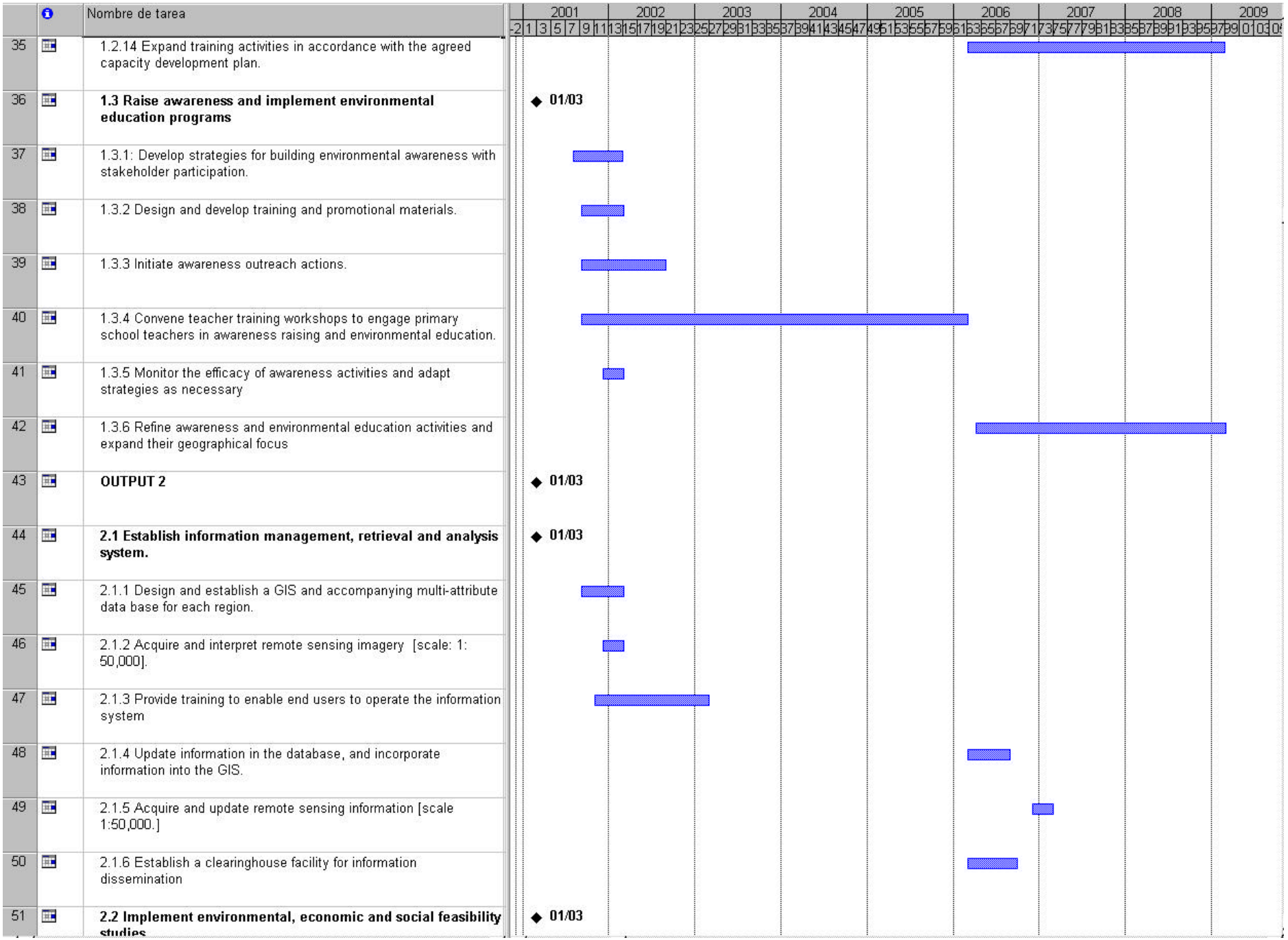
18 1.1.16 Maintain high standard of financial accounting and activity reporting.
19 1.1.17 Appraise evaluation reports and take necessary action to improve project delivery.
20 1.1.18 Perform terminal evaluation of the project.
21 1.2 Support the establishment and operations of COBIDES and LMCs
01/03
22 1.2.1 Establish COBIDES and reach agreement of the terms of reference of each.
23 1.2.2 Prepare a joint work plan with the eight Federal Ministries and State Government Agencies.
24 1.2.3 Establish the social, geographic and other criteria for establishing LMCs.
25 1.2.4 Convene the local management committees (LMCs).
26 1.2.5 Establish regulations and by-laws to govern the Cobides and LMCs.
27 1.2.6 Prepare work plans for the Cobides and LMCs.
28 1.2.7 Develop an integrated (BCI) pilot area development plan, to be revised and updated every three years.
29 1.2.8 Train LMC members in strategic planning, social engagement, and negotiation methods and strengthen their environmental management skills.
30 1.2.9 Provide targeted training in environmental law and conflict resolution.
31 1.2.10 Develop plans for strengthening local capacities (beyond communities in the pilot sites).
32 1.2.11 Revise and update the joint work plan with the 8 federal ministries and the state government agencies.
33 1.2.12 Revise and update workplans for the Cobides and the LMCs.
34 1.2.13 Select and train community motivators to disseminate new technologies and know-how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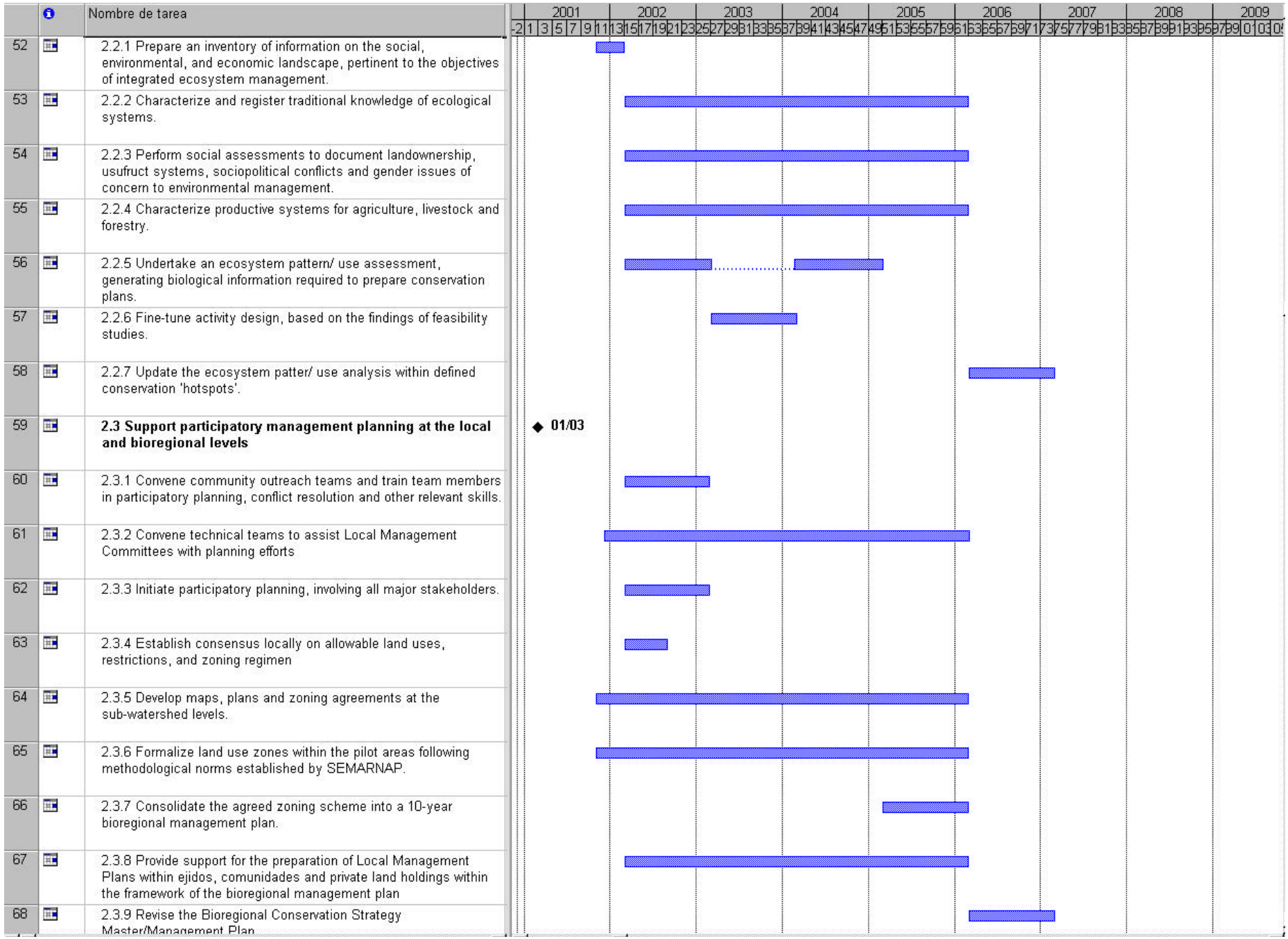
35 1.2.14 Expand training activities in accordance with the agreed capacity development plan.
36 1.3 Raise awareness and implement environmental education programs
01/03
37 1.3.1: Develop strategies for building environmental awareness with stakeholder participation.
38 1.3.2 Design and develop training and promotional materials.
39 1.3.3 Initiate awareness outreach actions.
40 1.3.4 Convene teacher training workshops to engage primary school teachers in awareness raising and environmental education.
41 1.3.5 Monitor the efficacy of awareness activities and adapt strategies as necessary
42 1.3.6 Refine awareness and environmental education activities and expand their geographical focus
43 OUTPUT 2
01/03
44 2.1 Establish information management, retrieval and analysis system.
01/03
45 2.1.1 Design and establish a GIS and accompanying multi-attribute data base for each region.
46 2.1.2 Acquire and interpret remote sensing imagery [scale: 1: 50,000].
47 2.1.3 Provide training to enable end users to operate the information system
48 2.1.4 Update information in the database, and incorporate information into the GIS.
49 2.1.5 Acquire and update remote sensing information [scale 1:50,000.]
50 2.1.6 Establish a clearinghouse facility for information dissemination
51 2.2 Implement environmental, economic and social feasibility studies
01/03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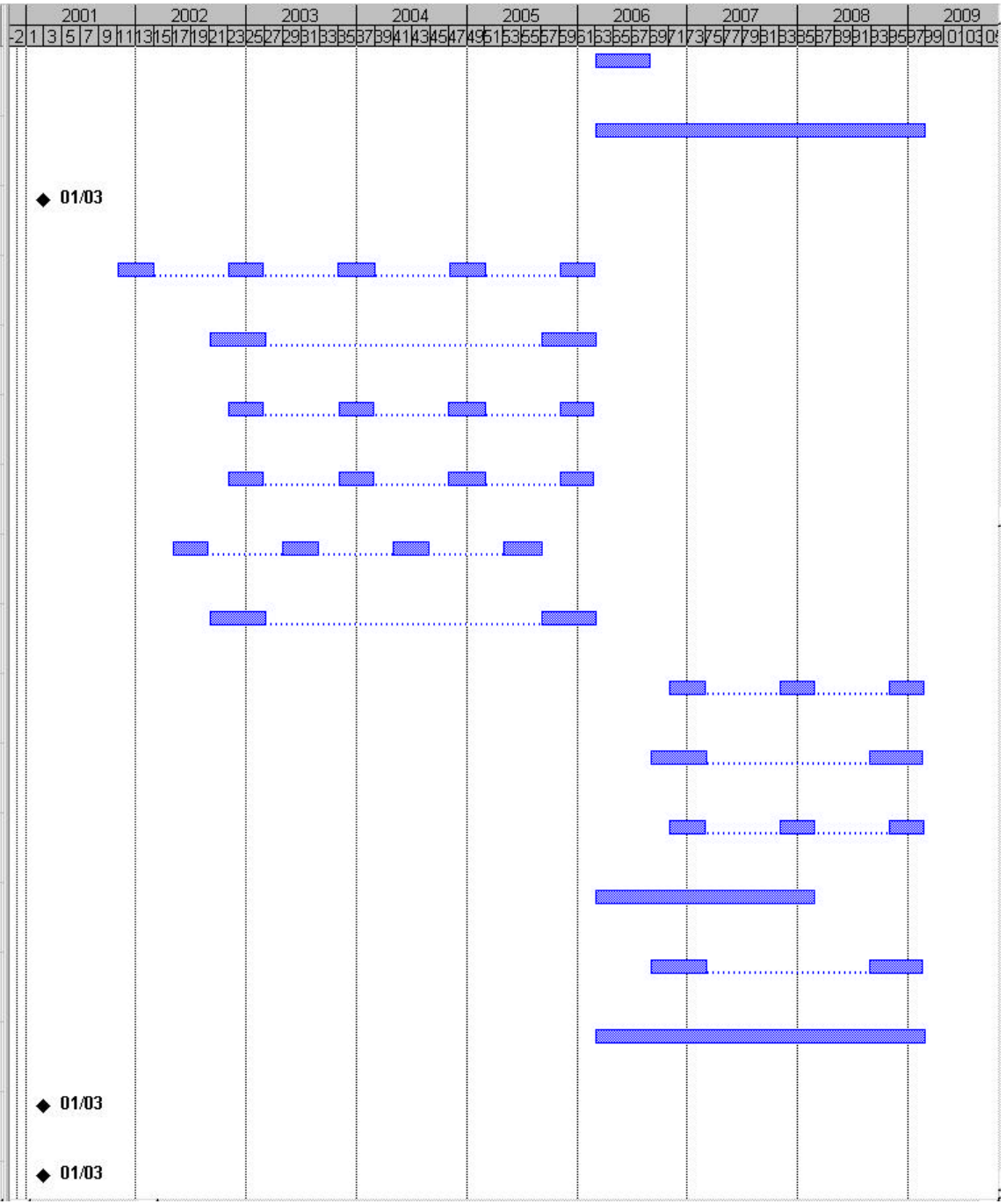
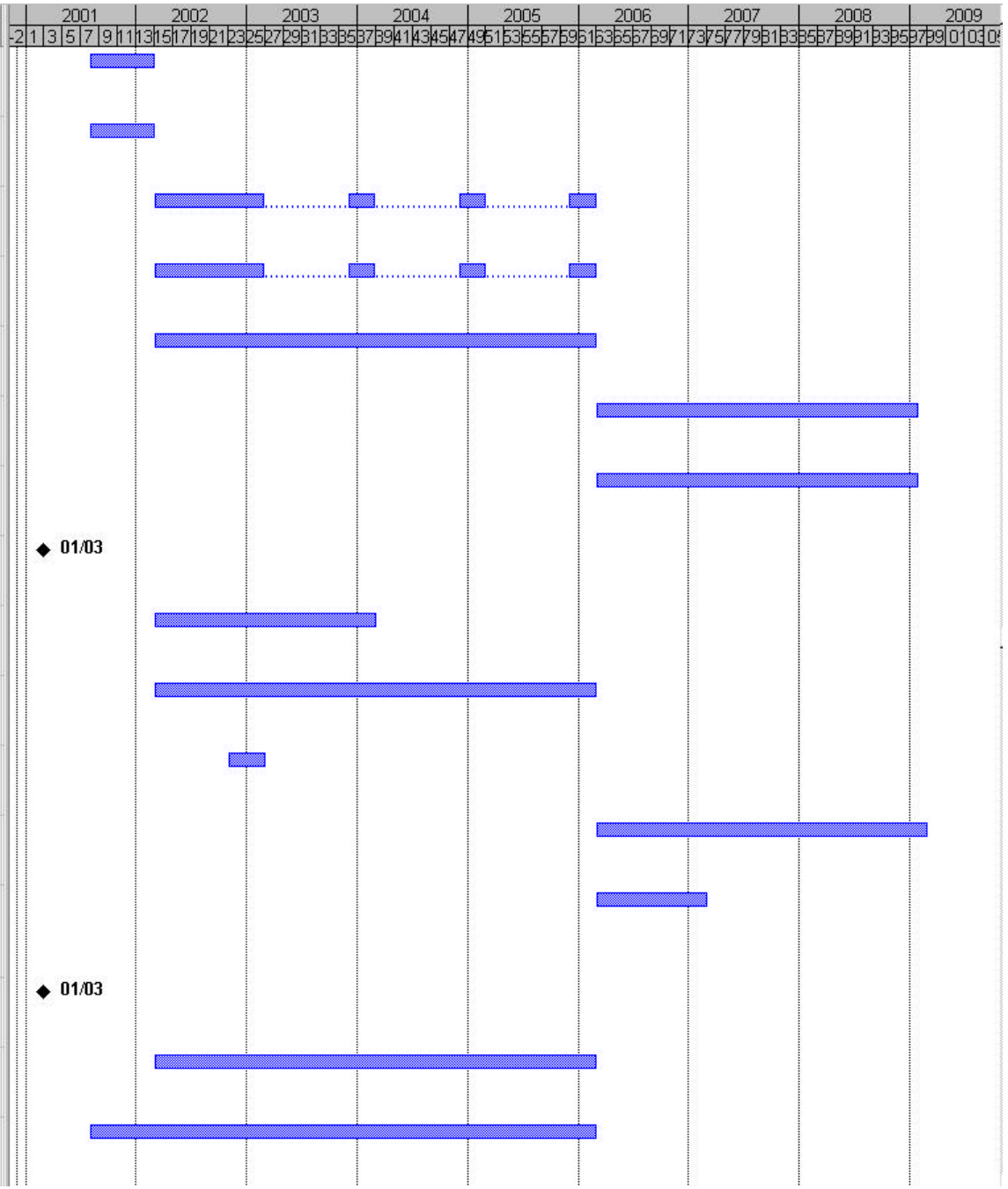
52 2.2.1 Prepare an inventory of information on the social, environmental, and economic landscape, pertinent to the objectives of integrated ecosystem management.
53 2.2.2 Characterize and register traditional knowledge of ecological systems.
54 2.2.3 Perform social assessments to document landownership, usufruct systems, sociopolitical conflicts and gender issues of concern to environmental management.
55 2.2.4 Characterize productive systems for agriculture, livestock and forestry.
56 2.2.5 Undertake an ecosystem pattern/ use assessment, generating biological information required to prepare conservation plans.
57 2.2.6 Fine-tune activity design, based on the findings of feasibility studies.
58 2.2.7 Update the ecosystem patter/ use analysis within defined conservation 'hotspots'.
59 2.3 Support participatory management planning at the local and bioregional levels
01/03
60 2.3.1 Convene community outreach teams and train team members in participatory planning, conflict resolution and other relevant skills.
61 2.3.2 Convene technical teams to assist Local Management Committees with planning efforts
62 2.3.3 Initiate participatory planning, involving all major stakeholders.
63 2.3.4 Establish consensus locally on allowable land uses, restrictions, and zoning regimen
64 2.3.5 Develop maps, plans and zoning agreements at the sub-watershed levels.
65 2.3.6 Formalize land use zones within the pilot areas following methodological norms established by SEMARNAP.
66 2.3.7 Consolidate the agreed zoning scheme into a 10-year bioregional management plan.
67 2.3.8 Provide support for the preparation of Local Management Plans within ejidos, comunidades and private land holdings within the framework of the bioregional management plan
68 2.3.9 Revise the Bioregional Conservation Strategy Master/Management Plan

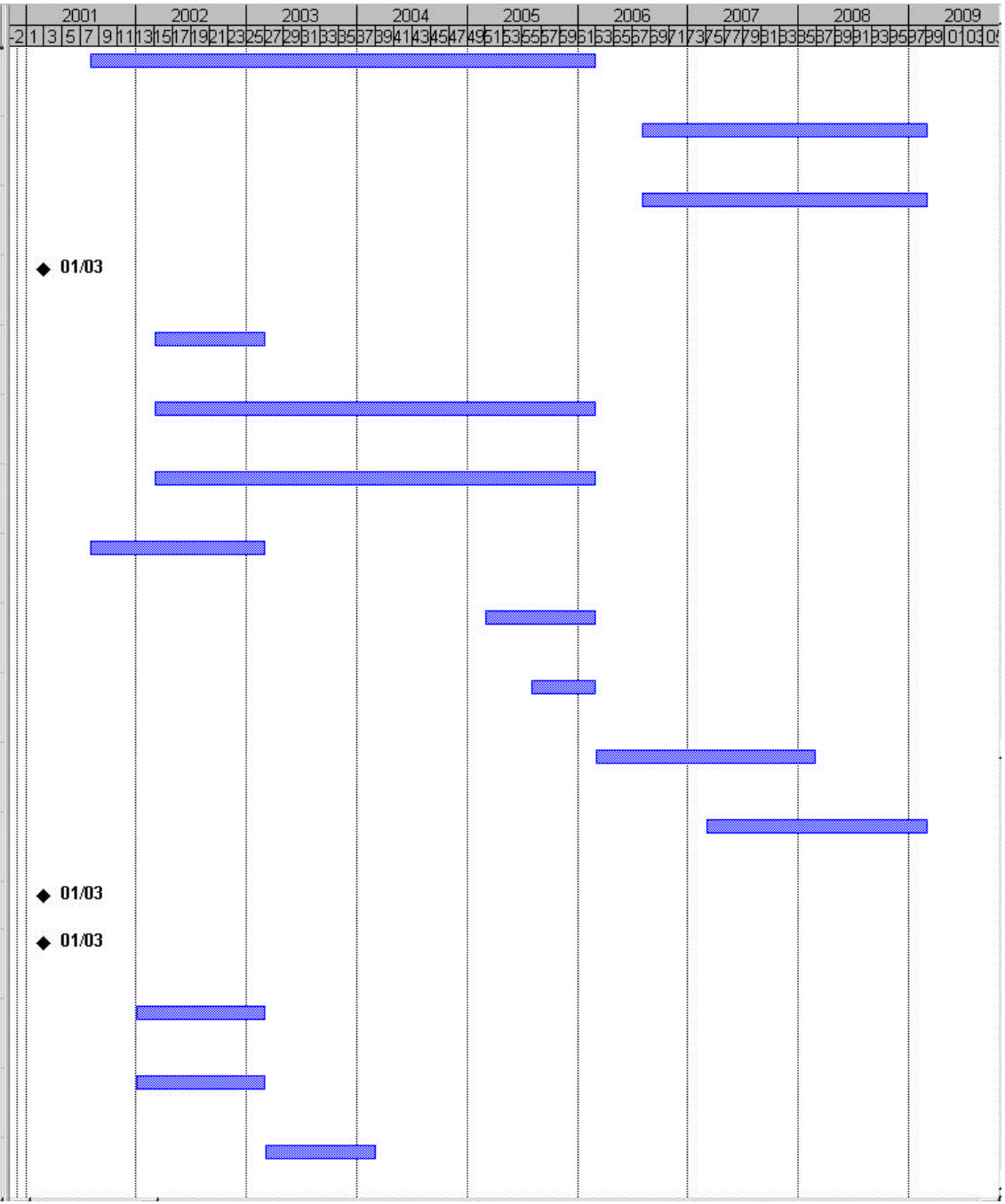
	Nombre de tarea
69	2.3.10 Integrate Master Plan into BCI Unitary Sust. Dev. Plan.
70	2.3.11 Provide support to update Local Management Plans
71	**2.4 Monitor project impacts by undertaking periodic assessments and evaluations**
72	2.4.1. Maintain a GIS- linked tracking system to measure project impacts.
73	2.4.2. Monitoring land use, and ecological and biological impacts.
74	2.4.3. Evaluate & monitor community activities, with attention to gender specific differences.
75	2.4.4. Monitor and evaluate social/economic change in the pilot areas.
76	2.4.5 Integrate monitoring activities with SEMARNAP's wildfire prevention/control program.
77	2.4.6 Feed the results of process and impact monitoring into planning systems
78	2.4.7 Maintain a GIS- linked tracking system to measure project impacts.
79	2.4.8 Monitor land use changes, ecological and biological impacts in year 8.
80	2.4.9 Evaluate & monitor community activities, with attention to gender specific differences.
81	2.4.10 Document experiences applying conservation compatible productive systems.
82	2.4.11 Feed the results of process and impact monitoring into planning systems
83	2.4.12 Publish and disseminate project findings (lessons and best practices).
84	**OUTPUT 3**
85	**3.1 Mainstream policy instruments at regional level**

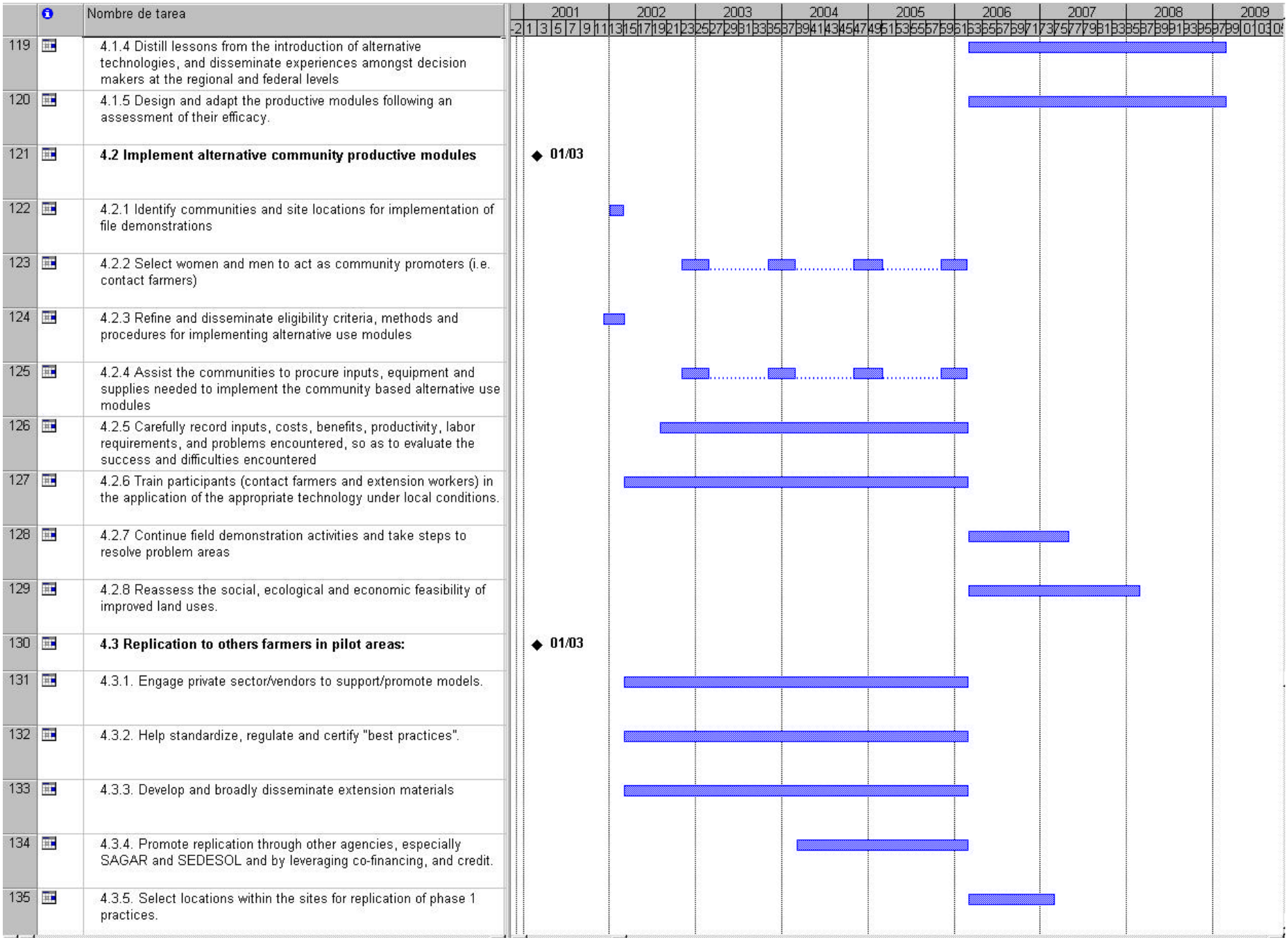


		Nombre de tarea
86		3.1.1. Analyze instruments to incorporate integrated ecosystem management criteria and conservation objectives into sector policies and programs in the pilot areas.
87		3.1.2 Provide recommendations for policy reforms across the productive sectors.
88		3.1.3 Convene discussion forums with the different stakeholding groups on public policies, with the purpose of sensitizing them to the need for reform to accomplish environmental management
89		3.1.4 Draft policies and regulations to advance integrated ecosystem management objectives, and in particular to abet enforcement of management plans, and ensure that public services
90		3.1.5 Supply legal services, as necessary, to facilitate regulatory reform.
91		3.1.6 Backstop implementation of policy and regulatory measures identified in phase 1.
92		3.1.7 Supply legal services, as required, to consolidate regulatory reform.
93		**3.2 Enhance local capacities to develop sound integrated ecosystem management polices, and execute management strategies**
94		3.2.1. Develop institutional capacities at state level to plan and execute integrated ecosystem management.
95		3.2.2. Ensure the adoption of zoning and environmental planning/management regulations, methodologies and procedures in pilot area municipalities.
96		3.2.3 Provide training to planners in integrated land use planning using multi-criteria assessments and other tools that measure tradeoffs between objectives
97		3.2.4 Continue institutional strengthening activities, following assessment of outcomes.
98		3.2.5 Establish incentive mechanisms to promote adoption of improved and conservation compatible productive systems, by reorienting extension and other support programs for the productive sectors at the site level.
99		**3.3 Strengthen capacities to enforce environmental regulations**
100		3.3.1 Develop safe minimum standard guidelines for environmental assessments.
101		3.3.2 Recruit and train community forest guards in pilot areas.



		Nombre de tarea
102		3.3.3 Sensitize NGO's and community based groups to objectives, strategies, plans and programs to enable them to monitor implementation and ensure due diligence.
103		3.3.4 Expand successful assessment, enforcement and surveillance models.
104		3.3.5 Train community forest guards outside the pilot areas but within the region.
105		**3.4 Develop means to assure the financial sustainability of protected areas:**
106		3.4.1. Perform an economic assessment of the value of ecological goods and services supplied through integrated ecosystem management.
107		3.4.2. Undertake an analysis of willingness and ability to pay for environmental services.
108		3.4.3. Design user fee mechanisms, including revenue collection, and financial management, reporting and disbursement systems, in accordance with Mexican Law.
109		3.4.4 Develop a sustainable financing plan for protected areas
110		3.4.5 Confirm national counterpart funding to establish 3 new protected areas.
111		3.4.6. Obtain formal clearances from the concerned authorities to institute user fee regime, where proven to be feasible and cost-effective
112		3.4.7 Provide training, and establish the financial management, administrative and operating systems needed to operationalize the user fee regimes.
113		3.4.8 Monitor the application of user fees and take steps to improve delivery record.
114		**OUTPUT 4**
115		**4.1 Appropriate Technology/Traditional Use Assessment:**
116		4.1.1. Carry out assessments of alternative land use options for the three regions within the agriculture, livestock husbandry, forestry and agro-forestry sectors, emphasizing the fit with local knowledge
117		4.1.2 Determine the technical and ecological feasibility of different land use options
118		4.1.3 Determine the economic and financial feasibility of defined land use options




Nombre de tarea
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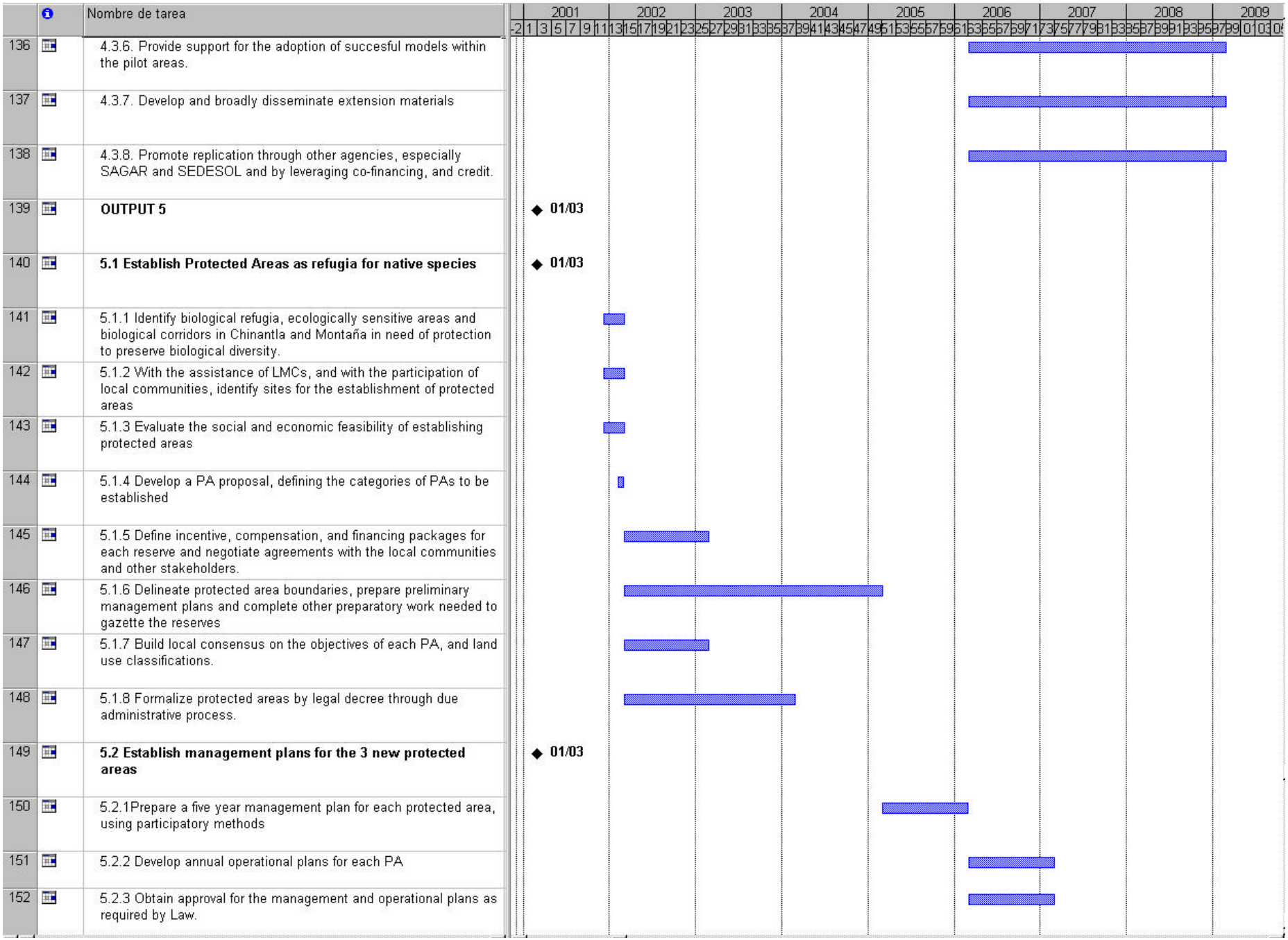
119 4.1.4 Distill lessons from the introduction of alternative technologies, and disseminate experiences amongst decision makers at the regional and federal levels
120 4.1.5 Design and adapt the productive modules following an assessment of their efficacy.
121 4.2 Implement alternative community productive modules
01/03
122 4.2.1 Identify communities and site locations for implementation of file demonstrations
123 4.2.2 Select women and men to act as community promoters (i.e. contact farmers)
124 4.2.3 Refine and disseminate eligibility criteria, methods and procedures for implementing alternative use modules
125 4.2.4 Assist the communities to procure inputs, equipment and supplies needed to implement the community based alternative use modules
126 4.2.5 Carefully record inputs, costs, benefits, productivity, labor requirements, and problems encountered, so as to evaluate the success and difficulties encountered
127 4.2.6 Train participants (contact farmers and extension workers) in the application of the appropriate technology under local conditions.
128 4.2.7 Continue field demonstration activities and take steps to resolve problem areas
129 4.2.8 Reassess the social, ecological and economic feasibility of improved land uses.
130 4.3 Replication to others farmers in pilot areas:
01/03
131 4.3.1. Engage private sector/vendors to support/promote models.
132 4.3.2. Help standardize, regulate and certify "best practices".
133 4.3.3. Develop and broadly disseminate extension materials
134 4.3.4. Promote replication through other agencies, especially SAGAR and SEDESOL and by leveraging co-financing, and credit.
135 4.3.5. Select locations within the sites for replication of phase 1 practices.


Nombre de tarea
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136 4.3.6. Provide support for the adoption of succesful models within the pilot areas.
137 4.3.7. Develop and broadly disseminate extension materials
138 4.3.8. Promote replication through other agencies, especially SAGAR and SEDESOL and by leveraging co-financing, and credit.
139 OUTPUT 5
01/03
140 5.1 Establish Protected Areas as refugia for native species
01/03
141 5.1.1 Identify biological refugia, ecologically sensitive areas and biological corridors in Chinantla and Montaña in need of protection to preserve biological diversity.
142 5.1.2 With the assistance of LMCs, and with the participation of local communities, identify sites for the establishment of protected areas
143 5.1.3 Evaluate the social and economic feasibility of establishing protected areas
144 5.1.4 Develop a PA proposal, defining the categories of PAs to be established
145 5.1.5 Define incentive, compensation, and financing packages for each reserve and negotiate agreements with the local communities and other stakeholders.
146 5.1.6 Delineate protected area boundaries, prepare preliminary management plans and complete other preparatory work needed to gazette the reserves
147 5.1.7 Build local consensus on the objectives of each PA, and land use classifications.
148 5.1.8 Formalize protected areas by legal decree through due administrative process.
149 5.2 Establish management plans for the 3 new protected areas
01/03
150 5.2.1Prepare a five year management plan for each protected area, using participatory methods
151 5.2.2 Develop annual operational plans for each PA
152 5.2.3 Obtain approval for the management and operational plans as required by Law.

		Nombre de tarea
153		**5.3 Operationalize protected area management**
154		5.3.1 Select and contract staff for each PA.
155		5.3.2 Develop and Procure the infrastructure and equipment needed for each PA.
156		5.3.3 Establish and train PA management teams.
157		5.3.4 Strengthen enforcement capabilities by establishing and training local ranger brigades
158		5.3.5 Assist PROFEPA to train staff in environmental review and impact mitigation.
159		5.3.6 Ensure regular maintenance of project infrastructure and equipment.
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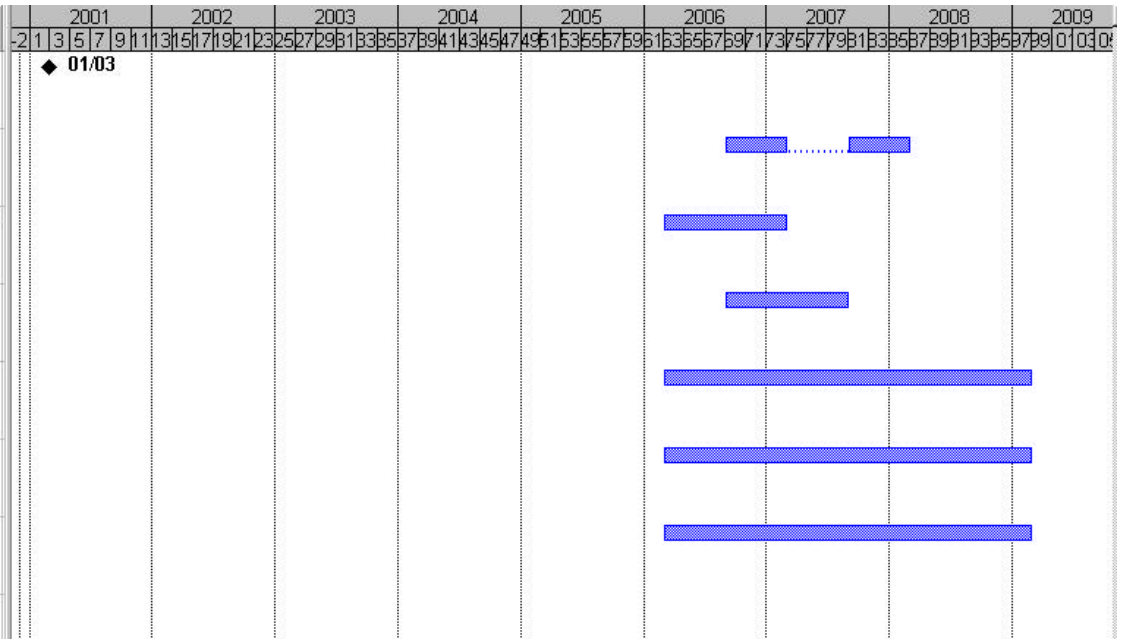


J. TERMS OF REFERENCE FOR PROJECT PERSONNEL

The Terms of Reference for staff, their lines of accountability and their reporting responsibilities will be prepared during the course of project implementation, based on the Duty Statements provided below.

LONG TERM PERSONNEL: NATIONAL STAFF

1. General Coordination - Chief Technical Advisor

Background: The Chief Technical Advisor (CTA) will be responsible for the overall management of project activities, liaison with government, UNDP, COBIDES LMCs, and NGOs, and maintaining tight links with all agencies providing co-financing. The CTA will have dual reporting responsibilities, reporting to SEMARNAP and the UNDP Resident Representative through the designated Programme Officer.

Duties and Responsibilities

1. Serve as the project representative on the PSC and ensure that PSC directives are executed;
2. Supervise and coordinate the production of project outputs as per the Project Document and the rules and procedures set forth in the UNDP Project Cycle Operations Manual;
3. Mobilize all project inputs in accordance with UNDP procedures for nationally executed projects;
4. Assume primary responsibilities for overall project management, budgeting, planning, and monitoring;
5. Ensure, through SEMARNAP, that GoM inputs to the project are committed as scheduled;
6. Finalize Terms of Reference for personnel, advertise positions, and co-ordinate staff recruitment;
7. Supervise and co-ordinate the work of all project staff, including national and international consultants;
8. Prepare and revise project work plans, travel plans, and financial plans as required periodically;
9. Liaise with the UNDP-Mexico Country Office, government and all project partners, including NGOs and community organizations to ensure the effective co-ordination of all project interventions;
10. Provide administrative backstopping to sub-contractors;
11. Oversee the preparation and ensure the timely submission of quarterly financial reports, quarterly progress reports and the Annual Project Report (APR) to UNDP-Mexico and SEMARNAP;
12. Disseminate project reports to and respond to *ad hoc* queries from all concerned stakeholders.
13. Keep abreast of innovative new conservation methods and demonstrations in the Latin America region.

Selection Criteria

- Post-graduate degree in natural resource management with at least 7-10 years professional experience;
- Ability to effectively co-ordinate a large, multi-disciplinary project;
- Knowledge of and experience with implementing donor funded environmental projects;

- Experience in design, evaluation and implementation of conservation/ resource-management projects;
- Fluency in the Spanish language;
- Excellent reading, writing and verbal communications skills in English;
- Experience working with rural communities.

2. Project Assistant -General Coordination Unit

Background: The Project Assistant, who will report directly to the CTA, will backstop the activities mandated of other long-term staff and consultants.

Duties and Responsibilities

1. Provide technical and administrative support to the Project Management Unit;
2. Oversee the work of subcontractors on behalf of the CTA, maintaining strong quality control;
3. Assist the CTA to recruit personnel, including by finalizing Terms of Reference and advertising staff positions;
4. Prepare quarterly and annual progress reports;
5. Oversee the procurement and maintenance of project equipment and development of infrastructure;
6. Assist the CTA, as necessary, to resolve implementation problems;
7. Provide administrative support to the Chief Technical Adviser including independent handling of routine letters and queries, in writing or verbally, scheduling appointments, answering phone calls, and miscellaneous related activities.

Selection Criteria

- A Master's Degree or Bachelor's Degree plus 3-5 years experience in project management, preferably with an integrated conservation and development focus;
- Demonstrated knowledge of conservation fundamentals;
- Willingness to travel frequently and to adapt to difficult working conditions;
- Strong leadership and communications skills;
- Fluency in Spanish and English (both written and verbal communications skills).

3. Finance Officer -General Coordination Unit

Background: The Project Finance Officer will be responsible for providing administrative support to the Project. The incumbent will report directly to the Chief Technical Adviser.

Duties and Responsibilities

1. Set up a financial accounting, transactions and reporting system for the project in accordance with UNDP's financial rules and regulations;
2. Advise the CTA on the budgetary implications of project management decisions;
3. Ensure that all financial transactions are in compliance with the applicable UNDP rules and procedures;
4. Prepare payment requests for submission to UNDP through the CTA;
5. Facilitate audits of project accounts conducted by external auditors;

6. Assist with the preparation of tender documents for Sub Contracts and procurement of goods and services;
7. Maintain a ledger of non-expendable equipment purchased with project funds;
8. Provide operational support to UNDP Missions, including Independent Evaluators.
9. Provide administrative support to the Chief Technical Adviser including independent handling of routine letters and queries, in writing or verbally, scheduling appointments, answering phone calls, and miscellaneous related activities;
10. Assist in processing office correspondence, project documents, administrative and financial management forms.

Selection Criteria

- Undergraduate degree in Business Administration and/or Accounting;
- A minimum of 2 years experience in administering large-scale projects;
- Excellent Spanish communication skills, particularly writing skills;
- Excellent computer skills especially spreadsheet manipulation and work planning skills;
- Demonstrated ability to learn and adapt to on the job demands;
- Good English writing and verbal communication skills in Spanish.

4. Environmental Economist- General Coordination Unit

Background: The Environmental Economist will be responsible for assessing the financial and economic viability of field demonstrations, preparing farm budgets and appraising cost/ benefit data, and pricing environmental services secured by the project. The advisor will build upon available local, national and international experiences within the field and evaluate the options most suited for the specific conditions encountered in the field. The incumbent will also coordinate work to develop user pays mechanisms for environmental services, constructing the necessary institutional and regulatory apparatus.

Duties and Responsibilities

1. Analyze and suggest possible pricing mechanisms for environmental services in the 3 project regions, and coordinate feasibility work to define the economic and financial viability of these mechanisms;
2. Coordinate efforts to establish user fees and other financial mechanisms for ecosystem management;
3. Identify market opportunities for constraints against adapting productive systems to assure their conservation compatibility, including by assessing economic, and structural barriers;
4. Prepare model farm budgets and other financial cost/ benefit appraisal tools for alternative livelihoods;
5. Facilitate 'deal flow' by creating links between local entrepreneurs and external financiers.

Selection Criteria

- Post-graduate degree in economics, with experience in natural resource valuation;
- Experience with the design and evaluation of environmental service projects
- Knowledge of the three levels of government, government policies and legislation in Mexico.
- Capacity to establish strong working relationships with government officials, and civil society;

- Excellent written and oral communication skills.

5. Institutional Development Advisor- General Coordination Unit

Background: The institutional development advisor will supervise the development of new institutional frameworks under the project. He/she will monitor and evaluate institutional performance, coordinate capacity development activities, and recommend adaptation of the frameworks where necessary. Furthermore he/she will also ensure that all counterpart-funding commitments are secured.

Duties and Responsibilities

1. Liaise with other ongoing programs/projects in Mexico and abroad focusing on decentralization and rural sustainable development, to identify successful alternatives to institutional structures;
2. Work with the CTA to ensure that national counterpart funding is disbursed according to schedule;
3. Monitor the efficacy of institutional arrangements and impact of capacity development initiatives, and coordinate efforts to improve institutional performance at all levels of operations;
4. Assess the stakeholder participation strategy and mechanisms, and advocate improvements as necessary;
5. Coordinate socio-economic research studies in the project areas, including the social assessments;
6. Assist in supervising the community motivators entrusted with strengthening local institutional capacities;
7. Document social organization processes and the attendant lessons learned on a regular basis.

Selection Criteria

- Postgraduate degree in the social sciences, with an emphasis on institutional development, combined with at least 5-8 years of professional experience;
- Experience with natural resource management programs/projects, and institutional change processes;
- Knowledge and experience with negotiations between local indigenous communities and municipalities, state institutions and federal level institutions;
- Experience working with rural communities;
- Excellent written and oral communication skills.

6. Secretary to the General Coordination Unit

Background: Working under the direct supervision of the Chief Technical Advisor, the Secretary will be responsible for providing administrative support to staff within the Project Management Unit.

Duties and Responsibilities

1. Provide administrative support to the General Coordination Unit including typing of correspondence, independent handling of routine letters and queries, in writing or verbally, scheduling appointments, answering phone calls, and miscellaneous related activities;
2. Assist in processing documents and administrative and financial management forms,

particularly processing of travel request forms, payment request forms, leave applications, etc.;
3. Follow up on administrative matters with UNDP-Mexico on behalf of the CTA and other staff;
4. Organize travel arrangements, both domestic and international, for all staff members;
5. Manage logistical arrangements for all meetings, in house as well as others;
6. Develop and maintain a database for mailing of newsletters, correspondence, etc.;
7. Ensure proper filing of all office correspondence and project documents.

Selection Criteria

- Minimum of 2 years of administrative experience;
- Excellent computer skills including typing, word processing, and document formatting;
- Ability to format and organize reports;
- Excellent Spanish writing and verbal communication skills;
- English knowledge, oral and written;
- Demonstrated willingness and capacity to learn and apply best practices.

REGIONAL LEVEL

1. Regional Level Coordination – Regional Director

Background: A Regional Director will be responsible for the overall management and co-ordination of project activities at each site (Los Tuxtlas, La Montaña, and Chinantla) in close association with state government, federal delegations, regional and local government, COBIDES, LMCs, NGOs, and communities. The Regional Director will report to the CTA.

Duties and Responsibilities

1. Supervise and coordinate the production of project outputs at the regional level;
2. Supervise the design and implementation of project activities, ensuring sound quality control;
3. Mobilize project inputs in accordance with UNDP procedures for nationally executed projects;
4. Supervise and coordinate the work of all regional project staff, consultants, and subcontractors;
5. Facilitate good working relationships between project staff, communities and local administration;
6. Prepare and revise project work plans, travel plans, and financial plans as required from time to time;
7. Provide administrative backstopping to sub-contractors funded under the project;
8. Oversee and ensure timely submission of quarterly financial reports and progress reports to the CTA;
9 Assume the lead role in coordinating monitoring and evaluation activities.

Selection Criteria

- Post-graduate degree in natural resource management with at least 5 years professional experience;
- Ability to coordinate complex multi-disciplinary conservation/natural resource management projects;
- Fluency in the Spanish language with excellent written and oral communications; working knowledge of the English language (written and oral) is needed;

- Experience working with rural communities, preferably in the region.

2. Regional Level Coordination- Administrative Assistant

Background: The Regional Level Administrative Assistant will be responsible for providing administrative support to sub- projects. The incumbent will report directly to the Regional Director and work in close association with the Finance Assistant in the General Coordination Unit.

Duties and Responsibilities

1. Implement the financial accounting, transactions and reporting system for the project in accordance with UNDP's financial rules and regulations;
2. Advise the Regional Director on the budgetary implications of project management decisions;
3. Ensure that all financial transactions are in compliance with the applicable UNDP rules and procedures;
4. Prepare payment requests for submission to the CTA and Finance Assistant (General Coordination Unit) through the Regional Director;
5. Maintain a ledger of non-expendable equipment purchased with project funds;
6. Assist in processing office correspondence, project documents, administrative and financial management forms;
7. Ensure proper filing of all office correspondence and project documents.

Selection Criteria

- Undergraduate degree in Business Administration and/or Accounting; or a natural resources related field and a minimum of 1-year experience; or a minimum of 3 years office experience;
- Excellent Spanish communication skills, particularly in writing;
- Excellent computer skills especially typing, word processing, and document formatting;
- Demonstrated ability to learn and adapt to on-the-job demands.
- Basic English reading, writing and verbal communication skills.

3. Regional Level Coordination-Secretary

Background: Working under the direct supervision of the Regional Director, the Regional Level Secretary (RLS) will be responsible for providing administrative support within the Project Technical Unit.

Duties and Responsibilities

1. Provide administrative support to the Regional Director including typing of correspondence, independent handling of routine letters and queries, in writing or verbally, scheduling appointments, answering phone calls, and miscellaneous related activities;
2. Assist in processing documents and administrative and financial management forms, particularly processing of travel request forms, payment request forms, leave applications, etc.;
3. Co-ordinate travel arrangements, both domestic and international, for all staff members;
4. Co-ordinate logistical arrangements for all meetings, in house as well as others;
5. Develop and maintain a database for mailing of newsletters, correspondence, etc.;
6. Ensure proper filing of all office correspondence and project documents.

Selection Criteria

- Minimum of 2 years of administrative experience;
- Excellent computer skills especially typing, word processing, and document formatting;
- Ability to format and organize reports;
- Excellent Spanish writing and verbal communication skills;
- Demonstrated willingness and capacity to learn and apply lessons learned.

SHORT TERM CONSULTANTS:

1. Bioregional Management Expert

Background: The Bioregional Management Expert will be a senior, internationally recruited, consultant responsible for advising on bioregional planning and management, assisting to develop and institutionalize participatory planning processes, contributing to the development of an impact monitoring system, and contributing to the development and implementation of conservation advocacy strategies.

Duties and Responsibilities

1. Work with the COBIDES and LMCs to further define planning, management and monitoring mechanisms;
2. Coordinate efforts to map biological corridors and critical habitats in collaboration with landowners;
3. Work with other project staff, parks authorities and local stakeholders to define appropriate and workable strategies for establishing new protected areas, geared to the needs of the different sites;
4. Assist with the development of Bioregional Conservation strategies at the 3 sites.

Selection Criteria

- Master's degree in the environmental sciences and a minimum of 5-7 years professional experience in the field.
- Experience working with and developing effective partnerships between local communities and indigenous people, NGOs (national and international), and government agencies.
- Skills in various aspects of conservation area operations and field management including participatory management/ operational planning, enforcement, community outreach, conservation education and advocacy.
- Experience with conflict resolution will be an advantage.
- Willingness and ability to travel frequently to the project sites and to function within difficult - working conditions.
- Patience and cultural sensitivity needed to gain the trust, understanding and support of all stakeholders. Good interpersonal skills, and a track record in providing training "on the job".
- Excellent Spanish and English communication skills (written and verbal communications).

2. Policy/Legal Analyst

Objectives: To provide analyst services to the project with a view to strengthening conservation

policies.

Duties and Responsibilities

1. Assist in evaluating and drafting amendments to conservation policies and regulations in order to secure integrated ecosystem management objectives;
2. Support SEMARNAP, LMCs, communities, and other groups in drafting regulations as needed so as to recognize conservation strategies and use rights defined in Management Plans;
3. Assist the project staff to prepare executive orders proclaiming protected areas;
4. Assist with the formulation of appropriate policies, guidelines, and other enabling instruments to implement the Management Plans, including zoning guidelines;
5. Assist with the development of local legislation to establish the proposed financial mechanisms.

Selection Criteria

- A Master's Degree plus 4-7 years experience in the environmental sciences or social sciences with an application to environmental issues relevant to the project or Juris Doctor with at least 3 years experience in policy analysis and providing legal advice on natural resource management;
- Patience and cultural sensitivity needed to gain the trust, understanding and support of all stakeholders;
- Good interpersonal skills;
- Excellent Spanish communication skills (writing and verbal communications).

K. SPECIFICATIONS FOR SUB CONTRACTS

The Terms of Reference and tender documentation for the subcontracts will be prepared by the Project Management Unit (PMU) during project implementation based on the following specifications.

SUB-CONTRACT: SOCIAL OUTREACH, PLANNING, LOCAL CAPACITY BUILDING AND AWARENESS RAISING

Region: Chinantla, Montaña and Tuxtlas

Objectives: To contribute towards the fulfillment of Outputs 1 and 2 by supporting community mobilization, strengthening local institutions, and facilitating management planning. This subcontract will provide and strengthen the framework and local capacities for executing field demonstration activities.

Activities:

1. Mobilize and train community motivators to perform social outreach, planning and awareness activities, taking care to ensure an adequate gender balance in team composition;
2. Contribute towards the development and adaptation of public participation plans for each region;
3. Facilitate the establishment of Local Management Committees, comprising representatives of *ejidos, comunidades* and private landowners, taking care to ensure all groups are involved;
4. Prepare and periodically update conservation awareness materials for use in social outreach;

5. Undertake social outreach exercise to engage local communities in management planning efforts;
6. Maintain close and regular contact with target communities and actively work to resolve any conflicts within or between communities, in consultation with other project staff and partners;
7. Mobilize a team of thematic specialists to guide planning efforts, and assist with diagnostic work;
8. Prepare Local Management Plans, and accompanying maps and zoning agreements;
9. Prepare a Bioregional Conservation Strategy, defining conservation priorities, incorporating inputs from social assessments, biophysical assessments, and the carbon capture study;
10. Update the Bioregional Conservation Strategy to reflect the inputs of Local Management Plans;
11. Build capacity at the local level to update management plans, and resolve social conflicts;
12. Periodically evaluate the performance of community motivators, and take steps to improve performance.

Experience: The contracts will be awarded to a consortium of NGO or private consulting firms with experience in regional planning and environmental management, agro-forestry, silvo-pastoral systems, forest conservation. Community development and experience in cross-sector/multi-stakeholder team work.

Duration: The Sub contract will be operative over the duration of the project, subject to periodic review.

Accountability: The sub-contractors will be jointly responsible to UNDP and SEMARNAP for the quality and timeliness of the products required under this contract and accountable for ensuring that the GEF's rules are applied,in particular those pertaining to incremental costs and public participation.

SUBCONTRACT : MONITORING AND REPORTING SYSTEM

Region: Chinantla, Montaña and Tuxtlas

Objectives: To obtain baseline data for planning purposes, to monitor the achievement of project objectives and outputs, and to document social processes that have bearing on conservation outcomes.

Activities:

Component 1: Biophysical Assessments/ Monitoring

1. Undertake rapid biological and environmental assessments to collect and verify baseline data;
2. Produce maps using GIS software to support management-planning efforts in sub-watersheds.
3. Ground truth baseline data on the carbon content of forests and agro ecosystems at the project sites, and establish indicators, and monitoring measures to track changes in carbon sinks;
4. Perform biennial biophysical assessments to determine the extent to which project impacts are being achieved, as per indicators presented in the Log Frame;
5. Contribute towards the development and upkeep of a data base of bio-physical information;
6. Provide training to LMC, regional governments and other authorities in data interpretation;
7. Provide technical support to ensure that monitoring and evaluation systems are operationalized at the community level, within the jurisdiction of Local Management Committees.

Component 2: Social Assessments/ Monitoring

8. Contribute towards the development of public participation measures specific to each site, as they relate to social assessment, impact and process monitoring and information disclosure;
9. Design a long term Social Assessment Programme to track social dynamics and stakeholder perceptions of conservation. The Programme design will require:
   (a) the design of social assessment methods and data management systems,
   (b) determination of key social variables to be monitored (particularly variables related to women and conservation),
   (c) development of sampling tools, and
   (d) determination of the periodicity of assessment.
10. Collect and interpret baseline data by conducting rapid rural appraisals;
11. Undertake annual process oriented monitoring of social impacts and processes, document results and provide recommendations that may be used to adapt conservation management strategies as appropriate.
12. Document the best practices, challenges and constraints inherent in conservation processes and prepare a lessons learned document for distribution to conservation professionals and decision makers.

Experience: The contracts will be awarded to a consortium of NGO or private consulting firms with experience in social appraisal, conservation assessment and field monitoring and evaluation.

Duration: The Sub contract will be operative over the duration of the project, subject to periodic review.

Accountability: The sub-contractor will be jointly responsible to UNDP and SEMARNAP for the quality and timeliness of the products required under this contract and accountable for ensuring that the GEF's guidelines on monitoring, information disclosure and public participation are applied.

SUBCONTRACT: ESTABLISHMENT OF FINANCIAL MECHANISMS

Region: Chinantla, Montaña and Tuxtlas

Objectives: To establish the feasibility of creating user fees and/or other financial mechanisms to recover the costs of supplying environmental services, and to assist with the institutionalization of mechanisms.

Activities:

Component 1: Feasibility Assessment (Phase 1)

1. Work with SEMARNAP personnel and Project staff to establish the feasibility of introducing financial mechanisms for integrated ecosystem management, including, inter alia, concession fees, road tolls, and water charges. Working with the Environmental Economist and policy specialists, the sub contractor will collect data on environmental services and values, establish the willingness and ability to pay for services, evaluate the costs and benefits of various financial mechanisms, and appraise the policy and regulatory environment governing user fees;
2. Develop procedures and guidelines for implementing financial mechanisms;
3. Working with Project Staff and consultants, support SEMARNAP in its efforts to make the case for introducing user fees at PRODERS sites on a pilot basis to federal and state authorities;

Component 2: Incorporation of Mechanisms (Phase 2)

Subject to determination of the feasibility of introducing financial mechanisms

4. Develop materials and provide training programmes to build SEMARNAP's capacity to manage financial mechanisms;
5. Supply technical assistance as necessary to establish the financial mechanisms, including to design trust funds to serve as a repository of earmarked funds generated under the financial mechanisms;

Experience: The contracts will be awarded to a private firm with international experience conducting feasibility assessments for innovating conservation financing instruments and developing financial mechanisms.

Duration: The Sub contract will be operative for a period of 36 months in Phase 1 and 36 months in Phase 2.

Accountability: The sub-contractor will be jointly responsible to UNDP and SEMARNAP for the quality and timeliness of the products required under this contract.

SUB-CONTRACTS: ALTERNATIVE NATURAL RESOURCE MANAGEMENT [9]

Objectives: To perform targeted field demonstrations of conservation compatible, area specific farming, livestock husbandry, forestry and agro forestry systems and other suitable land use practices.

Activities:

The costs of the demonstrations will be shared by the Government of Mexico and the GEF. GEF inputs will be dedicated solely towards offsetting the incremental costs of the demonstrations, including by:

1. Conduct feasibility studies, to assess the economic, and social viability of adapting production systems for the purposes of achieving integrated ecosystem management objectives;
2. Provide technical assistance to adapt productive systems (Silviculture, ranching, farming systems), that can be accessed by communities on demand;
3. Identify the economic and ecological feasibility of and barriers to managing the production and trade of non timber forest products (such as maguey, palm, resin, orchids and fungi);
4. Develop extension materials and other information on improved production systems;
5. Train contact farmers as disseminators of know-how;
6. Measure the environmental impacts of demonstrations, for the purpose of appraising benefits.

The Government of Mexico will finance the costs of land, labor and capital for the demonstrations.

Procurement Procedures: In order to encourage the participation of communities in the demonstrations and to establish the basis of ownership, the project will provide eligible communities with small grants to source technical assistance needed to support demonstration activities. In order to facilitate procurement, UNDP would prepare a roster of private consultants and firms, standardized terms of reference for assistance for the different categories of demonstrations, and eligibility criteria for grants (criteria will include the satisfaction of incremental cost requirements, and availability of other inputs). Local procurement rules will apply. An Operations Manual will be prepared as a reference guide to procurement, monitoring and reporting procedures. Contracts would be subject to

[9] Separate sub contracts will be let for each region, and activities will vary according to site-specific requirements.

selective reviews and external audits. The total cost of individual contracts will not exceed US$30,000. In accordance with UNDP rules wherever possible, each contract will be granted following a price comparison of prices of at least three competing contractors and reference prices for each of the States.

Experience: The contracts will be awarded to a private firm with international experience conducting feasibility assessments for innovating conservation financing instruments and developing financial mechanisms.

Duration: The Sub contract will be operative for a period of 60 months in Phase 1 and 36 months in Phase 2.

Accountability: The sub-contractor will be jointly responsible to UNDP and SEMARNAP for the quality and timeliness of the products required under this contract.

Demonstration	**Site**	**Description**
Alternative agriculture modules	Chinantla, Montaña and Tuxtlas	Identify appropriate agro-forestry systems using native species in production systems; identify ecologically benign soil conservation methods
Silvicultural Models	Chinantla, Montaña and Tuxtlas	Support silvicultural trials using native species
Silvopastoral Models	Chinantla and Tuxtlas	Assess carrying capacities for livestock, and test conservation compatible pasture rotation and improvement methods
Firewood Management/ Fuel Stoves	Montaña and Tuxtlas	Design energy efficient fuel stoves Determine sustainable off take rates for firewood harvested from natural forests
Wild resource management	Montaña and Tuxtlas	Establish the economic and ecological feasibility of harvests and define optimum management intensity

L. SCHEDULE OF PROJECT REVIEWS AND EVALUATIONS

Project Document Signature: December 2000
Project Commencement: March 2001

PHASE 1		**PLANNED DATES**
1.	Inception Report	April 2001
2.	1st Project Steering Committee (PSC) meeting	June 2001
3.	2nd PSC Meeting	November 2001
4.	1st Annual Project Report (APR)	April 2002
5.	3rd PSC meeting	May 2002
6.	4th PSC meeting	November 2002
7.	2nd APR	April 2003
8.	First Independent Evaluation	February 2003
9.	5th PSC meeting	May 2003
10.	6th PSC meeting	November 2003
11.	3rd APR	April 2004
12.	7th PSC meeting	May 2004
13.	4th APR	April 2005
14.	8th PSC meeting	November 2005
15.	Second Independent Evaluation	February 2006
16.	5th APR and Phase 1 Report	April 2006
17.	9th PSC meeting	May 2006

END OF PHASE 1

Phase 2

18.	10th PSC meeting	October 2006
19.	6th APR	April 2007
20.	11th PSC meeting	May 2007
21.	7th APR	April 2008
22.	11th PSC meeting	May 2008
23.	Terminal Evaluation and Project review	February 2009
24.	Final Report	April 2009

ANNEX 1. INCREMENTAL COST ANALYSIS

1. BROAD DEVELOPMENT OBJECTIVES:

1.1 Mexico's population has reached nearly 100 million. Approximately 48% of Mexicans, including much of the indigenous populace, live in poverty. Many of the poor are concentrated in rural areas, often in biodiversity-rich areas, as is the case in the Chinantla, Montaña and Los Tuxtlas regions. Accordingly, poverty alleviation remains the primary development objective of the Government in these areas. Nevertheless, Mexico is also committed to protecting the global environment and particularly its biologically important forest estate, having ratified the CBD and FCCC in 1993. The country has established a number of strategies to protect forests, which include the maintenance of a protected area system (ANP), and the allocation of other lands (UMAS) for sustainable wildlife management. The Government is committed to mainstreaming environmental management and poverty eradication, and, to this end, has created the Sustainable Regional Environment Program (PRODERS), which aims, inter alia, at developing institutional frameworks, adapting resource management and cultivating public support for the integration of environment and development in 24 regions across Mexico. PRODERS provides an unparalleled opportunity to adapt land management systems for agriculture, livestock and forestry so as to improve their conservation congruence. But its potential has yet to be fully realized, partly because its institutional dimensions remain untested, and because the technical know-how to adapt productive activities is often lacking.

2. GLOBAL ENVIRONMENTAL OBJECTIVES

2.1 The project will integrate global environmental objectives into the operations of PRODERS by operationalizing and adapting an integrated approach to ecosystem management in the La Chinantla, Montaña and Los Tuxtlas regions of Southern and Central Mexico. Global environmental benefits will be captured through the protection of a representative sample of 3 globally important ecoregions, and the protection and restoration of forest carbon sinks. There are also expected to be accompanying global benefits associated with a diminishment of land degradation. For the first time in Mexico, activities will spearhead approaches to establishing biodiversity-friendly productive landscapes—providing a vehicle for addressing conservation aims at a bioregional scale. The approach provides a means of combating wild-land fragmentation, and resultant biogenetic insularization, by improving the quality of natural habitat in anthropologically modified landscapes.

3. BASELINE:

3.1 Deforestation and habitat fragmentation constitute the principal threats to ecosystem integrity, fueled by expansion of the agricultural estate, and collateral damage from land degradation that is forcing land abandonment and forest clearance. Ecosystem integrity is also compromised by frequent wildfires, caused by poor fire management on farms, and by defaunation, driven by habitat fragmentation and unsustainable consumptive and productive uses of some flora and fauna. These problems are leading to the depletion of biodiversity, loss of forest carbon sinks, and degradation of lands in upstream catchments. In the default scenario, absent GEF investment, Government actions would focus on regulating environmental management, through instruments of command and control, but without an overall vision for managing the greater ecosystem. The programmatic baseline is

described below 10. A break-down of cost aggregates is provided in the incremental cost matrix.
Institutional Strengthening: Basic institutional structures to advance programmatic integration between Federal and State agencies and abet administrative decentralization have been created. In the baseline situation, the Government of Mexico would appropriate funds for the operations of 3 State Development Planning Committees (COPLADES) in Oaxaca, Guerraro and Veracruz States, as well as for 2 Committees for Natural Resource Management in Chinantla, and the Regional Sustainable Development Council in Montaña, both established as part of the preparatory work of PRODERS. These Committees, while providing a means of coordinating local development work, will lack technical skills in conservation management. Thus environmental management capacities would remain weak. Funds would also be allocated towards the operations of the Technical Advisory Committee for the new Biosphere Reserve created in Los Tuxtlas, although the remit of this Committee does not extend to the integration of environmental management and development. At a local level, a number of small producer associations will work towards the development of sustainable agriculture and other livelihoods. These include a strong producer organization in Chinantla that promotes vanilla, ixtle and shade coffee production, a producer organization for coffee and social forestry in Montaña and associations for tourism, acquaculture and handicrafts at Los Tuxtlas. The Rockefeller Foundation will provide funding in Montaña and Los Tuxtlas to promote producer networks. Additionally, several NGOs provide capacity support for community mobilization, including Methodus, Mesofila, and ERA in Chinantla, PAIR in Montaña, and Luisa Pare, Sierra Santa Marta, Alicea in Los Tuxtlas. While small, this support is important to strengthen social relations and build trust between actors. SEDESOL will provide limited funding to organize women and indigenous groups into producer associations. Finally, two Federal Agencies, namely the Secretariat of Agrarian Reform (SRA) and SEDESOL will allocate funds towards local conflict mediation (mainly to settle local property disputes). Very limited funding for environmental awareness raising is available. Several NGO's have obtained funding and will continue to raise funds for this activity. SEMARNAP will sponsor a small awareness campaign in the immediate vicinity of the Los Tuxtlas Reserve, and the Secretariat of Agrarian Reform (SRA) will provide some funds for education on land use management. The baseline for this component is estimated at US$ 2.2962 m.

Adaptive Planning: Some biological inventories have already been completed in the regions, and Conservation International will supply additional funds to stock-take biodiversity in Montaña, where the inventory remains incomplete. This information will abet conservation work. However, there would be no direct funding available for conservation planning in either La Chinantla or La Montaña, where there are no protected areas, and planning activity would be restricted to the preparation of Development Plans, with basic zoning regimen by local Municipalities, and forestry plans by SEMARNAP-PRODEFOR. Also, the States would appropriate funds under the ongoing decentralization program to create State Development Plans, translating the NDP to the regional context. In Los Tuxtlas, SEMARNAP would appropriate funds to finalize and update a Management Plan for the Biosphere Reserve. A basic GIS (at a scale of 1:250,000) has been developed, and SEMARNAP would invest in managing the database, and purchasing low-resolution aerial images for monitoring. DFID is the development of a general monitoring framework for PRODERS; and will provide limited funding to test the M&E systems at a regional scale, but not at the project sites. In the Los Tuxtlas Biosphere Reserve, PROFEPA has put a natural resource monitoring program into place. Finally, while there are no plans to finance social assessments, SEDESOL, CEDEMUN, SRA and FONAES will collect data to construct the poverty index and municipal development comparators. The baseline appropriation for these activities has been costed at US$ 0.2732

[10] This excludes activities that will be modified under the Project to create a 'Sustainable Development' Baseline.

Integrated Policy Development: While SEMARNAP invests in national policy development, in the default situation, there would be no baseline funding available for integrated ecosystem management at the sites, or for creating the necessary policy and regulatory instruments that such management will require. However, SEMARNAP has plans to invest in updating forestry laws, including by better integrating conservation with other forestry programs. The baseline has been costed at US$ 1.0573 m.

Sustainable Livelihoods: Several agencies will service rural livelihoods in the default scenario. SAGAR will deliver a program of agricultural support, including extension, input supply (including seeds and fertilizer), marketing, distribution and other services. Through its Alianza para el campo program, SAGAR will provide funding for irrigation works, needed to intensify farming systems in some areas, to improve livestock health, and increase animal productivity through other means, and to promote mechanization within farming systems. SEDENA, the Secretariat for National Defense will provide funding for rehabilitation work, following floods, landslips and other natural disasters. SEMARNAP-PRODEFOR will provide funding for the management of tree plantations. SEDESOL will provide funds for the promotion of micro-enterprises and income diversification, through its Institute for Indigenous Affairs and FONAES, the National Fund for Social Enterprises, and for temporary employment programs, generally through investment in labor intensive public works programs. SEDESOL will also appropriate funding for the agricultural and livestock sectors, providing a source of micro-credit for the rural poor, and technical assistance to producer associations. The aggregate cost of these various programs has been estimated at US$ 149.9600 m11.

None of the afore-mentioned initiatives are explicitly geared towards addressing the environmental dimensions of sustainable development. But there will be some additional investment in promoting ecologically sustainable development. Several producer associations are experimenting on a small scale with agroforestry systems, with some success. The Rockefeller Foundation would provide some funding in Los Tuxtlas to monitor nitrogen cycles on croplands, and the Kellogg Foundation in improving the productivity of home garden plots. The total cost is small, estimated at US$ .0620 m. In addition, the MacArthur Foundation has provided funds to local NGOs in Los Tuxtlas to study the ecology and use of Camedor Palm, and the FAO has recently funded an evaluation of fuel wood use in La Montaña. As these constitute sunk costs, they have been omitted from the baseline calculation.

Field Management Operations: SEMARNAP has deployed fire-fighting squads in several hotspots throughout the regions to detect and fight wildfires. While substantial funding will be allocated to these efforts, for both staff and equipment, there would be little investment in fire prevention. There would be no investment in the creation and management of protected areas in either Chinantla or Montaña. This will threaten the survival of the largest remaining habitat blocks in these areas. In Los Tuxtlas, where a Biosphere Reserve has been created, the State will appropriate resources for operational planning, administration and some enforcement activities. However, these resources will not extend to management of surrounding landscapes, where threats to the Reserve have their genesis. Regional PROFEPA offices will coordinate enforcement of environmental statutes, but without a specific focus on ecologically sensitive areas. The total appropriation for environmental management operations is estimated at US$0.9102 m over 8 years, entirely allocated by SEMARNAP.

4. GEF ALTERNATIVE

[11] Over the duration of the project, funding for some of these programs will be progressively transferred to the States as part of the Government's on-going decentralization drive. This is not expected to reduce baseline appropriations.

4.1 The Environmental Strategy is founded on the premise that stable conservation hinges in the long-term upon the ability to manage a mosaic of land uses, including protected areas, but also corridors, riparian strips, protected patches and biodiversity friendly landscapes within greater ecosystems. This in turn will require that ecosystem management approaches be integrated across sectors. The GEF Alternative aims at removing a number of constraints or barriers to integrated ecosystem management. Despite the probable benefits, and growing consensus within the scientific community of its justification, this management paradigm remains untested in Mexico, and both institutional and technical barriers to its execution and adaptation in the field will need to be overcome.

Institutional Frameworks: While the creation of the Federal BCI and regional COPLADES frameworks are an important step towards programmatic integration across key public sector agencies, these frameworks, of and by themselves will not be sufficient to integrate ecosystem management. Technical consultative groups are needed, to provide technical assistance for management. This constraint will be addressed by establishing Committees for Integrated Ecosystem Management and Biodiversity Protection, to be known as COBIDES. The project will help to define the optimal composition of these Committees, and gradually build their management oversight capacities. A second barrier is presented by the absence of corresponding institutional co-ordination structures at the local level. Clearly, command and control is not a viable approach to integrated ecosystem management, and the commitment and active collaboration of communities will be vital. The project would address this need by establishing Local Management Committees at the sub-watershed level, defining their geographical and administrative jurisdictions, and building their capacities to coordinate participatory planning, monitoring, enforcement and other needed activities. Teams of community motivators would be recruited in villages to mobilize community participation in management efforts, and awareness raising will be supported to impart conservation values. The GEF and SEMARNAP will share the costs of activities [GEF USD4.1173 m; co-financing USD5.2573 m].

Planning, Monitoring and Data Management: The key barrier here is the lack of data and capacities for adaptive management planning and impact and process monitoring. The Project will provide support for collecting and ground-truthing raw data, covering the biological, geographical and social parameters of land use management. Landscape pattern analyses will identify large habitat blocks, possible corridors and forest patches in need of protection. Technical assistance will then be provided to local communities to define and reach consensus on management solutions that integrate their development objectives with conservation. This consensus will be reflected in Local Management Plans, identifying activities and defining the functions and responsibilities of collaborating institutions, and elaborating rules and regulations for community lands. Capacities to monitor implementation of the Plans and evaluate their impacts will then be systematically strengthened. The GEF will cover the costs of these activities in identified pilot areas, including and surrounding the largest remaining blocks of natural habitat at each site. The GoM will assume the financial and technical burden of replicating the approach elsewhere. The costs of these efforts will be shared by the GEF, and SEMARNAP / Municipalities. [GEF USD2.2624 m; other USD3.7336 m].

Policy and Regulatory Framework: The principal barriers here include the absence of legal codes to give backing by Law to the proposed new institutional frameworks and Management Plans, the need to devise policy prescriptions across sectors for integrated ecosystem management, which warrants that policy constraints be further investigated, and the absence of tools for integrating environmental objectives into policy-making. The Project will address these shortcomings by supporting strategic demonstrations, and regulatory reform, and developing new, locally geared, instruments for policy making. The costs of executing the management paradigm will be met largely by re-orienting public

spending priorities in each region, and through cost savings derived from improving resource use efficiency. But the project will also investigate the feasibility of introducing a user-pays framework for new infrastructural developments and down-stream water consumption. The GEF would finance technical assistance, while the GoM will cover other costs [GEF: USD 1.4832 m; other: USD 0.6041 m].

Adapting Management of the Productive Sectors: The technologies to adapt land use management remain poorly defined, and integrated ecosystem management will necessitate the systematic trial and adjustment of promising technologies and land management practices, to local geographical and socio-economic fundamentals. Following field-work and public consultations engineered during project development, several areas have been identified as needing technological adaptation:. These are: 1]silvicultural regimes, to increase culture of native species on farms and plantations; 2] development of improved silvo-pastoral systems, that improve the productivity of rangelands; 3] definition of locally appropriate and sustainable farming intensification practices, employing adapted agro-forestry systems, integrated natural pest management systems, and soil conservation methods; 4] means of integrating wildlife ranching (i.e apiculture) into farming systems, through habitat enrichment; and 5] the development of locally appropriate energy efficient fuel stoves. The GEF would meet the costs of technical assistance and training for adaptation, while SEMARNAP and SAGAR would cover the costs of materials, land and labor costs. The GEF would also meet the costs of appraising success and will share the costs of training contact farmers, extension workers and other agents of technological dissemination. Government Agencies [SEMARNAP, SAGAR & SEDESOL] will finance replication of the models at the sites.[GEF: USD 3.8650 m; Cofin: USD 47.2218 m]

Creating Protected Areas: Protected Areas and set asides need to be created as an insurance against the loss of biodiversity in each landscape, and to provide refugia and recruitment areas for fauna and flora. The lack of Protected Areas in La Chinantla and La Montaña is a constraint to integrated ecosystem management in these regions. The Project will provide support for negotiating conservation easements and covenants with land owners, obtain local agreement from ejidos and comunidades to allocate lands for protection, demarcate boundaries, develop operational plans and provide staff, infrastructure and equipment to operationalize basic conservation functions. The GEF will limit its inputs to the establishment of infrastructure and will share a portion of the recurrent management costs on a declining ratio, with the GoM. [GEF: USD 3.5721 m; other: USD 4.7782 m]

5. Scope of Analysis:

5.1 Incremental costs have been assessed temporally, over the planned eight-year time frame of the GEF intervention, and geographically, by the administrative frontiers of the three project sites. The scope of analysis covers a total area of 1,318,000 ha., in 3 States, and 39 municipalities. Thematically, the analysis covers the suite of interventions necessary to ameliorate the proximate threats to forests, based on the diagnostic assessments performed as part of project formulation. Finally, the analysis captures the expenditures of 17 Government and non-Government institutions.

6. Incremental Costs and Benefits:

6.1 The Incremental Cost Matrix provides cost aggregates for the baseline and GEF Alternative. The GEF Alternative is costed at US$ 231.3919 m, and the Baseline at US$ 154.4968 m. The differential costs between the GEF Alternative and the Baseline are separated into a Sustainable Development Baseline, costed at US$ 47.2218 m. and comprising activities that will generate primarily domestic benefits, and incremental costs, financed by the GEF [US$ 15.3000 m.], and by the

Government of Mexico [US$ 61.5951]. These constitute the costs of interventions required to generate global environmental benefits by removing barriers to integrating ecosystem management.

Over the long term, integrated ecosystem management should benefit a mix of global and domestic benefits. The global benefits include the protection of alpha and beta bio-diversity, with an attached existence, indirect use, and option value that could otherwise be forfeited. The project will also define a viable approach towards arresting the depletion of vital forest carbon reservoirs. Other, lesser, global environmental benefits will accrue from the foreclosure of land degradation in watersheds, reducing the export of soil and nutrients into the Gulf of Mexico, and, through the improvement of soil conservation measures and integrated pest management, the intensity of agro-chemical use. Over the long term, these benefits will be magnified through the replication of the suggested management paradigm in other ecoregions, throughout Mexico, and elsewhere in Central America. The domestic benefits will provide incentives to sustain the paradigm. Over the long-term these benefits include the enhancement of productivity in the agriculture, livestock and forestry industries, the avoidance of costs associated with intensifying agriculture and livestock production, and sedimentation, storm flows and other costs connected with land degradation in water catchment areas. These costs are offset by the financial capital inputs pledged by the Government of Mexico.

6.2 A GEF grant is justified to remove barriers towards integrated ecosystem management of large landscapes. While, over the longer term, the management model is expected to incur negative incremental costs, with global benefits accrued in the course of pursuing national sustainable development objectives, the incremental costs of barrier-removal are positive. Also, domestic benefits are unlikely to be fully recovered over the short-medium term and, over immediate political and business cycles, are diffuse, and difficult to recover. This provides an immediate political and financial disincentive against investment in this arena. A contribution from the GEF in defraying barrier-removal costs will improve the cost-benefit calculus underpinning public investment decisions.

Incremental Cost Matrix

Component	Cost Category	Cost (in millions)	Domestic Benefit	Global Benefit
Institutional Framework	Baseline	Ignacio Irurita 0.0011m. Luisa Paré 0.0004 m. PSSM, A.C. 0.0187 m. SAGAR 0.1653 m. SEDESOL 1.5980 m SEMARNAP 0.1277 m. Government of Veracruz 0.3722 m. UNAM-CONACYT 0.0128 m. Total= US$2.2962 m.	Lack of institutional frameworks for engendering the participation of local communities in PRODERS and collaboration between local communities.	Lack of institutional frameworks for promoting integrated ecosystem management at bioregional scales.
	Increment	GEF: 4.1173 m Ignacio Irurita 0.0002 m SAGAR 3.0197 m SEMARNAP: 2.2376 m Total: US$ 9.3746 m.	Replicable models for community participation in PRODERS are tested and adapted, collaboration at the community level is improved, and local dispute resolution abilities are enhanced.	Institutional arrangements for integrated ecosystem management are strengthened locally and bioregionally
	GEF Alternative	**Total= US$ 11.6708 m.**		
Planning, Data Management &	Baseline	Conservation International 0.150 m SAGAR 0.0026 m. SRA 0.1206 m.	Understanding of systems processes linking the environ-ment with	Lack of data, plans, and monitoring and evaluation operations for integrated ecosystem

Component	Cost Category	Cost (in millions)	Domestic Benefit	Global Benefit
Monitoring		Total =US$ 0.2732 m.	development are limited, and the planning framework for programmatic integration between public agencies is weakly articulated.	management, hampers prioritization, and effective adaptation of conservation and development efforts to abate threats to global environmental values.
	Increment	SEMARNAP: 3.2486 m. CONABIO 0.4850 m GEF: 2.2624 m. Total: US$ 5.9960m.	Enhanced programmatic integration between public agencies, facilitates better gearing of investments towards foreclosing land and water degradation, and other externalities associated with the depletion of ecological capital	Data on biodiversity and carbon storage are collected and interpreted, monitoring programs are installed, and inform adaptive management planning and resource allocation within a representative sample of the 3 focus ecoregions.
	GEF Alternative	Total= US$6.2692m.		
Policy, Legal and Financial Mechanisms	Baseline	SEMARNAP: 1.0364 m. Demos Foundation 0.0209 m Total=US$ 1.0573 m.	Lack of capacities for effectively integrating public policies to achieve national sustainable development objectives	Global environmental objectives are weakly integrated into sector policies and the regulatory frame for promoting integrated ecosystem management needs strengthening.
	Increment	GEF: US$ 1.4832 m. SEMARNAP .6041m Total: US$ 2.0873 m.	Generation of new decision making instruments for sustainable development	New policy prescriptions, decision making tools and statutes advance integrated ecosystem management objectives and create a foundation for sustaining management over time.
	GEF Alternative	Total= US$ 3.1446m.		
Land Use Management Pilots	Baseline	SAGAR: 89.3062 m. SEMARNAP 1.1420 m. SEDESOL: 58.9747 m. Demos Foundation: 0.0171 m. SEDAP: 0.3986 m. Rockefeller F: 0.0168 m. Kellogg F: 0.0452 m. Goverment of the State: 0.0208 m. MacArthur F: 0.0241 m Maya Institute: 0.0145 m Total= US$149.9600 m	Accelerating soil and water degradation is threatening the long term economic sustainability of productive systems, and thus community welfare and threatens a number of down stream externalities (sedimentation and storm flows)	Progressive roll back of the natural ecological frontier as social, economic and demographic changes overwhelm traditional conservation practices; forest fragmentation leads to bio-genetic insularization and gradual loss of biological diversity
	Sustainable Development Baseline	51.2467 m SAGAR: 16.2708 m SEDAP: 0.4570 m SEDESOL: 20.8916 m SEMARNAP: 9.6024 m Total= US$ 47.2218 m	Improvement of know how , enables the systematic integration of ecologically benign and cost effective soil and water management systems into the productive systems, and reduces the risk of disturbance to vital hydrological cycles.	N/A
	Increment		Protection of option	Demonstration of

Component	Cost Category	Cost (in millions)	Domestic Benefit	Global Benefit
		GEF: US$ 3.865 m. Total: US$ 3.865 m.	values for scarce natural ecological capital.	biologically, social and economically viable means of creating biologically friendly landscapes on crop and rangelands and plantations expands available habitat for flora and fauna and restores forest carbon sinks.
	GEF Alternative	Total= US$201.2067 m.		
PA Creation	Baseline	Goverment of the State: 0.0067 m SEMARNAP: .9035m Total= US$0.9102 m.	Lack of effective protection of large forest blocks threatens the loss of direct use values from wild harvesting, and wild gene pools of medicinal plants and other locally important species.	Lack of effective protected areas threatens the gradual decay of refugia needed to maintain gene pools of local flora and fauna of global significance; lack of protection of large forest blocks threatens the release of forest carbon.
	Increment	GEF: US$ 3.5721 m. SEDAP Government of Veracruz 0.8555 m. SEDESOL: 1.2372 m SEMARNAP: 2.6856m Total: US$8.3504m.	Consumptive use benefits from the carefully regulated harvest of wild flora and fauna, in PAs and protection of future use values derived from recreational use.	Effectively operated protected areas provide insurance against species extirpation gene pools for the gradual re-colonization by wildlife of anthropologically modified landscapes and secures carbon sinks.
	GEF Alternative	Total= US$9.2606m.		
Total	GEF Alternative	US$ 231.3919 m.		
	Baseline	US$ 154.4968 m.		
	SD Baseline	US$ 47.2218 m		
	Incremental Cost			
	Full Project GEF Non-GEF Total	 US$ 15.3000m. US$ 61.5951 m. US$ 76.8951 m.		
	Preparation GEF GOM Total	 US$ 0.35 m. US$ 0.12 m. US$ 0.47m.		
	Grand Total	US$ 77.3651 m.		

ANNEX 2. THREAT DESCRIPTION THREATS, ROOT CAUSES AND ECOSYSTEM MANAGEMENT ISSUES:

Threat 1: Deforestation and Habitat Loss: Forest destruction and resultant habitat loss is the most serious and pervasive environmental threat facing the project sites. Deforestation occurs as a result of clearing to expand farms or rangelands, but also because of fuelwood extraction and occasional wildfires.

Root Causes	Proposed Actions/Alternatives
Rural communities within the project's focal regions have not been effectively engaged in conservation management programs. They have few resources and knowledge to effect conservation. The upshot is that they have little incentive to protect forests and biological diversity.	Integrate multiple-use natural resource management objectives into the regional development framework, actively involving rural communities in planning and decision-making and gearing development support towards addressing land management needs and environmental challenges [Immediate Objective];
There is a general lack of integration between conservation and development objectives, both within the Government, and within municipalities and local communities. There is inadequate capacity to plan for and perform this integration. A framework for monitoring and evaluating the environmental impacts of land use is lacking making it difficult to operationalize adaptive and flexible environmental management models.	Develop the institutional, policy and regulatory framework needed to integrate ecosystem management and regional and local development [Outputs 1 & 3 in conjunction with other Activities] Develop the baseline information needed to prioritize and plan integrated ecosystem management measures. Carry out on-going monitoring and evaluation of ecological processes and conservation outcomes as part of an adaptive management approach [Output 2]
Rural poverty and "marginalization" (i.e. inadequate access to basic social services - health, education, communications, water, energy-and infrastructure) serve as an impediment to conservation. A framework for "mainstreaming" social services with conservation is lacking.	Develop and promote mainstreaming mechanisms, and reformed policy frameworks, at the regional and federal levels to integrate conservation and development objectives [Output 3] and create the institutional apparatus at the regional and local levels to operationalize the mechanisms [Output 1] Promote business opportunities based on environmental management (Los Tuxtlas: tree nurseries aquaculture, bio-energy and timber plantations; Montana: tree plantations, nurseries; Chinantla: Ixtle, palm) [co-financing Outputs 3 & 4] Promote access to and widespread use of information on conservation-compatible development options that abet integrated ecosystem management [Outputs 2/4]
The know-how to integrate management of forests and agricultural landscapes within the agro-ecological conditions of the project sites is limited.	Establish demonstrations within the focal sites and eventually their surrounding landscapes/regions to demonstrate and promote integrated resource management (all) [Outputs 4/ 5] Strengthen inter-institutional mechanisms for planning and collaboration (all) [Output 1/ 3]

Root Causes	Proposed Actions/Alternatives
There is a basic lack of understanding within local communities of the connection between ecological systems and village and farm economies, including the potential adverse socio-economic feedbacks from forest and watershed degradation. At the regional level, there is little recognition of the environmental services afforded by wildlands, and of the need to compensate local populations for conservation actions that protect these values.	Support a mass and sustained institutional strengthening, training and awareness raising drive to impart conservation values to decision-makers and other important stakeholders [Output 1];
Inadequate regulation and enforcement of existing laws designed to protect and sustainably manage forests allows deforestation and other forms of habitat degradation to continue unchecked	Strengthened enforcement at the community level through empowerment, training, cooperative agreements and targeted strengthening of enforcement mechanisms (all) [Output 1/5] Assess policy and legal gaps and correct deficiencies (all) [Output 3] Decentralize management functions from the federal and state to the local level (all) [Output 3]
Insufficient or non-existent instruments, capacity and infrastructure for forest reserves and other types of protected areas Although a Biosphere Reserve has been recently created in Los Tuxtlas, conservation areas do not exist in Montana and Chinantla. Basic conservation functions such as boundary demarcation and advocacy are absent and policing and enforcement functions need strengthening; there is a lack of infrastructure, equipment and staffing for conservation management; 3 small core zones in Los Tuxtlas have been established as part of the PA, but these may be too small to maintain vital ecological processes and need to be joined through corridors to ensure impact	Establish new conservation set-asides in Montana and Chinantla, and consolidate the existing reserve in Tuxtlas, with core areas encompassing important habitats, sustainable use areas and buffers zoned for multiple, conservation-enabling resource uses. Explore and support the establishment of private and community conservation easements [Output 5]; Strengthen PA infrastructure (equipment, boundary demarcation, etc.) [Output 5] Create local resource management/protection capacity (all) [Outputs 1 & 5]
Traditional slash-and-burn agricultural practices exacerbate wildfires	Promote sustainable agricultural practices (all) [Output 4] Discourage and manage the use of fire in agriculture (all) [Outputs 1 & 5] Develop and support community fire prevention squads (all) [Outputs 1 & 5]

Threat 2: Species Loss/Extinction: Species loss is a second serious threat to the long-term integrity of the regions' ecosystems. Habitat and species loss is frequently a direct consequence of deforestation as well as inappropriate resource extraction by local inhabitants living at the forest edge.

Root Causes	Proposed Actions/Alternatives

Root Causes	Proposed Actions/Alternatives
There is inadequate enforcement of existing laws against illegal hunting and resource extraction. Gaps in the legal and policy framework hinder enforcement There is insufficient local capacity and infrastructure for the establishment and management of conservation/protection areas	Strengthened enforcement at the community level through cooperative agreements and targeted strengthening of enforcement capacity [Output 5] Designate forests and wildlife as being threatened; declare conservation/protection areas (all) [Output 5] Strengthen infrastructure (equipment, boundary demarcation, etc.) (all) [Output 5]
There is an inadequate level of proactive management There is little knowledge of how to minimize negative impacts from alternative income generating activities (e.g., subsistence farming, silvo-pastoral systems and NTFP extraction)	Establish a proactive and adaptive management regime; assess the existing situation and work to improve ambient ecological conditions (all) Develop baseline information on ecosystem functions, threatened/ endangered species (i.e., health, distribution, and species composition) etc. [Output 2]. Establish systematic monitoring programs (all) [Output 2] to define impacts, and adapt management
Conservation set-aside options have not been sufficiently developed and discussed with communities, contributing to encroachment Community support/involvement in management activities is inadequate	Establish new protected areas in collaboration with ejidos and comunidades; demarcate boundaries; make reserve management operational by developing a participatory planning framework (all) [Output 2] Train local people how to plan and manage their own resources (all) [Outputs 1 & 5]
There is no basic regional, integrated planning framework, linked to local needs A lack of alternative livelihood options, leads to unsustainable resource-use practices	Establish a regional, integrated planning framework to better guide regional development (all) [Output 2] Provide alternative, sustainable livelihoods to remove destructive pressure from habitats [Outputs 1,3 & 5]
There is a lack of awareness re. the importance of and opportunities offered by reserves/conservation set-asides	Raise the level of awareness and provide training in protected areas and wildlife management (all) [Output 1/5]

Threat 3: Soil and Water Deterioration from Unsustainable Annual Cropping and Extensive Grazing: Subsistence agriculture and the unsustainable practices associated with it (shifting cultivation, annual burning, extensive grazing, etc.) lead to accelerated soil erosion, watershed deterioration, and downstream impacts in all three PRODERS regions. Degraded lands occupy approximately 2 % of the Tuxtlas, 12.8 % of the Montana, and 0.5 % of the Chinantla focal sites.

Root Causes	Proposed Actions/Alternatives
There is inadequate institutional and human capacity within the GoM 's agricultural agencies to regulate slash-and-burn farming; limited enforcement means that there is little disincentive for farmers to open up new forest areas for cultivation	Strengthen participatory planning/management skills, including monitoring, negotiation, policing and enforcement skills [Outputs 1,2, & 4]; Test quid pro quo stewardship compacts that link access to development services to compliance with environmental statutes [Outputs 1, 2 & 3]; Strengthen enforcement capacity of key institutions through training programs and formulation of new, collaborative efforts; cross-authorize staff from agencies for enforcement work (forest officers,

Root Causes	Proposed Actions/Alternatives
	wildlife officers); adequately train and equip staff;
Inadequate and/or inappropriate technology/ farming / rangeland management methods are used. Traditional farming systems are characterized by an absence of soil conservation methods such as ditching, mulching, and soil stabilization through tree planting; farming productivity is low, and soil impoverishment results in short cropping cycles; Farming services have inadequate outreach to communities providing them with limited recourse to technical assistance and other inputs that would enable them to intensify and diversify production; There is a general unfamiliarity amongst extension workers with more sustainable harvest techniques	Develop locally appropriate agro-silvopastoral systems, geared to local agro-ecological conditions and tested and adapted by contact farmers; evaluate the costs and benefits of improved methods from the perspective of the farmer, taking cultural and social feasibility into account, and accounting for risks. [Montana: silvo-pastoral and animal husbandry, fruit trees (mamey, coffee, maguey and prickly pear cultivation: organic coffee, nurseries, small-animal production' Los Tuxtlas, animal husbandry, adaptation of silvicultural systems, soil conservation) Strengthen baseline agricultural support programs to ensure that 1) farming support services reach rural/forest-edge communities; 2) skills building focuses on improving soil conservation practices through locally appropriate methods; and 3) they provide inputs to catalyze sustainable farming system intensification [Outputs 1,3 & 4]; Strengthen community management capacity through requiring more community input; strengthening existing community institutions (NGOs, coops) and developing partnerships for sustainable management of resources (user rights agreements, credit and financing mechanisms) (all) [Outputs 1, 2 & 3]
There is a lack of stakeholder understanding about impending environmental and related losses There is unfamiliarity with options and little or no access to technical information	Enable people, through demonstration programs and training, to choose alternatives

ANNEX 3. ENVIRONMENTAL OVERVIEW AND MAPS

BIODIVERSITY

1. The three project sites represent a wide variety of ecosystems in both dry and humid tropical biomes, which host a range of forest types from temperate pine and oak-pine forests, to tropical rain forest. The sites harbor an impressive sample of Mexico's remarkable biological heritage, and are outstanding for their alpha and beta diversity. The ecosystems of the sites also are also characterized by their great diversity of organisms of different taxa. [It is important to note that while some taxa has been relatively well studied in Mexico, faunal and floral inventories are not complete.] Further assessment is needed to fill in knowledge gaps. The key attributes of the sites are summarized below.

ECOSYSTEM DIVERSITY

2. Despite the fact that all of the project sites are located south of the Tropic of Capricorn, the ecosystems that occur within them are not all tropical. Ecosystems facing the Pacific coast show a rain shadow -effect and are generally much dryer than those facing the Gulf of Mexico. Among ecosystems with the same aspect, there are huge differences in biota, caused primarily by altitudinal and humidity variations[12]. The La Montaña site, within the State of Guerrero, forms part of a watershed draining to the Pacific Ocean and contains two ecosystems of global significance. The first is the Balsas Dry Forest which is endangered, regionally outstanding, and classed as a high conservation priority at a regional scale (Dinersten et al, 1995). The second is the Sierra Madre del Sur Pine-Oak Forest, classified as critical, globally outstanding, and also of high regional priority (ibid). These ecoregions harbor a large number of animal and plant communities, within vegetative types including pine forest, pine-oak forest, montane moist forest, and tropical moist and dry forests. The Balsas dry forest is of global importance as the center of radiation and speciation of important tropical plant families such as Burseraceae. Species diversity for several other plant families is high.

3. Los Tuxtlas represents the Tehuantepec Moist Forest Ecoregion, which is endangered, bioregionally outstanding, and of high regional priority (ibid). Los Tuxtlas is a volcanic region composed of low mountains, which abuts the Gulf of Mexico, and constitutes the northernmost extension of tropical rainforest in Mexico. Because of its location and recent geologic origins, Los Tuxtlas is unique, both in terms of biodiversity and the structure of its biological communities. There are few regions in the tropics with a shrub layer as dense as that of Los Tuxtlas, which is due to the dominance and abundance of the palm Astrocarium mexicanum. Mangroves are also found on the southern coastal fringe of Los Tuxtlas, with the endangered tree, Rhizophora mangle, dominating.

5. The La Chinantla site also contains part of the Tehuantepec Moist Forest Ecoregion. It has an impressive altitudinal gradient, which drops from nearly 3000 m.a.s.l. to almost sea level in a relatively short distance. The mountains in the Chinantlas form an orographic barrier to the humid clouds coming off the Gulf of Mexico, resulting in abundant precipitation. The humidity and altitudinal gradients that are formed give rise to many different plant communities within numerous forest types, including pine forest, pine-oak forest, montane moist forest (the largest stand in the country), and tropical rain forest. The site is within the transition zone between the Neotropic and Neoarctic biogeographical regions. Some studies suggest that this region is also a Pleistocene refuge. These characteristics combine to make La Chinantla a globally important and very unique bioregion.

[12] Mexico has one of the greatest beta and gamma biological diversities in the world, and therefore, even similar vegetation types within the country have different biota.

Plant Diversity

6. 184 plant families have been reported in the Chinantla region, with a total of 1899 species, 39 of which have protection status under Mexican law. The most important vegetation type of the region from a conservation perspective is the montane moist forest (bosque mesofilo). Montane moist forests are estimated to represent 10-12% of Mexico's biodiversity, which in turn may account for approximately 10% of global biodiversity. 151 plant families and 925 species have been reported in La Montaña. Among the most important genus are Pinus, with more than 19 species and varieties recorded, Quercus with 21 species and Bursera, with at least 22 different species. Los Tuxtlas harbors 75 plant families and 233 species. Mexican law protects 40 of these, and 6 or more are endemic to the country or region. Ceratozamia mexicana, Zamia loddigessi, Rhizophora mangle, Chamedorea ernesti-angusti and Ch. metalica are among the most threatened species at the site.

Reptilian Diversity:

7. For Chinantla 16 orders, 25 families and 200 species of reptiles have been reported. 114 of those species are classified as globally important, being endemic either to the region, or to the country. Six are listed in CITES, including Crocodylus acutus, Clelia clelia and Dermatemys mawi. In Montaña, a total of 112 species have been identified, representing 16 families and 2 orders. 63 of these species are listed as endangered, rare, subject to special protection, or threatened under the Mexican Official Norm. Despite the high number of reptilian species found in the region, only one, Crotalus durissus durissus, is included in CITES. Los Tuxtlas is an area rich in herpetofauna: at least 112 species have been recorded there, representing 3 orders and 24 families. Of these species, at least 10 are endemic to Los Tuxtlas, and 52 are included in the Mexican Official Norm. Some of these species are very endangered, including Dermochelys coriacea, Dermatemys mawii, Crocodylus moreletii, Boa constrictor and Bothrops asper, which are among the 8 species listed in CITES. The presence of C. moreletii underscores the importance of preserving the site's aquatic ecosystems.

Bird Diversity

8. For la Chinantla, 16 orders, 59 families and 529 bird species have been reported. Of those, 169 are protected under Mexican law, 26 are of global importance because they are endemic, and 10 are listed in CITES. Anas clypeata, Burhinus bistriatus, Falco peregrinus, and Colinus virginianus are among those listed. 187 bird species have been reported in La Montaña, representing 37 families and 2 orders. These include cosmopolitan, tropical and temperate families, again a reflection of convergence of tropical and temperate ecosystems. More information is required to assess the population dynamics of these birds. Since birds are one of the groups most sensitive to environmental change, they can be used as key species for monitoring ecosystem status and project performance. Only two species are included in CITES: Falco pergrinus and Ortalis vetula. A total of 37 species are endemic either to the country or to the region, thus qualifying as species of global importance. The Tuxtlas is a region with one of the richest avifauna distributions in Mexico. 561 different species of birds have been reported, 230 of which are neararctic-neotropical migrants. One species (Camphylopterus excellens), and six of the subspecies reported (Geotrygon lawrencii carrekeri, Empidonax flavescens imperturbatus, Myioborus miniatus molochinus, Euphonia gouldi loetscheri, Atlapetes brunneinucha apertus and Chlorospingus ophthalmicus wetmorei) are endemics to Los Tuxtlas, and 20 others are endemic to a larger area. 55 of the species reported are endangered, and 30 are in danger of extinction. Los Tuxtlas also has the distinction of being in the flight path of the "River of Raptors" - one of the most spectacular migratory bird phenomena in all of the Western Hemisphere.

Mammal Diversity

9. For Chinantla, 10 orders, 30 families and 260 species of mammals have been reported. Of these, 40 species are endemic and considered of global importance. 17 species are listed in CITES, among them Ateles geofreyi, Panthera onca, and Puma concolor. The mastofauna occurring in Chinantla is representative of both Neotropical and Neoartic faunas, another reason to consider la Chinantla as transitionary between these two biogeographic realms. In Montaña, a least 63 species of mammals are found, ranging from big cats and deer, to small rodents and bats. These species represent 18 families and 7 orders, with 7 of them endemic and 6 included in CITES. In Los Tuxtlas, 12 orders, 31 families and 98 species of mammals have been reported. Of these species, 25 are protected by the Mexican Law on account of their rarity, 21 are included in CITES and 1 is endemic.

CLIMATE CHANGE MITIGATION BENEFITS

10. The PRODERS project offers important global climate change (GCC) mitigation benefits, both in terms of carbon sequestration in forests and soils, and in terms of emissions avoidance from slash and burn agriculture. As demonstrated in Mexico's country studies and action planning work[13], One of the highest priority areas of opportunity for GHG mitigation in Mexico is in the forest management sub-sector (i.e. through maintaining carbon sinks in densely forested areas). According to Masera, et.al (1995b)[14], "under an appropriate policy framework, the forestry sector (of Mexico) has the capacity of reducing the growth of CO2 emissions in the energy sector, which makes it one of the most important mitigation options in the short to medium term." This area of mitigation is strategic and especially attractive because, if done properly, it generates additional benefits in terms of biodiversity conservation, watershed protection and sustainable rural development. This mitigation action, in addition to maintaining carbon sinks in forests and soils, also avoids the emission of greenhouse gasses resulting from land conversion by shifting agriculture.

11. An initial analysis focusing exclusively on the eight pilot areas proposed under the project (Attachment A), indicate that significant potential exists for carbon emissions avoidance when comparing "with project" and "without project" scenarios. Assuming a continuance of current deforestation/degradation rates over a timeframe of 20 years, forest conservation in itself will avoid in the order of 10.23 to 16.89 million metric tons of carbon emissions. In addition, assuming that the project will lead to the establishment of 5,200 Ha. of fuelwood and 1,500 Ha. of timber plantations, 5,000 Ha. of natural forest management, and 2,500 Ha. of agroforestry systems in the buffer zones of these pilot areas, an additional 1.81 to 2.177 million tons of carbon could be sequestered. These estimates are based on general and very preliminary figures of carbon contents for different land uses and forest types in Mexico. In depth, site-specific assessments of carbon cycling in each of the pilot areas will be performed as part of the process of ground-truthing baseline indicators, which will allow much more precision in the determination of the project's carbon sequestration and offset benefits[15].

WATERSHED AND SOIL PROTECTION BENEFITS

12. Mexico is a country with scarce water resources with water being a major constraint to sustainable development throughout the country. Water conservation, along with biodiversity conservation, are two of the country's greatest and most urgent environmental challenges. The

[13] According to Mexico's Climate Action Plan, 1999

[14] Masera, O., 1995. *Deforestación y Degradación Forestal en México*. Documento de Trabajo 19. Grupo Interdisciplinario de Trabajo Rural Apropiada, A.C. Pátzcuaro, Michoacan, México. 50 pp.

[15] The afore-mentioned benefits will be magnified through the expansion of ecosystem management at each site.

PRODERS sites targeted by the project form part of important watersheds, as described below:

Los Tuxtlas: The mountain massifs that constitute the Los Tuxtlas are important headwaters and catchment areas for the Coatzacoalcos and Papaloapan river basins, both of which are among the highest volume discharge watersheds (per unit surface area) in the country. These watersheds feed the important freshwater lake of Catemaco located to the south, and to the north numerous important coastal lagoons and mangrove systems including Laguna de Sontecomapan and Laguna Costera del Ostión.

La Montaña: The two pilot areas of this site, the Huamuxtitlán-Tehuaxtitlán Canyon to the north, and the Iliatenco-Barranca del Aguila , both form the headwaters of the important Balsas river basin, which has in its lower important agricultural projects that irrigate more than 3,300 Ha.. The forests of the site are significant in that they sustain dry-season runoff for these projects. The Huamuxtitlán-Tehuaxtitlán Canyon also supplies irrigation water for the Huamuxtitlán Valley, which is of regional importance.

La Chinantla: The watersheds of the high and low Chinantla flow into the Papaloapan river basin, and supply the Miguel de la Madrid and Miguel Aleman flood control and hydroelectric dams located in its mid reaches. Both of these dams protect important downstream lowlands of the State of Veracruz and generate power for the national grid.

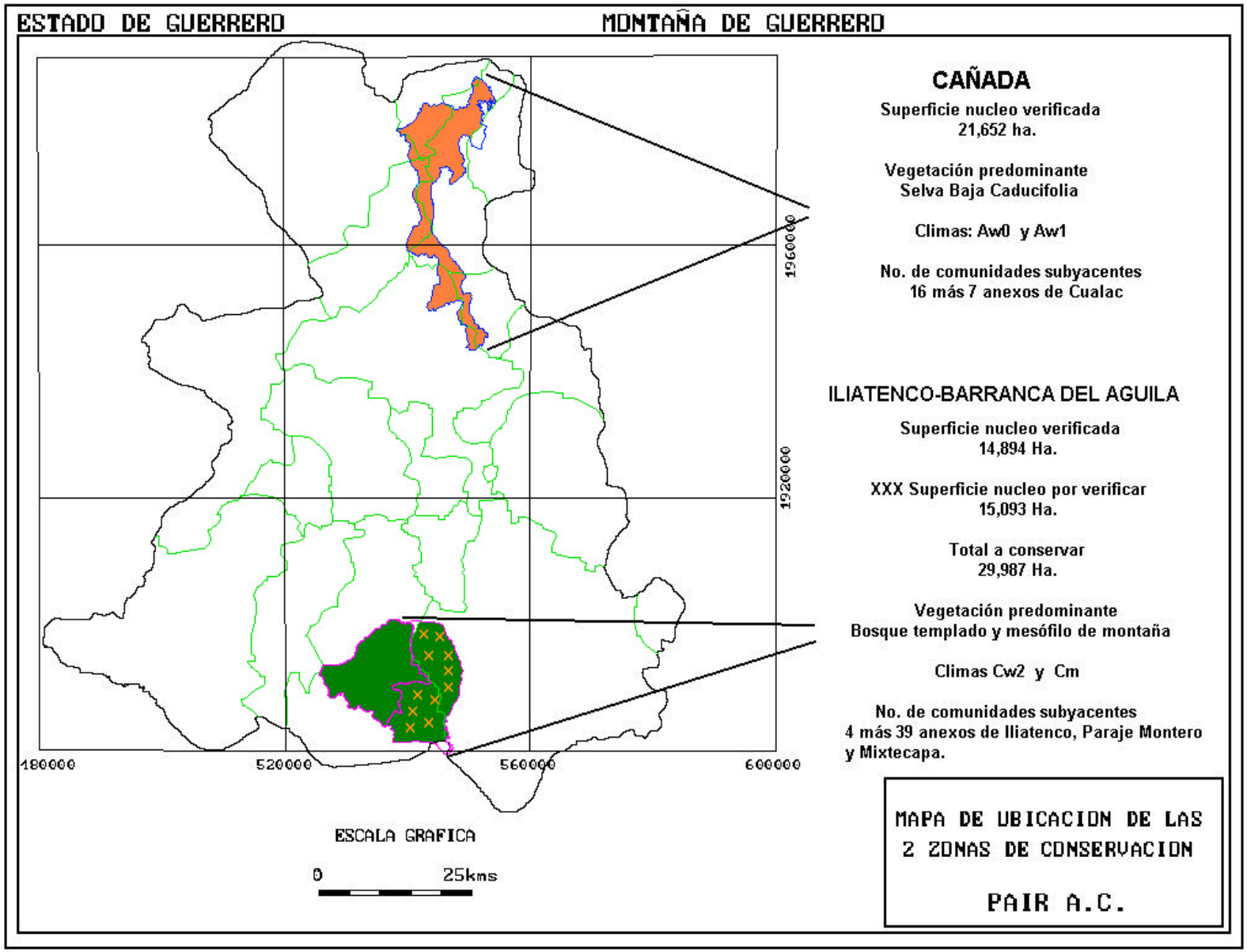
Land and Soil Degradation:

13. The conservation of soil resources is dependent primarily upon two factors: that soils are used in accordance with their capability, and that soil management practices be appropriate and suitable. During the last forty years Mexico has witnessed drastic changes in terms of population growth, accelerated urbanization and industrialization, and increasing levels of rural poverty. These changes have provoked irreversible changes in terrestrial ecosystems, soil erosion and land degradation. Currently, levels of soil erosion and land degradation are severe throughout Mexico, and giving rise to desertification in many regions. Land degradation of some degree occurs in 95% of the landscape. Wind and water erosion occurs on 85% and 60% of the countryside, respectively. Consequent biological degradation and associated desertification is observed on an estimated 80% of the land.16The project sites are no exception. Land degradation occurs on an estimated 0.5 % [2.384 Ha.] of the Chinantlas; 12.8 % [88,573 Ha.]of the Montaña; and 2 % [2,448Ha.] of the Los Tuxtlas

Attached: Site Maps

[16] CONABIO, 1998. *La Diversidad Biológica de Mexico: Estudio de País*. 341 pp.


GEF-PRODERS
"Integrated Ecosystem Management
in 3 Priority Ecoregions"
N
REGIONES
Chinantla, Oax.
Montaña, Gro.
Tuxtlas, Ver.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Climas: Aw0 y Aw1
No. de comunidades subyacentes
16 más 7 anexos de Cualac
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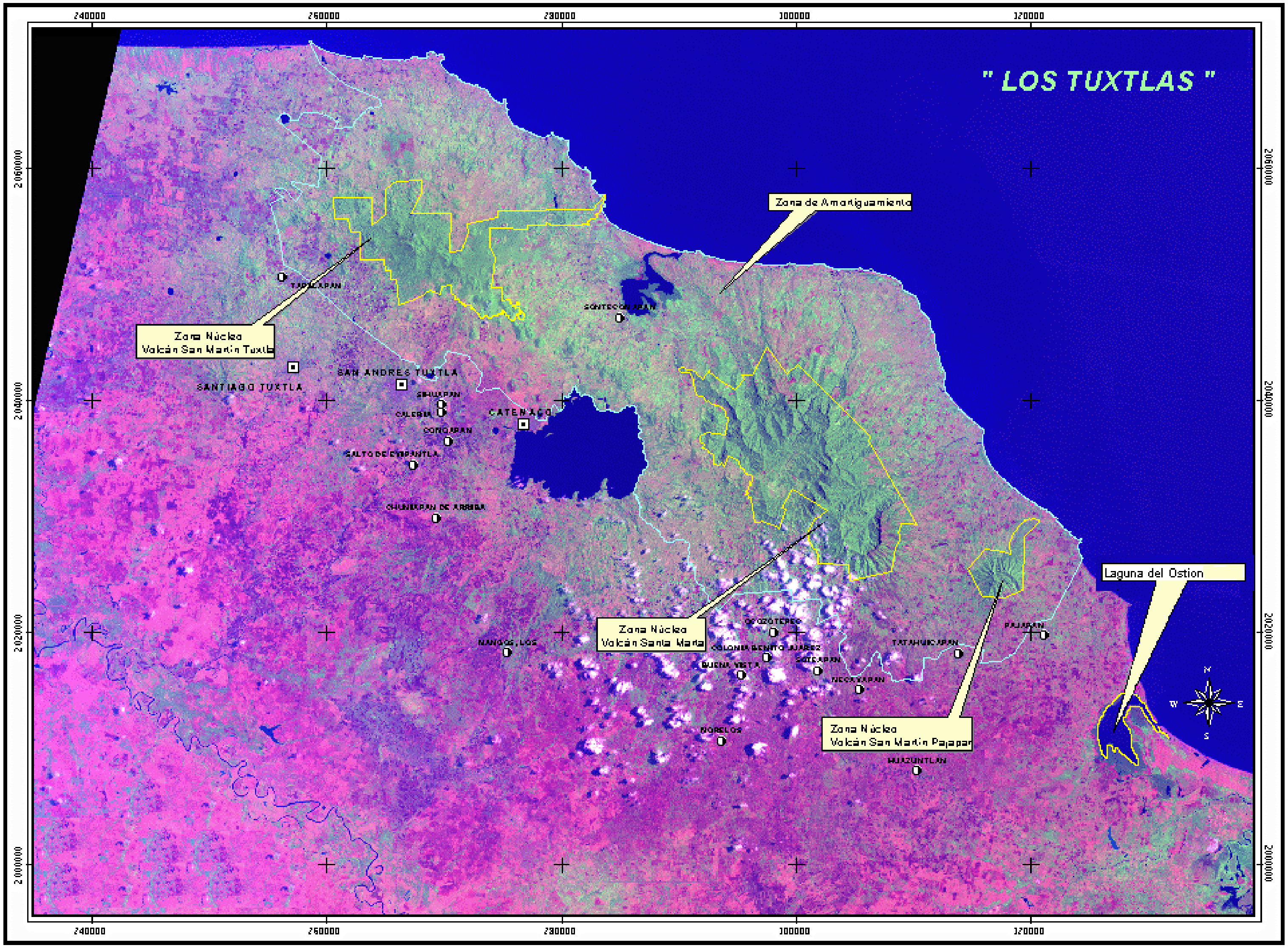
Superficie nucleo verificada
14,894 Ha.
XXX Superficie nucleo por verificar
15,093 Ha.
Total a conservar
29,987 Ha.
Vegetación predominante
Bosque templado y mesófilo de montaña
Climas Cw2 y Cm
No. de comunidades subyacentes
4 más 39 anexos de Iliatenco, Paraje Montero y Mixtecapa.
MAPA DE UBICACION DE LAS 2 ZONAS DE CONSERVACION
PAIR A.C.


" LOS TUXTLAS "
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Zona Núcleo
Volcán San Martín Tuxtla
Zona Núcleo
Volcán Santa Marta
Zona Núcleo
Volcán San Martín Pajapan
Laguna del Ostion
SAN ANDRES TUXTLA
SANTIAGO TUXTLA
CATEMACO
SONTECOMAPAN
SIHUAPAN
CALERIA
COMOAPAN
SALTO DE EYIPANTLA
CHUNIAPAN DE ARRIBA
MANGOS, LOS
OCOZOTEPEC
COLONIA BENITO JUAREZ
BUENA VISTA
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MECAYAPAN
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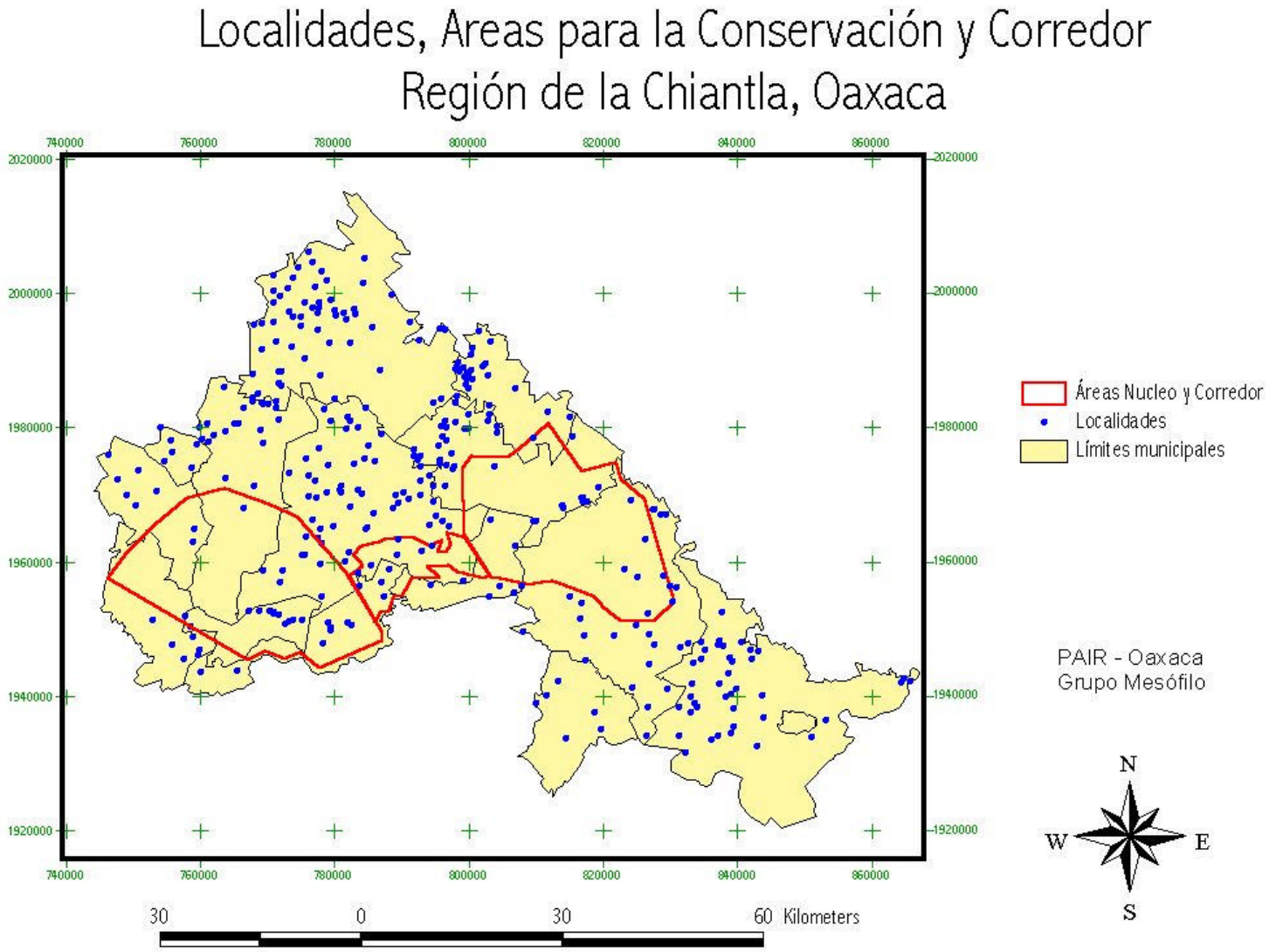
Localidades, Areas para la Conservación y Corredor
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PAIR - Oaxaca
Grupo Mesófilo
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ANNEX 4. INSTITUTIONAL PROFILES

The following table provides a brief description of the functions of the different institutions functioning within the conservation arena at the 3 project sites. The role of the various entities as regards the execution and implementation of the project, is also briefly summarized:

Institution	Role in Project
Government Agencies:	
The Secretariat of Environment, Natural Resources and Fisheries (SEMARNAP): Established in 1994 in a bid to integrate environmental and natural resources management under one institutional umbrella, SEMARNAP consists of 3 Under Ministries (Planning, Natural Resources and Fisheries), and 5 semi-autonomous agencies, (the National Water Commission (CNA), the National Institute of Fisheries (INP), the Mexican Institute for Water Technology (IMTA), the National Ecology Institute (INE), and PROFEPA— the Attorney General's Office for Environmental Protection).	The Secretariat will serve as the National Executing Agency, accountable to UNDP for delivery of agreed outputs. SEMARNAP manages a number of programs compatible with the principles of the NBS, and relevant to this project. These include management of Protected Areas (PA); sustainable forestry management (PRODEFOR), reforestation (PRONARE), commercial plantation programs (PRODEPLAN), and sustainable use systems (UMA).
DGPR: General Directorate for Regional Projects for Sustainable Development (PRODERS)	DGPR will be the office within SEMARNAP responsible for overseeing the implementation of the project.
INE	INE will provide expertise and follow-up for the management of protected areas.
CNA	CNA is responsible for water and catchment management. The project will collaborate with CNA for the purposes of managing sub-watersheds, and introducing water use fees to recover management costs.
PROFEPA	PROFEPA is the enforcement arm of SEMARNAP, and will be responsible for enforcing environmental regulations and auditing development activities to ensure compliance with environmental laws.
Under-secretariat of Natural Resources	The Natural Resources Under-secretariat is responsible for forestry including the prevention and control of wildfires. It will assume responsibilities for forest management activities, including fire control.
General Directorate for soil conservation and restoration (DGRCS)	DGCRS will provide technical assistance for land use management and soil conservation.
CECADESU: Center for Training on Sustainable Development, a partially decentralized educational office of SEMARNAP's Under-Ministry for Planning.	CECADESU will provide technical assistance for environmental education and co-coordinating public involvement

Institution	Role in Project
The Ministry of Agriculture, Livestock and Rural Development executes government policies in the agriculture and livestock sectors. Its functions --as modified in April 1996-- are broadly defined. In terms of its organizational structure, SAGAR operates through 3 Sub-secretariats: Agriculture and Livestock, Rural Development, and Planning. SAGAR coordinates research in the livestock and agriculture field, and supports higher education programs in agronomy, animal husbandry and related fields.	SAGAR will fund agriculture research, agricultural inputs and rural outreach efforts. Much of the mainstreaming expected under the project would result from re-orientation of this line ministry's baseline activities.
The Under-secretariat for Agriculture and Livestock: Established in 1996, the under-secretariat is responsible for the administration of agricultural sector policies, and operates through three general directorates: Agriculture, Livestock, and Agro-Development.	While all three Under-secretariats manage a number of baseline interventions that have bearing on conservation, the Under-secretariats for Agriculture and Rural Development will be directly involved in project planning efforts.
Under-secretariat for Rural Development (SDR): Established in 1996. It develops and implements policies and strategies relating to the rural productive sectors. There are two divisions, namely, Rural Development and Regional Programs.	SDR will support project goals through programs and activities that are geared to reducing livestock pressure on rangelands and forest resources in the pilot areas. Project coordination will be handled through the Regional Programs' General Directorate.
Secretariat of Social Development (SEDESOL): SEDESOL is the government agency charged with designing, coordinating and implementing the government's social policy. In addition to its coordinating role, SEDESOL also leads the federal government's poverty relief initiatives through its Under-secretariat for Regional Development. Programs include the National Fund for Social Enterprises (FONAES), National Fund for Handicrafts Promotion (FONART) and Regional Indigenous Funds, as well as the Program for Education, Health and Food (PROGRESA) Decentralized agencies associated with SEDESOL include the National Social Development Institute (INDESOL), which has a strong focus on community development and supports training of NGO's and local governments; The National Indigenous Affairs Institute (INI), charged with promoting economically and socially equitable development of the nation's indigenous groups; and various programs that provide subsidies to low income communities.	SEDESOL will provide assistance and funding for rural and social development through the extension of micro-credits, and support for micro-enterprise development. Decentralized SEDESOL resources constitute one of the main targets for mainstreaming (development with environment) under this project. The General Directorate for Social Programs will coordinate SEDESOL's input to the project. INI infrastructure and methodologies will be used to translate training/ extension materials into local languages.
Secretariat of Communications and Transport (SCT). This sector is comprised of Under-secretariats for Transport, Communications and Infrastructure. As the institutional mandate of this Ministry includes the approving, planning and constructing all major highways, secondary routes and rural roads and byways, its investment program can have substantial ecological impacts. Likewise, impacts on rural development and market access can be substantial.	The Ministry will work with PRODERS to strengthen environmental assessment procedures in sensitive sites.

Institution	Role in Project
Secretariat of Health (SSA): SSA is comprised of three Under-secretariats, one of which has direct links with the environmental sector (Under-secretariat for inter-sector coordination). Many of the aspects of environmental quality relate directly to health issues (air and water quality, among others).	This Secretariat will assist with the provision of basic health and family planning services in the pilot areas.
Secretariat of Public Education (SEP): SEP is the most highly decentralized agency of the Mexican Federal Government, with a presence in many of the country's most isolated towns and hamlets. The Secretariat is currently promoting the incorporation of environmental education into primary and secondary schooling curricula.	SEP will help strengthen educational systems and will serve as an implementation mechanism for the awareness campaign. Rural satellite broadcast infrastructure (tele schools) will be used for training.
Secretariat of Commerce and Industrial Development (SECOFI): SECOFI works through two principle policy devices, the Industrial Policy and Foreign Commerce Program and the Internal Commerce, Supply and Consumer Protection Program, both of which have direct impacts on natural resource management and commercialization.	SECOFI will provide support for small business development. Overall impacts of certain sectoral policies will be studied in depth over the course of project implementation, vis-à-vis their impact on sustainable development and ecosystem management.
The Agrarian Reform Sector is comprised of four agencies, the Agrarian Reform Secretariat (SRA), the Attorney General's Office for Agrarian Affairs, the National Agrarian Register and the National Fund for Ejido Development (FIFONAFE). One of the most important policy instruments operated by SRA is the Ejido Rights and Property Deeds Program (PROCEDE).	This Ministry will be in charge of resolving agrarian/land tenure conflicts, as well as contributing towards the creation of an enabling environment for effective conservation through PROCEDE and other instruments.
State Governments	State governments will collaborate in the project, by reorienting State-level rural development programs to address integrated ecosystem management fundamentals, in accordance with relevant plans. Also, State governments would incorporate community and ejido inputs in State-level land-use planning activities, providing a solid legal framework.
Municipal Governments	Local municipal governments will be targeted for zoning and resource management reform. Most of the watershed and protected area management work will be coordinated through local municipal governments.
Non Governmental Institutions: Many different non-governmental agencies will participate in the project, both in development of pilot projects, as well as in the design and implementation of training modules and dissemination. These include extension groups, community-level organizations, conservation groups and academic institutes, some with purely local constituencies and others with a regional or even national presence The specific responsibilities of NGOs in project implementation will be	

Institution	Role in Project
determined once final approvals have been obtained, following due processes established for nationally executed projects.	
NGOs LA CHINANTLA	
ERA, A.C.	ERA works mostly with forest-edge communities in the Chinantla Alta region, sponsoring technical training programs that focus on the preparation of forest management programs. These programs, which have been internationally recognized, allow for the rational and equitable use of both timber and non-timber resources. ERA works with indigenous communities, has sustainable agriculture and community development programs and works with women.
Methodus Consultora, A.C.	This group works in the Chinantla Baja region, and supports smallholder participation in the productive sectors by preparing market studies and providing training opportunities. Its recent interventions have focused on increasing returns from production, by improving bargaining power, eliminating marketing intermediaries, improving product quality and value added. Methodus works with indigenous communities, has sustainable agriculture and community skills development programs.
Grupo Mesófilo, A.C.	A national-level NGO that is dedicated to the protection of cloud forests. The group focuses on social, productive and ecological issues in order to identify sustainable alternatives to destructive land uses. This NGO works with indigenous communities has sustainable agriculture and community development programs.
PAIR, A.C.- Oaxaca	This organization works in both the Chinantla Alta and Chinantla Baja regions in collaboration with Grupo Mesófilo, A.C to promote ecologically sustainable livelihoods. In particular, this group has promoted the use of a highly valued, natural fiber called Pita, which is used to decorate saddles, belts and other leather products.
LA MONTAÑA	
PAIR, A.C. Montaña	PAIR has worked in the Montaña region for over 17 years, carrying out social and ecological diagnostic studies to help identify alternative livelihoods. The group has been widely recognized for their efforts to gain the participation of communities in their projects. PAIR has made a significant contribution to silvicultural research. PAIR works with indigenous

Institution	Role in Project
	communities, has sustainable agriculture and community development programs and works with women.
Tlachinolán	Tlachinolán is a human rights organization.
LOS TUXTLAS	
Proyecto Sierra de Santa Marta	The Sierra de Santa Marta Project is an NGO that has been working for nearly a decade in the Santa Marta region in Los Tuxtlas, Veracruz. Its work is molded by an integrated vision that incorporates social, ecological and productive elements in order to protect and repair the natural environment, and to expand the menu of economic opportunities in the region. This organization is well known and accepted by local communities. This NGO works with indigenous communities, has sustainable agriculture and community development programs and works with women.
DECOTUX, A.C.	This NGO was founded in 1995, and focuses on improving the productivity of smallholder agriculture. The NGO has promoted the use of 'green' fertilizers, development of organic agriculture and alternative technologies. DECOTUX works through community motivators in order to create networks of campesinos. DECOTUX works with indigenous communities, has sustainable agriculture and community development programs and works with women.
Instituto de Ecología, A.C.	The Institute is dedicated exclusively to biological research, and has contributed to increasing knowledge of the biodiversity of the Los Tuxtlas region.
PLADEYRAS	This consultant group has worked throughout Mexico, and specializes in the preparation of land-use management studies.
University of Veracruz	Researchers from this university have worked extensively in the Ls Tuxtlas region, and they are currently responsible for design and partial implementation of the management plan for the Biosphere Reserve, in close collaboration with the NGO Sierra Santa Martha.
UNAM- Center for Investigation in Los Tuxtlas	Focuses on biological aspects in the region, and maintain close relations with several relevant institutions.

ANNEX 5. NOTE ON SYNERGIES BETWEEN UNDP/GEF AND WORLD BANK/GEF PROJECTS:

Project	Objectives	Geographic Location	Ecosystem Approach	GEF Allocation	GOM Allocation
Programmatic Framework	In the Programmatic Framework, GEF would provide phased and sustained support for the implementation of a multi-year medium-term program of crosscutting project support. The program builds on Mexico's report to the Convention on Biological Diversity prepared under a GEF-supported enabling activity. GEF would first help to deepen the commitment by supporting the preparation of an overall Action Plan to implement the National Biodiversity Strategy and the parallel execution of certain essential project and program activities. This is with a view to progressively deepen the commitments of integration and mainstreaming biodiversity objectives, taking advantage of the exceptional progress already made in Mexico.	The pipeline has GEF interventions in the following states: Baja California, Chiapas, Coahuila, México, Michoacán, Morelos, Oaxaca, Puebla, Querétaro, Quintana Roo Sonora, Tabasco, Veracruz.	Arid and Semiarid Ecosystems; Coastal, Marine and Freshwater Ecosystems; Forest Ecosystems; Mountain Ecosystems; Integrated Ecosystems Management (OP1, OP 2, OP3, OP4, OP12)	Not Defined	Not Defined
Consolidation of Protected Areas	Strengthening of the endowment fund for protected areas, to include an additional number of globally significant, federally decreed protected areas. Activities are directed towards strengthening GOM's in-situ conservation capacity, one of the 5 target areas of the overall conservation priorities as identified in the NBS	12 Natural Protected Areas Tehuacán-Cuicatlán, (Puebla, Oaxaca); Alto Golfo, (Baja California-Sonora); Los Tuxtlas, (Veracruz); Cuatro Ciénegas, (Coahuila); Corredor Chichinautzin-Zempoala,(Morelos-México); Sierra de Álamos, (Sonora); Sierra Gorda, (Querétaro); Sierra de Huautla, (Morelos); La Encrucijada, (Chiapas) Pantanos de Centla, (Tabasco); Banco Chinchorro, (Quintana Roo); La Sepultura, (Chiapas)	Coastal, Marine and Freshwater Ecosystems; Forest Ecosystems; and Mountain Ecosystems (OP 2, OP3, OP4)	US $ 31 Million	US $ 72 million

Project	Objectives	Geographic Location	Ecosystem Approach	GEF Allocation	GOM Allocation
Indigenous and Community Conservation	Valuation of the traditional authorities and institutions that regulate access of indigenous peoples to commonly-owned natural resources. Strengthening and creating community conservation regimes will protect globally important biodiversity, and provide new regimes of in situ conservation outside of the SINAP	Oaxaca, Guerrero, Michoacán	Montane Ecosystems, Forest Ecosystems (OP4, OP3)	US $ 7.5 Million	US $ 11.2 Million
Integrated Ecosystems Management in 3 Priority Ecoregions	The project will crease the institutional framework, strengthens local capacities and empowers local stakeholders to create and manage a mosaic of conservation-congruent land uses, including new set-asides for biodiversity protection, compatible agro-forestry and silvo-pastoral systems, and restoration within each of the 3 target sites.Also, it will strengthen and cross-fertilize PRODERS by piloting integrated and replicable ecosystem-management models that conserve biodiversity and sequester carbon, and foreclose land degradation in watersheds.	Oaxaca (Chinantla), Guerrero (Montaña), Veracruz (Tuxtlas)	Integrated Ecosystem Management (OP 12)	Not Defined	Not Defined

ANNEX 6. EQUIPMENT & INFRASTRUCTURE

Item	Quantity	Cost	2001	2002	2003	2004	2005	2006	2007	2008	Total
Central Office											
Computer Equipment											
Computers	6	$2,000	$6,000				$6,000				$12,000
Laptop	2	$3,000	$3,000				$3,000				$6,000
Printer	4	$600	$1,200				$1,200				$2,400
Scanner	1	$500	$500				$0				$500
Computer projector	1	$2,000	$2,000				$0				$2,000
Sub total			**$12,700**				**$10,200**				**$22,900**
Office Equipment											
Photocopier	1	$4,000	$4,000				$0				$4,000
Fax machine	1	$500	$500				$0				$500
Telephone	2	$45	$90				$0				$90
Overhead projector	1	$400	$400				$0				$400
Slide projector	1	$500	$500				$0				$500
Televition	1	$500	$500				$0				$500
Office Furniture	1	$8,000	$8,000				$0				$8,000
Photographic and video equipment	1	$2,000	$2,000				$0				$2,000
Bibliography	2	$500	$1,000				$0				$1,000
Paper and expendables	2	$3,500	$3,500				$3,500				
Sub total			**$20,490**				**$3,500**				**$23,990**
Field Equipment:											
Lanterns	4	$25	$100				$0				$100
First aid kit, incl. Antivenin, IV solution, syringes	2	$300	$300				$300				$600
Back packs	4	$20	$40				$40				$80
Miscellaneous	1	$3,000	$3,000				$0				$3,000
Subtotal			**$3,440**				**$340**				**$3,780**
Vehicles	1	$35,000	$35,000				$0				$35,000
Sub total			**$35,000**				**$0**				**$35,000**
Regional Offices											
Computer Equipment											
Computers	12	$2,000	$12,000				$12,000				$24,000

Item	Quantity	Cost	2001	2002	2003	2004	2005	2006	2007	2008	Total
Laptop	6	$3,000	$9,000				$9,000				$18,000
Printer	9	$600	$3,600				$1,800				$5,400
Scanner	3	$500	$1,500				$0				$1,500
Computer projector	3	$2,000	$6,000				$0				$6,000
Cartographic equipment	3	5000	$15,000				$0				$15,000
Sub total			**$47,100**				**$22,800**				**$69,900**
Office Equipment											
Photocopier	3	$6,000	$18,000				$0				$18,000
Fax machine	3	$500	$1,500				$0				$1,500
Telephone	6	$25	$150				$0				$150
overhead projector	6	$400	$2,400				$0				$2,400
slide projector	6	$500	$3,000				$0				$3,000
Television	3	$500	$1,500				$0				$1,500
Office Furniture	3	$9,000	$27,000				$0				$27,000
Paper and expendables	6	$3,500	$10,500				$10,500				
Sub total			**$64,050**				**$10,500**				**$74,550**
Field Equipment											
GPS*	6	$325	$1,950				$0				$1,950
Radio	3	$1,000	$3,000				$0				$3,000
Photographic and video equipment	6	$2,000	$12,000				$0				$12,000
Lanterns	30	$25	$750				$0				$750
Compass	3	$10	$30				$0				$30
First aid kit, incl. Antivenin, syringes	6	$300	$1,800				$0				$1,800
Stuff bags	18	$10	$180				$0				$180
Machete, shovels & picks kit	9	$200	$1,800				$0				$1,800
Raingear, fishing boots	18	$30	$540				$0				$540
Miscellaneous	3	$3,000	$9,000				$0				$9,000
Subtotal			**$31,050**				**$0**				**$31,050**
Vehicles	3	$35,000	$105,000				$0				$105,000
Sub total			**$105,000**				**$0**				**$105,000**
TOTAL			**$318,830**				**$47,340**				**$366,170**

INFRASTRUCTURE SPECIFICATIONS

Ranger Posts

Multipurpose station with 4 sided concrete posts, plywood structural walls, GI roofing sheets, rough cemented floor, dimension 4m x4m.

Signage/Markers

The illustration should be designed for outdoor use. Markers with symbols should be provided with captions explaining the meaning of the symbol. The materials and finishing should be durable, vandal proof and non-combustible. Wood, rock or other available indigenous materials should be used. Administrative markers should be placed at boundary lines, in front of, or near facilities to be identified.

Park Entrance/Check Points

Check points/park entrance stations are small structures or house for accommodations of guard in protected areas and serve as observation posts for incoming and outgoing park visitors. These structures are to be placed along entrance and exit points and other strategic places to monitor visitor movement and activities. The structures should be constructed from local materials

Camp Sites

Camp sites should be in areas with good terrain and a slope of 7% and below. These should be located at a distance of 450 feet from any building. It should have good drainage to prevent run off and to permit disposal of waste water. Each camp site should have provision for toilets, trails, water system, picnic tables, and trash facilities for disposal of wastes. The camp site should have approximately an area of at least 300 sq meters to accommodate a number of campers at one time.

Radio Stations

Radio communication stations will be built in each Reserve. Radio antennas will be installed to permit the distribution of radio signals to the whole area and radios will be provided to the key communities, reserve offices and reserve vehicles.

Biological Stations

The biological stations will be constructed in open areas with appropriate local climatological conditions for the measurement tasks to be carried out. They will be located nearby or in connection with the house of a rural family that will be responsible for maintenance and rudimentary measurements. The installations will be 4 x 4m..

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