UNITED NATIONS ENVIRONMENT PROGRAMME

Programme des Nations Unies pour l'environnement | Programa de las Naciones Unidas para el Medio Ambiente
Программа Организации Объединенных Наций по окружающей среде | برنامج الأمم المتحدة للبيئة
联合国环境规划署

UNEP

PROJECT DOCUMENT

SECTION 1: PROJECT IDENTIFICATION

1.1 Project title: Integrating tradeoffs between supply of ecosystem services and land use options into poverty alleviation efforts and development planning in Mixteca

1.2 Project number: GFL/
PMS:

1.3 Project type: FSP

1.4 Trust Fund: GEF

1.5 Strategic objectives:

GEF strategic long-term objective: BD2 To mainstream biodiversity in production landscapes/seascapes and sectors

Strategic programme for GEF IV: BD-SP4-Policy Strengthening the policy and regulatory framework for mainstreaming biodiversity

1.6 UNEP priority: Ecosystem management

1.7 Geographical scope: National Mexico

1.8 Mode of execution: External

1.9 Project executing organization: National Commission of Protected Natural Areas (CONANP); World Wildlife Fund - Mexico (WWF)

1.10 Duration of project: 60 months
Commencing: November 2010
Completion: October 2015

1.11 Cost of project

		US$	***%***
Cost to the GEF Trust Fund		**5,900,000**	**37.6**
Co-financing			
	Cash		
	CONAFOR	8,800,000	56.1
	CONANP	693,065	4.4
	Sub-total	**9,493,065**	**60.5**
	In-kind		
	CONANP	195,465	1.2
	WWF	100,000	0.6
	Sub-total	**295,465**	**1.9**
Total		**15,688,530**	**100**

1.12 Project summary

Mixteca ecosystems are of global importance for their unique ecosystemic richness, significant biological integrity and important degree of endemism. The Mixtecan area of Oaxaca that is contemplated by this project is noted for its impressive mix of tropical and temperate montane pine-oak and cloud forests which host a wide variety of floristic heterogeneity in different areas throughout the region. In all, there are more than 2,703 species of flora and fauna with another estimated 15-20% of floral species still uncollected. The Audubon Society classifies Oaxaca as the richest state in Mexico for birds. There may be 123 species of mammals (10 endemics; nine endangered), 31 species of amphibians (two endemics; one endangered), 74 species of reptiles (seven endemics; seven endangered), 508 species of birds (four endemics; two endangered) and 14 fish species (nine endemic; four protected by Mexican laws).

However, biodiversity is being increasingly threatened by species and genetic loss due to habitat and ecosystem destruction and land degradation. Habitats in the Oaxacan Mixteca are being negatively affected mostly by an array of low-productivity farming activities. These include deforestation through slash and burn agricultural techniques and for energy needs; cattle and goat rearing with a pasture pressure that can reach 4-5 times the sustainable rate; and an annual migration of more than 100,000 animals, largely goats.

Land degradation has reached disastrous levels after years of deforestation, overgrazing and agricultural expansion. This, together with shallow soils that lack organic matter, the decrease in rainfall and intensification of the mid-season drought, possibly as a result of deforestation, climate change and pollution, acute water scarcity, which leaves little spare for irrigation or for animals, and frosts, means that subsistence food production of basic staple crops generally falls far short of household food requirements.

These difficulties, the lack of alternative employment and general marginalization of the predominantly indigenous local people have resulted in fully half the population leaving the area to seek opportunities in Mexico's larger cities or the USA. The Oaxacan Mixteca is one of Mexico's poorest regions.

National authorities are already addressing priority social issues such as poverty alleviation and food security. However, biodiversity conservation is not yet an integral part of their programmes due to inadequate science base to support knowledge of the role it plays in maintaining and sustaining ecosystem services, including food production. This project aims to bring long term ecosystem integrity, stability and resilience into the food production equation by promoting science – policy integration towards good practices in agriculture and natural resource management through the use of pilot testing of innovative methodologies and demonstration projects that will show how the livelihoods of local communities can be improved through better management of their biodiversity and natural resources. It will show how ecosystem management techniques can bring about improved water and soil conditions and improved agricultural productivity in the form of higher efficiencies and yields. Productive activity will in turn be concentrated in the most suitable areas thereby decreasing habitat disruption and encroachment on fragile and biologically significant ecosystems. In this way the project will achieve global environmental benefits in the form of biodiversity conservation.

The nature of this project regarding the application of science towards policy making will also serve to coordinate and integrate ecosystem services methodologies and tools in federal and state support programs based on the application of state of the art technology coupled with field testing in the project's pilots. It will broadly disseminate project findings and lessons learned to other projects, programs and conservation efforts and so improve the likelihood of individual project success.

Furthermore, it will enhance the government's capacity to upscale pilot interventions in priority areas to harness potential investments for impact at the wider landscape level, which is what is now needed in order to achieve globally significant biodiversity benefits.
The four zones that make up the project intervention area cover approximately one third of the Oaxacan Mixteca and comprise 567,308 hectares, 41 municipalities and 98 micro-watersheds. The project contemplates three areas in the Mixteca Alta – Sierra Sur-Juxtlahuaca, Tlaxiaco and Cerro Negro Yuncaño and one in the Mixteca Baja – Huajuapan de Leon-Tonala. These areas were chosen as representative of biodiversity hotspots that interconnect with already established protected areas and thereby could provide biological corridors connecting different ecosystems.

The rationale behind this GEF intervention is that if existing land use planning and support programs continue their present course, the focus will be on local benefits, such as poverty alleviation and food security, while biodiversity degradation will be allowed to continue. This GEF investment will take advantage of the significant baseline investments that have already been made in these areas to ensure that globally significant environmental benefits are achieved by bringing biodiversity conservation to the forefront of existing and new poverty alleviation and food security programmes in important but threatened Oaxacan Mixteca habitats.

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ACRONYMS AND ABBREVIATIONS

ADVC	Areas Voluntarily Destined for Conservation
AICA	Priority Bird Conservation Area
APFF	Area of Protection of Flora and Fauna
BD	Biological Diversity
CCRM	Rio Mixteco Watershed Committee
CDI	National Commission for the Development of Indigenous Peoples
CEA	State Water Commission
CEDICAM	Center for the Integral Development of Campesinos of the Mixteca Alta
CFE	Federal Electricity Commission
CI	Conservation International
CIIDIR	Inter-disciplinary Research Center for Regional Integrated Development of Oaxaca
CNA	National Water Commission
COINBIO	Indigenous and Community Biodiversity Project
CONABIO	National Biodiversity Commission
CONACULTA	National Council for Culture and the Arts
CONAFOR	National Forestry Commission
CONANP	National Commission of Protected Natural Areas
CONAZA	National Commission for Arid Zones
COPLADE	State Committee for Development Planning
CORRENAC	Regional Natural Resources Committee of the Huajuapan de Leon Central Zone
CRRN	Regional Natural Resources Committees of the State of Oaxaca
DGEF	UNEP's Division of the Global Environment Fund
DIF	Integrated Family Development
EMP	UNEP's Ecosystem Management Programme
ES	Ecosystem Services
FIRCO	Endowment for Shared Risks
FSP	Full Size Project
GAP	Good agricultural practices
GEF	Global Environment Facility
GIS	Geographic information system
GNRMP	Good natural resources management practices
Has.	Hectares
IA	GEF Implementing Agency
IEEO	State Institution of Ecology of Oaxaca
IIB	Institute of Biomedical Research, UNAM
INAH	National Institute of Anthropology and History
INEGI	National Institute of Statistics and Geography
INIFAP	National Institute of Forestry and Agropastoral Research
ITO	Technological Institute of Oaxaca
ITVO	Technological Institute of the Oaxaca Valley
MSP	Medium Size Project

NBSAP	National Biodiversity Strategy and Action Plan
NEA	Project National Executing Agency
NPC	National Project Coordinator
OTC	Community Land Use Plan
PA	Protected Area
PCU	Project Coordination Unit
PDP	Pilot Demonstration Project
PEC	Special Concurrent Program for Rural Sustainable Development
PES	CONANP's Payments for Environmental Services
PET	CONANP's Temporary Employment Program
PIBAI	Basic Infrastructure Program for Servicing Indigenous Peoples
POPMI	Productivity Organization Program for Indigenous Women
PPG	Project Preparation Grant
PROCAPI	Coordination Program for Support to Indigenous Production
PROCODES	CONANP's National Conservation Program for Sustainable Development
PRODERS	CONANP's Programme for Sustainable Rural Development, renamed CONANP PROCODES
PROFEPA	Attorney General of Environmental Protection
PSAC	Project Stakeholder Advisory Committee
PSC	Project Steering Committee
PDST	Pilot Demonstration Site Team
PFRI	Indigenous Regional Funds Program
PTAZI	Alternative Tourism Program in Indigenous Zones
RPC	Regional Priority Area for Conservation
RTP	Priority Terrestrial Region
SAGARPA	Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food
SECTUR	Secretariat of Tourism
SEDER	Secretariat of Rural Development
SEDESOL	Secretariat of Social Development
SEGOB	Secretariat of Government
SEMARNAT	Secretariat of the Environment and Natural Resources
SEP	Secretariat of Public Education
SRA	Secretariat of Agrarian Reform
STA	Scientific and technical analysis
TA	Technical assistance
UNAM	National Autonomous University of Mexico
UNDP	United Nations Development Programme
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme
UNEP-EMP	UNEP Ecosystem Management Programme
UTM	Technological University of the Mixteca
WB	World Bank

SECTION 2: BACKGROUND AND SITUATION ANALYSIS (BASELINE COURSE OF ACTION)

2.1. Background and context

1. The Mixteca is a semi-temperate region comprising 3.7 million hectares in south-eastern Mexico, covering parts of the states of Oaxaca, Puebla and Guerrero (please refer to map in Appendix 18). It has an extremely abrupt and rugged topography and, consequently, a wide range of climatic conditions. Altitudes vary between 1,000 and 3,000 meters above sea level. Above 1,900 meters, frosts occur from mid-October to March. The prevailing climate is semitropical (Acw), semitropical temperate (C(w)) and temperate semiarid (Bs1k). Annual rainfall is low, ranging from 300 to 750 mm, with a very erratic, uneven distribution between June and October. Approximately 75% of the territory is affected by water scarcity.

Biodiversity Significance:

2. The Mixteca is rich in biodiversity with more than 2,703 species of flora and fauna. The *Mixteca Alta* (highland areas) alone has approximately 1,600 species of flora, of which 163 (10.5%) are endemic, 97 are restricted to the Mixteca Alta and 15 are protected by Mexican law. The distribution and quantity of flora in the *Mixteca Baja* (lowland areas) is not yet known as an estimated 15-20% of floral species is still uncollected. More than 400 of the known floral species have ethnobotanical, mostly medicinal, uses.

3. The region is noted for its montane pine, pine-oak and cloud forests. Mexico's cloud forests are among the most northerly of their kind in the world and, as the habitat for both temperate and tropical species, contain a high degree of biodiversity in proportion to their surface area in comparison to other forest ecosystems. They exist largely as isolated ecological islands with a significant number of endemic species and are found in less than 1% of the surface area of Mexico. The montane pine and pine-oak forests are the second largest ecosystem in Mexico and are found at elevations ranging from 2,000 to 2,800 meters. Dominated by *Pinus* spp. and *Quercus* spp., they also include táscate forests characterized by weeping junipers (*Juniperus flaccida)*. They host a more impressive biodiversity than coniferous and oak forests in higher latitudes due to the mix of tropical and temperate species and to their floristic heterogeneity in different areas throughout the region. They are thought to have initially covered up to 21% of the country's territory. Secondary forests made up of palm groves of *Brahea dulcis*, tropical deciduous forest and arid tropical scrub are also found, with the latter predominated by thorny trees and shrubs, oak woods, cacti, agaves, grasses, and pastureland (INEGI 1996; 1997; SAGAR 1999). Agaves in particular show a high level of diversification in the Mixteca Baja, which also hosts several rare and endemic plants, including cicadas of the genus *Dion* in the Blasas depression, *Beaucamea* sp., *Milla magnifica, Fouqueria ochtereane, Mammillaria tonalensis, Brusera* sp., *Orquideas* sp., and others. However, forest cover has been significantly degraded. From 1980 to 2000, 108,363 hectares were deforested in the Oaxacan Mixteca.

4. The Audubon Society classifies Oaxaca as the richest state in Mexico for birds. The 117,342 hectare Priority Bird Conservation Area (AICA) in Tlaxiaco is a Category 1, Mex-1 habitat for, and provides the eastern most nesting site of, the endangered golden eagle (*Aquila chrysaetos*) and a Category 1, G-1 (i.e., globally threatened, endangered or vulnerable) habitat for the whitetailed hummingbird (*Eupherusa poliocerca)*, according to Birdlife's Red Book. This species can be found in only two specific locations, one in Guerrero and the other in Oaxaca. Other species of hummingbird and toucan are being investigated as preliminary DNA evidence suggests that they may have one or more evolutionary lineages with restricted ranges.

5. Representative species of other fauna include the puma *(Puma concolor*), white-tailed deer *(Odocoileus virginianus*), collared peccary *(Tayassu tajacu*), bobcat *(Lynx rufus*), raccoon *(Procyon*

lotor) and bats such as *Desmodus rotundus, Pteronotus parnellii*, and the migratory *Tadarida brasiliensis*. To date, there are 42 known species of mammals (some unpublished papers report 123 species and a potential 56 more) with 10 endemics and nine on IUCN´s Red List, nine species of amphibians (some reports suggest 31 species), with two endemics and one on the Red List, 38 species of reptiles (some reports suggest 74 species) with seven endemics and seven in the Red List, 92 species of birds (some reports suggest 508 species) with four endemics and two in the Red List and 14 fish species in the rivers of the Mixteca, of which nine are endemic and four protected by Mexican laws. One aim of this GEF project will be to clarify this information.

Soils, water, erosion and agriculture:

6. Mixteca soils generally lack organic matter and are deficient in nitrogen, zinc, sodium, phosphorus, iron, carbon, and potassium. They range in pH from 6.8 to 8.7, and are of medium texture, except in certain areas of clay soil. In the Lunatitlán-Nochixtlán-Zapoquila area, most fields have slopes of 9 to 20% and 10 to 25 cm of topsoil. These soils, known as white and shallow soils, are the poorest and most prone to erosion.

7. The most productive land is generally along the edges of gullies or rivers, on hillsides, hilltops or in depressions. Such soils are deep (40 cm or more) with medium texture and good fertility as a result of deposits from rainy-season watercourses. They are also more productive than the norm because farmers have access to enough water for at least one irrigation in the case of an extended dry spell. Soils in intermediate areas between the slopes and riverine lands are diverse and of fair quality, being composed of medium-size soil components washed down from higher land.

8. The area of rainfed land devoted to grain crops has declined sharply due to a perceived decrease in rainfall and the mid-season drought which has intensified, in local people's estimations, as a result of deforestation, climate change and pollution. The acute scarcity of water means there is little available for irrigation or for animals. There are only about seven liters of water available per family, per day (one-fourth of the consumption of the poorest of the poor in Mexico and an even smaller fraction of the international norm of 150 liters per family per day).

9. The shortage of moisture from insufficient rainfall is exacerbated by the poor capacity of the soil to capture and retain water and the move away from traditional *lama-bordo* (check dam) methods of water capture and retention in which rain water is made to flow by gravity along a series of contour ditches to irrigate level terraces in adjoining drainages. Records of this first type of water management techniques in the Mixteca date from 2,800 years ago and still today small population groups have this type of hydro-geological and hydro-agricultural knowledge that is of inestimable value. One aim of this project will be to revive these *lama-bordo* techniques as a sustainable way to help overcome water difficulties and simultaneously enhance the ecosystems' natural services (i.e., green the land, maintain and provide biodiversity habitat, etc).

10. Besides poor soils and the lack of water, the main constraints to agricultural production in the Mixteca are erosion (Cruz 1988), overgrazing (Cruz and Bravo 1988) and frosts (SAGAR 1999).

11. Soil erosion has reached disastrous levels after years of deforestation, overgrazing and agricultural expansion dating back to the Spanish conquest, as well as overuse of chemical inputs in the 1980s. Soils have lost an average of five meters of topsoil, or one-third of the fertile soil, since the conquest and hillside fields where slopes exceed 12% can suffer losses of more than 70 t/ha each year, far beyond the permissible levels of 6.7 t/ha for hillsides (Bravo 1990). Erosion worsened when farmers abandoned former practices of soil conservation, such as terraces and soil and stone wall barriers in favor of seasonal agriculture based on small-scale slash-and-burn farming and animal

plowing. According to a UN study, the Mixteca has one of the highest rates of soil erosion in both Mexico and the world. Eighty-three percent of soils show light to moderate degradation and 17% or 500,000 hectares exhibit severe erosion signs. The National Strategy of Climate Change has identified the target region as highly vulnerable to desertification processes. In fact, the Mixteca is often described as semi-desert and, according to the World Bank, is classified by many as an "ecological disaster area".

12. The problems of erosion are further compounded by the soils' shallowness, excessive tilling, monoculture (understood here as continual maize-bean intercropping) and the abandonment of conservation efforts. Overgrazing has compacted soils and deprived them of crop residues, and the reduced application or complete absence of manure is another cause of low organic matter content. Frosts can damage crops in the highland zone during October-February. The combined effect of these physical constraints has reduced the amount of land suitable for food production. Ninety percent of families in the project region depend on small-scale, 1-2 hectare plots for mainly rain-fed, seasonal, subsistence farming which is diversified according to individual economic conditions, availability of labor and local geo-climatic factors. Eighty-four percent of farm lands are rainfed and 16% are irrigated. It is not known how much agricultural production is dependent on river or underground water resources but it is very limited. Eighty-five percent of the land is farmed during the spring-summer cycle (PV); 7 %, during the autumn-winter cycle (OI); and 7 %, perennially.

13. The land is generally cleared through slash and burning then is tilled using animal drawn ploughs. The first harvest of crops is generally abundant thanks to the improved soil quality from the ash residue that is ploughed in. However, the poor and shallow soils soon lose their fertility and can no longer be used so new areas of forest have to be cleared. This pattern creates a massive mosaic of impoverished and degraded *minifundios,* or smallholdings.

14. This is a corn producing region with a long agricultural history but farming today is risky and production of basic staple crops generally falls far short of household food requirements and fails to satisfy local demand. What is grown and raised depends largely on the terrain and economic and manpower resources available to each individual family. Basic staples include mainly maize, wheat, barley, beans, chickpeas and amaranth, which are cultivated on 91.1% of farm lands. Peanuts are grown for their oil and wild food plants, particularly fruits, are also collected including guaje, red prickly pear, xoconoshtle, jiotilla, pitahaya and tinado (tempesquistle). An additional 5.9% of land is dedicated to coffee and limited palm oil production. Animal husbandry is mostly chicken, pigs, and milk and meat cattle which are raised on alfalfa and forage oats.

15. The difficulties of subsistence agriculture, lack of alternative employment, and general marginalization of the population in the region have resulted in high rates of rural flight. In recent decades thirty per cent of Mixtecans have left their native communities to seek opportunities in Mexico's larger cities or the USA. In fact, the region constitutes 50% of the overall state's emigration and has the highest rate of emigration from Mexico to the United States, according to the Oaxacan state government. Statistics from the Mixteca Center for Integral Peasant Development suggest that a quarter of all young men have emigrated in search of survival for themselves and their families.

Eco- and nature tourism in the Oaxacan Mixteca:

16. The rich history, culture and diverse environment of the Oaxacan Mixteca have great potential for tourism and could be a significant source of work and income for indigenous inhabitants of the region. In particular, Mixteca ecosystems could serve for eco- and nature tourism because of their unique richness, significant biological integrity and diversity, and important degree of endemism. Protected reserves located within the boundaries of the project target area could offer sustainable activities such

as specialized bird and animal watching, cloud forest trails, nature hikes, etc. as well as scientific and technical visits that could bring substantial economic benefits to the local populace in this area.

17. Other sites with potential for tourism development include the Yosocuta Reservoir which supplies water to Huajuapan de Leon and other towns in the district. There are already a limited number of visitors to this site but mostly connected with drinking water issues. Wider tourism activities that could exploit the area's scenic potential and simultaneously highlight water conservation efforts have not yet been developed.

18. Similarly the 10-year old soil conservation and reforestation and nursery projects in Santiago Tilantongo could be linked into local tourism excursions that would demonstrate the benefit of such conservation efforts over time and help to raise environmental consciousness. Likewise, traditional medicine centers could play a part in the fledgling nature tourism network that has only recently been established in this area. Further nature and agro-tourism activities related to traditional indigenous soil and water conservation methods and productive agriculture could also be developed within the project's intervention area contemplated under this GEF project.

19. To date there has been little or no effort to commercialize such activities and there is only one eco-tourism project, which is linked to the conservation of ecosystems in and around San Augustin Cuevas and the Tlaxiaco sanctuary. This is despite suggestions outlined in the region's Sustainable Development Plan, which recognizes that tourism represents historically and effectively one of the best alternatives to promote economic and social development, improve individual incomes, generate employment, raise earnings and boost the local economy. Elsewhere in Mexico and throughout the world the impacts of properly run nature tourism activities on ecosystem services are generally perceived as positive. Through this GEF project, ecotourism could become an effective mechanism to raise consciousness of the value of biodiversity, promote general environmental awareness and through pilot projects will be able to demonstrate how treating the ecosystem as a whole can help local people achieve sustainable development.

Specifics of project area:

20. The Oaxacan Mixteca is one of Mexico's poorest regions and comprises 1,565,902 hectares, 7 districts, 155 municipalities, and 2,089 villages. Of its nearly 700,000 inhabitants, 68% live in rural areas. Inhabitants are mostly indigenous peoples, principally Mixtecas. However, at least six other different ethnic groups are present: the Nahuas, Popolocs, Ixcatecs, Mazatecs, Cuicatecs and Chinantecs. The languages and cultures of these groups are slowly disappearing as the poor flee the countryside and basic education erases native culture and tongues.

21. A small portion (25%) of the Tehucán Cuicatlán Biosphere Reserve is within the northeast part of Mixteca. This Reserve is located in the states of Puebla and Oaxaca, occupies 490,187 hectares and contains almost 3,000 species of vascular plants, of which one-third are endemic. Including this one, five Priority Conservation Areas which also include protected areas surround and/or show significant overlap with the project intervention area. They are listed in Table 1. (Please also refer to map in Appendix 18).

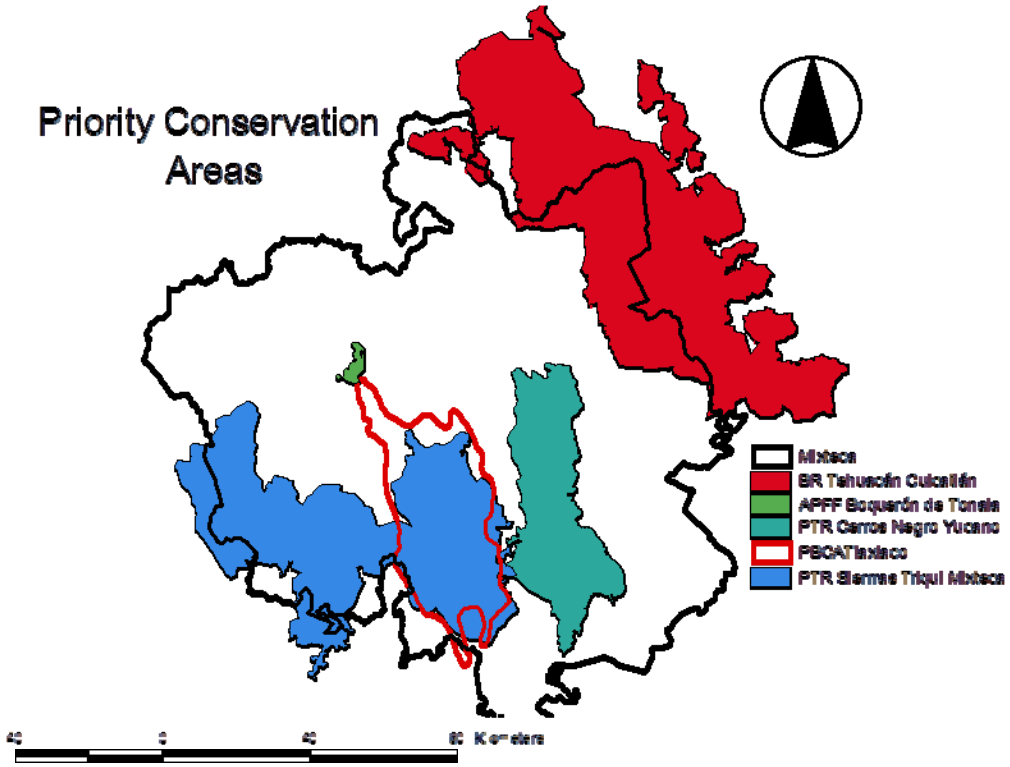


Table 1: Priority conservation areas

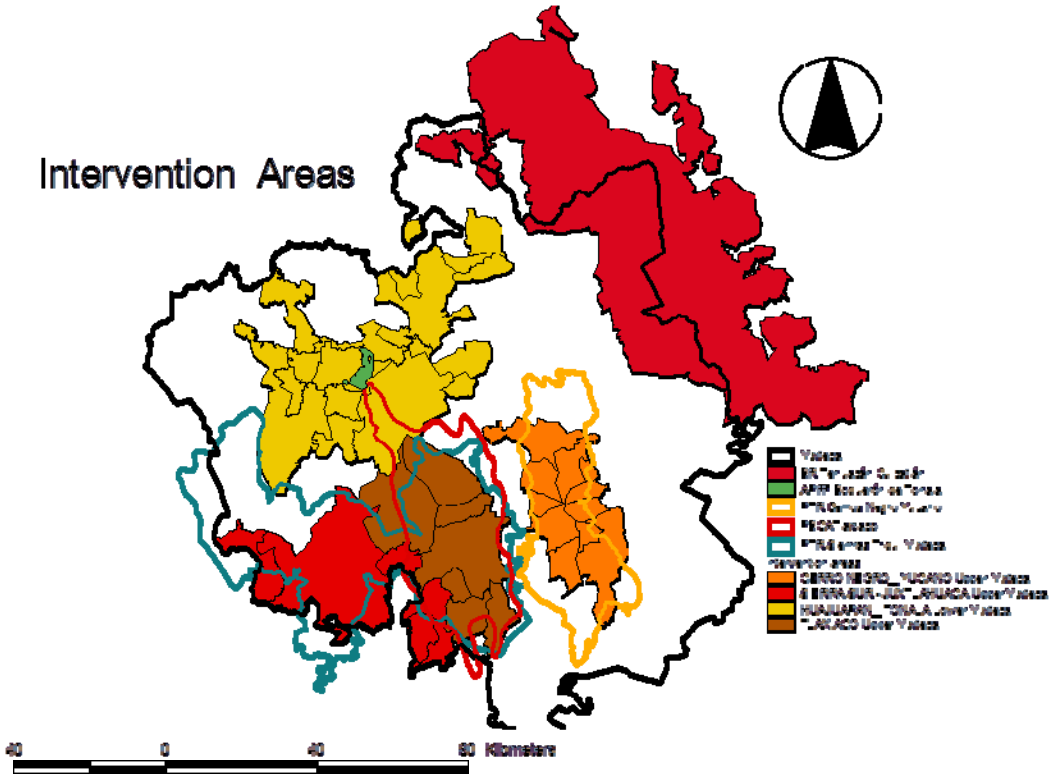
	Name of Protected Area	National Category of Protected Areas	Surface area in hectares	% in Mixteca region
1.	Boquerón de Tonalá	Area of Protection of Flora and Fauna	3,912	100
2.	Valley of Tehuacan-Cuicatlan	Biosphere Reserve	490,187	25
3.	Tlaxiaco	Priority Bird Conservation Area	149,907	100
4.	Sierras Triqui-Mixteca	Priority Terrestrial Region	305,100	100
5.	Cerros Negro-Yucaño	Priority Terrestrial Region	127,400	100
	Total		1,076,506	

Note: Only the first two are official protected areas managed by CONANP. The others are designated by CONABIO for their importance to biodiversity conservation. The purpose of Priority Bird Conservation Areas is to establish a network for the conservation of avian species that serve as tools to help guide decision-makers in prioritizing resource allocations supporting conservation in these areas. The Priority Terrestrial Regions are terrestrial units that are biodiversity hot spots harboring unique ecosystemic richness with high numbers of endemic species, as well as significant biological integrity and potentially high likelihood of successful conservation efforts.

22. The four zones that comprise the project's intervention area cover approximately one third of the Oaxacan Mixteca and comprise an irregular, mountainous terrain covering 567,308 hectares, 41 municipalities and 98 micro-watersheds. These areas were chosen as representative of biodiversity hotspots that interconnect with already established protected areas and thereby could provide biological corridors connecting different ecosystems. The four zones with their respective surface areas are listed in Table 2, with more detailed descriptions of each provided in the text that follows.

Table 2: Project Intervention Area

	Name of intervention area	Sub-region	Surface area in hectares
1.	Huajuapan de Leon-Tonala	Lower Mixteca	233,771
2.	Sierra Sur-Juxtlahuaca	Upper Mixteca	125,677
3.	Tlaxiaco	Upper Mixteca	117,342
4.	Cerros Negro Yucaño	Upper Mixteca	90,518
	Total		567,308



23. *Huajuapan de Leon-Tonala:* This project intervention area is predominantly located in the lower portion of the Mixteca adjacent to the state of Puebla, covers a surface area of 233,771 hectares and includes 17 municipalities. The zone, less than 1,800 meters above sea level, is predominated by tropical, subhumid and semiarid environments that host mainly tropical deciduous forest and arid tropical scrub. Deforestation in this area is fairly limited - in the order of 227 hectares per year.

24. Biodiversity species of significance include the agaves, which have a high level of diversification in this part of the Mixteca. Fauna including species such as the puma, white tailed deer and several rare and endemic plants, including cicadas of the genus *Dion* in the Blasas depression, *Beaucamea* sp., *Milla magnifica*, *Fouqueria ochtereane*, *Mammillaria tonalensis*, *Brusera* sp., *Orquideas* sp., and others have been preserved by initiatives such as the 3,912 hectare Boquerón de Tonalá Area of Protection of Flora and Fauna. This was designated as a Wildlife Management Zone (Unidad de Manejo de Vida Silvestre) by the town of Santa Domingo Tonalá in 2008.

25. Other towns with similar well-preserved biological richness include San Marcos Arteaga, San Jorge Nuchita, Tezoatlán de Segura y Luna, Yodohino and Dinicuití. This is one of the best preserved corridors of low woodlands, oaks and *chaparral* (dense scrub vegetation consisting of stunted trees or bushes), but is threatened by deforestation processes that need to be controlled. It connects to the south-west with another corridor made up of low forest, weeping junipers and pine-oaks and the town of Silacayoapan where CDI and CONAFOR have an important soil conservation and reforestation project.

26. The main source of water for the city of Huajuapan de León and the district capital is the Yosocuta watershed, which supplies water to the Yosocuta Reservoir, and in the past has been the site of important water catchment restoration projects. Synergy between these diverse projects would be greatly enhanced by bringing them under a common umbrella of efforts to conserve soil and water and to protect areas with unspoiled vegetative cover. This GEF project will identify which of the 13 towns in the watershed are most important in terms of the strategies that are needed to conserve vegetation in order to guarantee sufficient water flow to keep the watershed ecosystem functioning effectively. It will also identify which conservation projects could best serve as examples to be replicated elsewhere and will help to strengthen the institutional capacities of the various organizations involved.

27. *Sierra Sur-Juxtlahuaca:* This Project intervention area of 125,677 hectares includes three municipalities and is located in the southern portion of the Oaxacan Mixteca. It is characterized by large amounts of rainfall and high humidity, which contrast with the region's usual dry characteristics. The area's pine, pine-oak forest and a significant portion of cloud forest are highly threatened by land use change and their replacement by coffee plantations. The area has a close relationship with the physiographic Sierra Sur province, specifically with the Putla Villa Guerrero zone, which is known for its shade coffee systems that extend into this portion of the Mixteca.

28. *Tlaxiaco:* Located to the south of the Oaxacan Mixteca, this area covers 117,342 hectares and is characterized by the highest altitudes in the region. Its representative ecosystems of pine and pine-oak forests are the most deforested of all the project areas with a loss of 24,708 hectares in 21 years, which translates into 1,224 hectares of forest cover per year.

29. Of the 117,342 hectares, 91,987 hectares pertain to the Tlaxiaco Priority Bird Conservation Area (AICA). It is a Category 1, Mex-1 habitat for, and provides the southernmost nesting site of, the golden eagle (*Aquila chrysaetos*), which is an emblematic symbol on Mexico's shield and flag and is in danger of extinction (NOM 59). This region also provides a Category 1, G-1 (i.e., globally threatened, endangered or vulnerable) habitat for the white-tailed hummingbird (*Eupherusa poliocerca)*, according to Birdlife's Red Book. This species can be found only in two specific locations, one in Guerrero and the other in Oaxaca. Another two species of hummingbird, (*Phaethornis superciliosus* and *Amazilia viridifrons*) can also be found here although they have a restricted range. However, preliminary DNA evidence suggests that there may be more than one species that may have to be divided into two or more evolutionary lineages. If this proves to be the case, then one of the species will have a range restricted specifically to the Tlaxiaco area. The small toucan (*Aulachorhynchus prasinus*) can also be found here. This toucan was thought to be a single species but DNA evidence suggests that there may be more than four lineages, of which one has a range restricted only to the Tlaxiaco area.

30. Bordering on the Tlaxiaco Priority Bird Conservation Area is this project's only patch of cloud forest that connects to the Sierra Triqui-Mixteca Priority Terrestrial Region (RTP). These woodlands contain the only known Pacific coast population of sweetgum (*Liquidambar styraciflua*).

31. Within the Tlaxiaco Priority Bird Conservation Area, the National Institute of Anthropology and

History is studying archaeological sites connected to areas covered with well-conserved vegetation. Research to date shows the remains of more than 50 important populated centres connected by valleys between the mountains with evidence of a sophisticated system of *lama bordo* terraces and level areas along which rain water was made to flow by gravity for watering crops.

32. Despite being difficult to access, the Tlaxiaco cloud forests host an eco-tourism project linked to the conservation of ecosystems in and around San Augustin Cuevas and also is the site of projects by CDI, SEMARNAT and CONANP. As indicated earlier, CONAFOR and civil society organizations have a strong presence in this area.

33. *Cerros Negro Yucaño:*. This covers an area of 90,518 hectares and includes 11 municipalities of Tlaxiaco, Nochixtlán and Teposcolula districts. The high altitudes in and around Tlaxiaco and to the south of Nochixtlan contain one of the largest and most diverse remaining temperate populations of oaks (*encinos*), acording to Mexico's National Biodiversity Commision. The area also contains pine-oak forests. It is an important water catchment area of the Mixteca and its forests play a critical role in the provision of this ecosystem service.

34. The Cerros Negro Yucaño RTP will benefit from activities undertaken through this fourth project intervention area since more than half - 69,745 hectares - of its surface area is included. Thirty-nine percent of land here is used for agriculture, animal husbandry and forest activities; 37% is dominated by oak forests found over 800 meters above sea level; 13% is tropical vegetation dominated by palm trees; and 11% has other uses. In general, the higher elevations of this area are well conserved while the lower elevations are very deteriorated and soil erosion is a major problem. Much of the original vegetation of the lower lands has been lost. Specific information on the area's ecosystems and biodiversity is missing, including the status of specific endangered species. Major drivers of ecosystem loss and land degradation are animal husbandry, the extraction of fuelwood and charcoal production.

2.2. Global significance

35. Mixteca ecosystems are of global importance because they represent biodiversity hot spots that harbor unique ecosystemic richness, significant biological integrity and maintain an important degree of endemism. The Mixteca Alta has approximately 1,600 species of flora, 163 (10.5%) of them endemic, 97 restricted in habitat, and 15 protected by Mexican law. The pine-oak forests of Mexico contain the largest amount of the world's species of pine trees, with more than 50% of the earth's total. They are also the Western Hemisphere's principal ecosystem containing oak species, accounting for 33% of the total number of all species in the world (Styles 1993, Nixon 1993, Challenger 1998). There are four endemism zones in the Mixteca Alta: Hondo river zone (28 taxa), Tamazulapan, Teposcolula, Chilapa and Coixtlahuaca town zones (9 taxa), Mixtepec river zone (6 taxa) and the Sedas Mountains (7 taxa).

36. The Oaxacan Mixteca is considered critical to the long term conservation of the emblematic golden eagle and for the preservation of other birds and fauna. The four project zones are still unprotected sectors that could function as biological corridors to reserves located at the boundaries of the project target area, including to the northeast the Valley of Tehuacan-Cuicatlan Biosphere Reserve and the Sierras Triqui-Mixteca RTP in the southwest part of Oaxaca and Cerros Negro Yuncaño RTP. These corridors include significantly important riparian systems.

37. This GEF project will help to interconnect the Oaxacan Mixteca's biodiversity hotspots and thereby extend the total protected area. It will also serve to coordinate and integrate established conservation efforts and so improve the likelihood of individual project success. Synergy of effort and

sharing of information will also enable productive activities to be conducted in a sustainable manner so as to curb the damage that is currently being inflicted on these globally significant habitats.

2.3. Threats, root causes and barrier analysis

38. *Threats*: The main threats to biodiversity are species and genetic loss due to habitat and ecosystem destruction and soil degradation. Many fauna, including, for example, the golden eagle, whitetailed hummingbird, possibly two species of toucan and at least 10 mammals, seven reptiles, two amphibians, and nine fish are endangered or have limited ranges. In addition, around one tenth of Oaxaca's flora is endemic, 97 species are restricted to the Upper Mixteca and around 15-20% has yet to be classified. These habitats, particularly the Oaxaca's cloud forest ecosystems which exist largely as isolated ecological islands and cover just 1% of the surface area of Mexico, are threatened by encroaching deforestation and are most at risk. Deforestation is increasingly affecting forests located in marginal and fragile areas (e.g., slopes) which can end as secondary bushy areas in which recovery is slow and sometimes not possible. Lack of vegetative cover leads to land degradation, soil erosion and loss of water retention capacity, which in turn threatens and diminishes ecosystem integrity and resilience.

39. *Root causes*: The driving forces behind deforestation, land degradation and biodiversity loss are unsustainable agricultural development, poverty and lack of awareness of the value of the biological resources that are being destroyed and their interdependence in sustaining the ecosystem. The root causes of these driving forces are both physical and socio-economic in nature.

40. Physical factors include the inherent fragility of the land once the protective vegetative cover is disturbed to expose the underlying extremely abrupt and rugged topography. Altitudes varying between 1,000 and 3,000 meters above sea level. Centuries of deforestation, overgrazing and agricultural expansion dating back to the Spanish conquest, as well as overuse of chemical inputs in the 1980s, have resulted in the loss of an average of five meters of topsoil, or one-third of the fertile soil, since the conquest. Hillside fields where slopes exceed 12% can suffer ongoing losses of more than 70 t/ha each year. In addition, Mixteca soils generally lack organic matter and are deficient in nitrogen, zinc, sodium, phosphorus, iron, carbon, and potassium. Annual rainfall is low, ranging from 300 to 750 mm, with a very erratic, uneven distribution between June and October. The shortage of moisture from insufficient rainfall is exacerbated by the poor capacity of the soil to capture and retain water. Approximately 75% of the territory is affected by water scarcity. Frosts occur above 1,900 meters from mid-October to March.

41. Socio-economic causes include three globally significant issues. First, this region is dominated by indigenous, mostly Mixteca and Triqui people[1] who, like other indigenous groups throughout the world, are losing touch with their traditional systems of collective property rights and agricultural techniques that for centuries have inherently conserved natural resources.

42. Second, the disintegration of traditional ways of life in recent decades has resulted in the prevailing poverty that now dominates much of this and other indigenous regions of the world. Seven of the municipalities that fall under this project are among the poorest in the country and have the lowest indices for human development.

43. Third, the disintegration of traditional lifestyles has led to widespread urban flight from rural areas to cities, mostly for men. It is calculated that around 90,000 Mixtecas work between Sinaloa and Baja California in the high season - in other words, 80% of seasonal workers in this area come from the Oaxacan Mixteca. Another 50% of agricultural workers during the California high season also

[1] Comisión Nacional para el Desarrollo de los Pueblos Indígenas de México (CDI). *Estadísticas*. "http://www.cdi.gob.mx"

come from Oaxaca – that is 5% of the total workforce for the State.[2] This extensive rural-urban migration has left women, children and old people struggling to cope alone with the demands of subsistence farming on fragile and impoverished soils.

44. The lack of man-power has resulted in a move away from traditional land management techniques towards an array of low-productivity farming activities. In the past, slash and burn agriculture was combined with traditional rain/water harvesting, soil conservation, and crop rotation technologies which, together with more limited animal numbers, meant that land could recover. Now, indigenous people have abandoned environmentally-beneficial water management systems such as th*e lama-bordo* method in which surface water run-off was for centuries utilized to irrigate man-made agricultural terraces within natural drainages areas. Without the benefits o*f lama-bordo* irrigation to 'green' the land, soil is more exposed and eroded, which in turn reduces the production of basic food staples.

45. Lack of manpower is also contributing to decreasing soil fertility which is dependent on labour-intensive crop rotation systems and repeated applications of animal manure to maintain its nutrient base. Only farmers growing to sell to local markets can afford to use fertilizers and pesticides. The practice of planting monocultures of maize and beans is becoming more widespread and upsets the balance of nutrients needed for sustainable agricultural production. Short fallow periods and overuse of soils leave no room for land to recover.

46. Land degradation is worsened by the increasing practice of animal ploughing using the yoke and Egyptian hoe by local labourers who are willing to be paid by the day, particularly during sowing and harvesting periods. Over-tilling, particularly on steep slopes, is a significant cause of soil erosion.

47. Land erosion and decreasing soil fertility are in turn driving the need for further slash and burn agriculture to clear more fertile areas for better crop returns, thus threatening further crucial global biodiversity habitats.

48. In addition, increasing animal husbandry means that overgrazing is compounding the already delicate situation and threatening further ecosystem integrity. Animal numbers now exceed by 4-5 times the sustainable carrying capacity of the land. The annual migration of more than 100,000 animals, largely goats, that crosses the region in the month of November on its way to regional markets is particularly damaging to fragile land resources.

49. Decreasing rainfall and mid-season drought, which may be caused by climate change, are other physical factors that are also impacting negatively on ecosystem sustainability.

50. Other factors affecting the ability of ecosystems to recover from abuse include access to water supply, and the availability of farming equipment, capital, and credit facilities.

51. *Barrier analysis***:** Barriers impeding effective biodiversity conservation efforts in the Oaxacan Mixteca are inextricably linked to institutional deficiencies. These include:

i) *The limited level of ongoing assessments and monitoring of natural resources, which currently only includes a few basic ecosystem services such as the provisioning of water, wood for energy purposes and maintaining soil stability for farming purposes, and the lack of accurate knowledge on the nature, importance, value and extent of services provided by ecosystems in the region for a wide range of sectors and stakeholders, including indigenous people, farmers, women, industry*

[2] Leal, Alejandra. *La identidad mixteca en la migración al norte:el caso del Frente Indígena Oaxaqueño Binacional.*

and urban residents. The GEF intervention will be essential in assessing the distribution and value of ecosystem services in the project area, as well as in establishing on-going programmes for monitoring and assessing ecosystem services. This intervention will serve as a foundation for the integration of ecosystem approaches by decision-makers in on-going and future development support programs at the state and local levels. This barrier is addressed under expected outcome 1.2 on the assessment, valuation and monitoring of ecosystem services and biodiversity in the Oaxacan Mixteca in component 1 of this GEF project (please see section 3.3 for additional details).

ii) *The lack of technical background and lack of specialized knowledge of the management techniques needed to bring long term ecosystem stability into the food production equation by focusing on systematic biodiversity conservation and use alongside direct natural resource based livelihood support*. Lack of or inadequate use of ecosystem services methodologies and tools has meant that major federal, state and local development support programs in the Oaxacan Mixteca do not take into account the importance of the sustainable use and conservation of biodiversity as a building block for achieving sustainable development, particularly in rural areas with high levels of poverty and marginalization. In response, in this project GEF resources will be targeted at capacity building in ES methodologies and tools among key public and private sector stakeholders at the state and local levels involved in the implementation of these development support programs. This barrier is addressed under expected outcome 1.1 on increased access by stakeholders and decision makers at the state and local levels to ecosystem services methodologies and tools applicable to biodiversity conservation in component 1 of this GEF project (please see section 3.3 for additional details).

iii) *The lack of land use plans in the State of Oaxaca that take into account ecosystem services*. Current land use plans together account for approximately 1.2 million hectares but none adequately take into account the importance and value of ecosystem services. The GEF intervention will aim at rectifying this situation. Revised land use plans that fully take into account ecosystem services and biodiversity conservation will serve as a basis for the establishment of a network of voluntary reserves, including biological corridors connecting protected areas with well-preserved ecosystems, in biodiversity rich areas of the Oaxacan Mixteca. Environmentally sound land use plans will also serve as a basis for the development of agroecological production zones based on good practices in agriculture (GAP) and natural resource management (GNRMP) that support the sustainable use and conservation of biodiversity, especially those that can serve as protective buffers around protected areas and voluntary reserves. This barrier is addressed in components 2 and 3 of this GEF project, with component 2 focusing on the integration of the ecosystem approach into existing and new land use plans for the Oaxacan Mixteca in general and component 3 on the utilization of specific land use plans for the project's intervention area in the establishment of voluntary reserves, including biological corridors, and for the development of agroecological production zones based on GAP and GNRMP. Please see expected outcome 2.1 on the integration of biodiversity and ES considerations into state and federal support programs and land use planning under component 2 and expected outcome 3.3 on improved land use planning and management practices leading to increased habitat connectivity for globally significant biodiversity under component 3 in section 3.3 of this project document for additional details.

iv) *The lack of inter-institutional coordination on environmental, biodiversity and poverty relieving issues that is needed to oversee the many state and federal support programs that bring abundant resources to the area, especially in response to the Mixteca's level of poverty and marginalization*. This lack of coordination has seriously hampered biodiversity conservation efforts in the Oaxacan Mixteca. The GEF intervention will contribute to enhancing inter-

institutional cooperation and creating synergies among the various development assistance programs in the region in support of biodiversity conservation. Further analysis of this issue is provided in section 2.4 on institutional, sectoral and policy context. This barrier is addressed in components 2 and 3 of this GEF project, with component 2 addressing overall inter-institutional coordination in the Oaxacan Mixteca and expected outcome 3.1 on the application of the ecosystem approach for planning and implementing productive activities and biodiversity conservation by local stakeholders under component 3 focusing on inter-institutional coordination specific to the project intervention area (please see section 3.3 for additional details).

v) *The lack of focused education and capacity building efforts to demonstrate to indigenous groups that ecosystem conservation and biodiversity preservation can lead to sustainable food production activities and can generate increased income leading to an improvement in living standards*. Although a great deal of attention is being given to rural development and agriculture programs in the region by federal, state and local authorities, particularly as regards poverty alleviation, the integration of biodiversity and ecosystem considerations has been lacking. The GEF intervention will be critically important in introducing and promoting the use and application of good practices in agriculture and natural resource management, through the pilot project demonstration sites, that enhance biodiversity conservation and the provision of ecosystem services in the project area. Closely linked will be the development and implementation of an alternative tourism strategy based on biological diversity, natural attractions and agro-ecosystems. This barrier is addressed under expected outcome 3.2 on improving ecosystem resilience and livelihoods in component 3 of this GEF project (please see section 3.3 for additional details).

vi) *The limited capacity within CONANP to upscale pilot interventions in priority areas to harness potential investments for impact at the wider landscape level which is what is now needed in order to achieve globally significant biodiversity benefits*. The GEF intervention and support from project partners will provide CONANP with the expertise, capacity and experience to undertake pilot interventions throughout the Mixteca and Mexico for applying ES methodologies and tools and environmentally sound land use plans for supporting the implementation of the National Program for Natural Protected Areas, as well as Mexico's National Biodiversity Strategy and Action Plan (NBSAP). This barrier is addressed in all components of this GEF project. The first component will strengthen CONANP**'**s knowledge base on the application of ES methodologies and tools; the second, its catalytic role in promoting greater coordination and collaboration among multi-sectoral development support programs in benefit of biodiversity conservation; the third, its capacity to disseminate information and train local stakeholders in the application of ES methodologies and tools, GAP and GNRMP; and the fourth, the dissemination and replication of project findings and lessons learned to other parts of the Mixteca and Mexico (please see section 3.3 for additional details).

vii) *The paucity of farmers' cooperatives in the project area, which is affecting the marketability and profitability of agricultural crops produced*. Although coffee and palm oil producers are organized into cooperatives, the added value of their cooperative efforts has been exploited by intermediaries in Tehuacan and Huajuapan. The GEF intervention will make possible the provision of technical assistance to producers for the marketing of goods and services that are the product of good practices in agriculture and natural resource management, including *lama-bordo* techniques, exploring opportunities for participating in related certification programs. This barrier is addressed under expected outcome 3.1 on the application of the ecosystem approach for planning and implementing productive activities and biodiversity conservation by local stakeholders in component 3 of this GEF project (please see section 3.3 for additional details).

52. Given the importance of overcoming these institutional barriers impacting on biodiversity conservation, the GEF intervention will also support the development and implementation of a replication strategy for the dissemination of project findings and lessons learned on the application of the ecosystem approach in development planning to other areas of the Mixteca and Mexico. Please see component 4 in section 3.3 of this GEF project for additional details.

2.4. Institutional, sectoral and policy context

53. As a region characterized by above average poverty levels, the Oaxacan Mixteca receives an array of social support programs intended to improve household income and living standards. There are more than 14 state and federal secretariats providing different types of assistance to the population, including farming subsidies, social sector programs and temporary employment schemes. This GEF project will facilitate synergy between the numerous government organizations already working in the Oaxacan Mixteca to enable them to establish agreements to avoid duplication of activities and to streamline their resource allocations towards communities, traditional collectives (*ejidos*) and small scale private land owners that have a positive attitude towards conservation and management of their natural resources, ecosystems and biodiversity.

54. This synergy will be achieved by establishing an Inter-Institutional Working Group (IWG) to provide continuity and strengthen the government's Regional Planning Support Group in its initiatives in the Mixteca Priority Region. The IWG will also follow up on this GEF project's strategy and implementation with the participation of local stakeholders. Government institutions already actively involved in implementing programs and projects in the Oaxacan Mixteca include the National Water Commission; State Water Commission (Committees for the Mixteca and Balsas River Basins); National Forestry Commission; Secretariat of Rural Development; Secretariat of Social Development; Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food; National Commission for Arid Zones; State Institution of Ecology of Oaxaca; National Commission for the Development of Indigenous People; the Authorized Forestry Management Units of the Regional Natural Resources Committee of the State of Oaxaca in Tlaxiaco and Huajuapan; Attorney General of Environmental Protection; Secretariat of Agrarian Reform; and the Integrated Family Development organization.

55. The National Water Commission (CNA) in involved in the provision of water to agricultural areas and in promoting the integrated management of water basins and aquifers. They also play an important role in promoting the proper and efficient use of water resources and consolidating the active participation of society as a whole towards this end. In addition, they carry out research that evaluates the effects of climate change on water cycles. This GEF project could provide synergy with their emblematic hydroelectric infrastructure projects, particularly in the Mixteca river watershed, and could open the door to promotion of rainwater capture initiatives. In addition, CNA technical teams could facilitate hydrological studies of the priority watersheds in the project region.

56. The State Water Commission (CEA) has significant clean water programs and plays an important role in promoting a culture of water consciousness, both of which form an integral part of this GEF project. The aim will be to establish Water Culture Centres in the most significant zones in the region and to negotiate to modify the decree that cedes concessions of surface waters in the Oaxacan Mixteca to the Federal Electricity Commission to allow for rainwater capture projects.

57. The National Forestry Commission (CONAFOR)'s priorities are to establish synergy between all programmes participating in the project area and to push forward projects related to reforestation, soil restoration and forest health, chains of production, nature tourism, and forest competition, to equip and train fire brigades to deal with forest fires, and to support the implementation of wood-energy programmes. Under their Special Programs, CONAFOR works in one to one partnership with projects involved in environmental services.

58. The Secretariat of Rural Development (SEDER) already has projects related to sustainable management for both agricultural producers and processors, as well as those involved in commercialization, both of which could be strengthened, and is an important promoter of energy efficient wood stoves. This GEF project could enable SEDER to promote its native plant nurseries in communities participating in reforestation programmes, and to support the equipping and training of rural fire brigades. In 2007 SEDER signed a general agreement with the Secretariat of the Environment and Natural Resources, although the specific remit of this agreement could perhaps be improved by being made more focused and precise.

59. The Secretariat of Social Development (SEDESOL) runs the "3 for 1 Program" which deals with environmental cleanup and conservation of natural resources, community production projects and community social services projects. They also host programs specifically aimed at agricultural day-workers, and have designated priority development zones, particularly for community production infrastructure, community communications centres, sanitary landfills and energy efficient wood burning stoves. They also focus on community organization and popular participation, promotion of social well-being, and on promoting and coordination between the different government offices, further education and research programs, and studies and research aimed at municipal and regional development.

60. The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) runs programs dealing with protected agriculture, promotion of coffee production, PROMAF (complementary to the CONAFOR program), productive systems, and strategic projects to improve irrigation techniques on small scale farms and to improve food security (PESA). Through this GEF project, SAGARPA could include the Mixteca in its small-scale hydroelectric projects; provide technical assistance and training to contribute to local capacity building in cooperatives, communities and rural organizations in the project area, and contribute towards ensuring that land rights are granted according to best practices within the individual communities and cooperatives.

61. The National Commission for Arid Zones (CONAZA) will be a key player in the Inter-Institutional Working Group since its mandate includes two of the most important issues under this GEF Project - the conservation and restoration of soils and the sustainable management of freshwater resources. Under this project it will be possible to further establish synergy between CONAZA's sustainable use of resources for primary production program and its integrated sustainable agricultural and reconversion to productive lands program.

62. The mandate of the State Institution of Ecology of Oaxaca (IEEO) to negotiate, oversee, protect and establish norms for the use and sustainable management of the natural patrimony of the Oaxaca closely parallel the aims of this GEF Project. IEEO's experience in implementing programs on environmental education, management of solid wastes and natural resource protection will be of benefit in implementing this GEF project, as will be their experience working from 2001-2007 with CONAFOR in the countrywide GEF COINBIO program to preserve indigenous areas with significant biodiversity and to promote community initiatives for the conservation and sustainable use of biological resources. This GEF project will enable IEEO to refocus their initiatives towards the ecosystem approach and will enable them to extend further into the Oaxacan Mixteca their successful efforts to raise the profile of biodiversity as a resource of significant value, as well as to further promote the implementation of traditional forms of sustainable land administration and production that inherently enhance natural resources.

63. The National Commission for the Development of Indigenous People (CDI) has a coordination program to support indigenous production (PROCAPI) through the use of traditional pre-hispanic terrace farming methods for the cultivation of traditional native plants such as amaranth, creole maize,

agaves and cacti, medicinal and cooking herbs, and others. In addition, they promote alternative tourism in indigenous zones (PTAZI) based on the conservation of natural resources and are working towards setting up an ecotourism network. Their productive organization program for indigenous women (POPMI) aims to develop and strengthen the skills of women in various productive activities, and they have initiated a regional fund for indigenous development (PFRI) to promote community production activities that are related to biodiversity conservation. Under this GEF project, CDI will be able to incorporate other indigenous groups within the Oaxacan Mixteca into their remit and through the use of already established indigenous radio networks will be able to further promote and publicize the aims and experiences of protecting biodiversity within the region using the ecosystem approach.

64. The Attorney General of Environmental Protection (PROFEPA) is as yet a minor player but could have a significant role in upholding areas defined by the project as priority locales for conservation. This GEF project seeks to establish a program to oversee and inspect project areas.

65. The Secretariat of Agrarian Reform (SRA) is involved in speeding up the steps involved in allocating land rights to community groups in priority areas through their support fund for unapproved agrarian groups and, once approved, their fund to support productive projects in agrarian groups. They play an important role in drawing up and approving Communal Statutes and in demarcating voluntary areas for conservation. They also have an important program for increasing earnings of women working in the agricultural sector, and a youth entrepreneur program which aims to persuade young men to settle within their communities and to keep them from migrating by providing technical assistance and training for collective sustainable production projects on communal land that increase earnings and standards of living for all.

66. Integrated Family Development promotes projects that focus on improving living standards in families in project areas, particularly in those that contribute to improving productive, health, education and training systems. They are particularly involved in energy efficient wood burning stoves, family vegetable gardens, and small livestock and craft projects.

67. CONANP has been advancing key components of the NBSAP in areas of particular biodiversity value[3]. Important conservation-oriented development plans have been implemented in Regional Priority Areas for Conservation (*Región Prioritaria para la Conservación*, RPC) covering, among others, the sectors of environment, forestry, indigenous groups and tourism. These plans are being implemented in alliance with *SEMARNAT, CONAFOR, CDI, SECTUR* and other state dependencies of federal entities, as well as many communal and municipal organisations.

68. With plans such as PROCODES[4] and PET[5], work to date has been successful in setting a foundation for a participative approach giving priority to those communities with a positive disposition for natural resources management. Emphasis is put on soil restoration and conservation processes, water harvesting and management and safeguarding of wildlife. Solid waste management

[3] These include AICAs: Priority Bird Conservation Areas (*Area de Importancia para la Conservación de las Aves*); and RTPs: Priority Terrestrial Regions (RTP, *Regiones Terrestres Prioritarias*) Project run by the Mexican National Biodiversity Commission (CONABIO) The focus of these designations is on areas where physical and biotic conditions give origin to particularly diverse ecological environments. The RTPs correspond to terrestrial units within the Mexican national territory and represent biodiversity hot spots that harbor unique ecosystemic richness with high numbers of endemic species as well as significant biological integrity and potentially high likelihood of successful conservation efforts.

[4] Conservation Program for Sustainable Development PROCODES (*Programa de Conservación para el Desarrollo Sostenible*), formerly PRODERS (*Programa de Desarrollo Rural Sustentable*), was assigned to CONANP as a strategy to consolidate investments in communities within PAs, in the NBSAP framework.

[5] Temporary Employment Program PET (*Programa de Empleo Temporal*)

and ecotourism projects that address alternative options at the landscape level have also found a positive response. Planning and monitoring of implementation is realized via monthly meetings in two Regional Natural Resources Committees of the State of Oaxaca (CRRNs). Results to date include improved water supply, higher crop yields and increased forest preservation.

69. There is clearly much overlap between these various governmental initiatives which can be streamlined through this GEF project to enable the individual bodies to make better use of resources, strengthen their policy and regulatory frameworks for mainstreaming biodiversity into production landscapes and sectors, and to integrate tradeoffs between supply of ecosystem services and land use options into poverty alleviation and development planning efforts.

2.5. Stakeholder mapping and analysis

70. During the preparation phase (PPG) of this project, potential inter-institutional synergies among government and academic institutions were analyzed, with special attention given to relevant information from existing programmes and on-going research. The objective was to identify opportunities for inter-institutional synergies leading to greater efficiency and effectiveness in the use of funding resources supporting project implementation. Stakeholders who can contribute to project implementation are listed in Table 3. Additional detailed results of this analysis are provided in Appendix 16.

Table 3: Mapping and Analysis of Stakeholders

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
Public sector				
CDI (National Commission for the Development of Indigenous Peoples)	High: has different investment lines in the PROCAPI, PTAZI, POPMI, PFRI projects	Critical	Agriculture, animal husbandry, soil conservation, alternative tourism	Seek the incorporation of localities that are not included in its work; request the use of indigenous radio stations for the dissemination and promotion of the experiences of the GEF project in the region.
CEA (State Water Commission)	Low	High		Request CEA to establish in the most significant zones of the region Centers of Water Culture. Also, that they develop management capacity for achieving revision of the decree that provides CFE the concession for the surface waters of the Mixteca, with a view to developing catchment projects for rainfall.
CNA (National Water Commission)	Low	High	Hydroagriculture, soils, integrated ecosystem management	Request CNA to consider the GEF Mixteca Project to be a model, at least for the part corresponding to the watershed of the Mixteco River. Request CNA to lift its prohibition of the promotion of projects for the catchment of rainwater. Request CNA to consider the possibility of its technical team facilitating the hydrology studies of the project's priority tributary watersheds.

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
COINBIO (Indigenous and Community Biodiversity Project)	Low: 2010 is the first year that it will implement projects in the area		Biodiversity conservation and sustainable management	Request COINBIO to add communities located in the project's intervention area to COINBIO's list of eligible zones.
CONABIO (National Biodiversity Commission)	Low	Medium	Research, knowledge, dissemination	Present the project to CONABIO and explore the possibility of establishing agreements regarding the need to cover gaps in research and follow-up of actions for conservation and rehabilitation.
CONACULTA (National Council for Culture and the Arts), General Direction of Popular Cultures	Not determined		Environmental education, communications, sustainable biodiversity management	
CONAFOR (National Forestry Commission)	High: has a number of investment lines throughout the project area	Critical	Forestry development, commercial plantation forests, conservation and environmental rehabilitation, competivity, capacity building	CONAFOR is one of the project's principal partners, and special care has to be given to aligning its investments with the project. One important opportunity is the "Programa Especial Concurrente", in which CONAFOR enters into a 1 to 1 investment relationship for projects related to ecosystem services.
CONANP (National Commission of Protected Natural Areas)	High: has various investments through the PROCODES, PET y Criole Maiz programs in some communities in the Mixteca, covered by the GEF project	Critical	Biodiversity conservation, ecosystem rehabilitation and sustainable management, capacity building, alternative tourism.	CONANP investments can serve as a starting point for mobilizing co-financing, which is why the investment for 2010 is important in setting the project's course. It is important to request Central Offices to include other key municipalities in the Rules of Operation of its programs.
CONAZA (National Commission for Arid Zones)	High	High	Agriculture, animal husbandry, environmental rehabilitation	During 2010 define the communities and investment needs in order to prepare a proposal for the Commission
COPLADE (State Committee for Development Planning)	High	High	Inter-institutional management	Reactivate the Regional Work Operative Group for the Mixteca, focusing on the project's participating municipalities.
DIF (Integrated	Not determined	Low	Social development, capacity building,	

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
Family Development)			environmental education	
FIRCO (Endowment for Shared Risks)	Not determined		Agriculture, animal husbandry, forestry	"Shared Risks" is a development instrument that permits public, private or mixed resources to be channeled to resolve the financial insufficiency of investors and their initial limitations to have access to risk capital or the required credit for the launching and success of their projects. Contact should be established with the Director of FIRCO in Oaxaca.
IEEO (State Institution of Ecology of Oaxaca)	Low	High	Environmental education, inter-institutional management	Interview the Director of the Institution to determine its interest in the Project and possibilities for collaboration.
INAH (National Institute of Anthropology and History)	Medium	Medium	Biodiversity, agriculture, environmental education	Meetings with the regional director on cooperation have been held and require follow-up.
INEGI (National Institute of Statistics and Geography)	Low	Low	Knowledge base	
Municipalities	High	High		Request COPLADE to arrange a meeting with the presidents of the municipalities in the micro-watersheds.
PROFEPA (Attorney General of Environmental Protection)	Low: Due to limited budget and personnel, its presence in the project area is limited	High	Conservation and sustainable management	CONANP to sign an agreement with PROFEPA for the establishment of an inspection and monitoring program in the project's intervention area.
SAGARPA (Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food)	High	Critical	Agriculture, soil conservation, freshwater, capacity building	Arrange for the incorporation of the Mixteca into the small hydrology works program. Technical assistance and capacity building program will contribute to the strengthening of capacities in *ejidos* (communal farms) and project communities. Arrange that the granting of *vientres* (land grants) be tied to better practices in project *ejidos* and communities.
SECTUR (Secretariat of Tourism)	Low	Medium	Sustainable management	Present project-related proposals on alternative tourism to SECTUR to promote and strengthen in the region.
SEDER (Secretariat of Rural	High	High	Primary and agroindustrial production, soil	Establish specific work agreements with the Secretariat. In 2007 a framework agreement was signed

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
Development)			conservation and reforestation	with SEMARNAT. Explore the possibility of establishing specific work agreements under this framework agreement.
SEDESOL (Secretariat of Social Development)	High	High	Conservation , sustainable production, ecotourism, agriculture, environmental education, capacity-building, planning, organization	In 2010 initiate consultations with organized migrants on subjects and investment funds within the framework of the 3x1 Program, particularly regarding environmental rehabilitation, natural resource conservation, community productivity projects and social service community projects.
SEGOB (Secretariat of Government)	High	Medium	Governance	Seek a meeting with the Secretary of Government
SEMARNAT (Secretariat of the Environment and Natural Resources)	High: Participates in the region through different investment lines in the project "Towards Gender Equality and Sustainability " and the "Indigenous People and Environment Program"	Medium	Environmental education, communications, dissemination, environmental rehabilitation, management, normativity. In its programs on gender and indigenous people the following projects can be accessed: integrated freshwater management; efficient energy consumption; waste treatment; conservation and rehabilitation of soils; strengthening of organization and management with special attention to gender, agro-ecology and capacity building.	As the lead organization in environment in the country, its participation in the Project is important.
SRA (Secretariat of Agrarian Reform)	High	Low	Social and organization, land use planning, payment for environmental services.	Urge technical staff and civil society organizations to participate in the programs of the SRA. It would be convenient to meet with a delegate and the staff responsible for the National Agrarian Registry (RAN) and the office of the Agrarian Attorney General.
Tehuacán-Cuicatlán Biosphere Reserve	Low	High	Conservation and management of ecosystems	Meet with the management of the Biosphere Reserve.
Priority Region	None	High	Conservation and	Program a meeting with the area

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
for the Conservation of the Montaña de Guerrero			management of ecosystems	coordinator and with the national level program director.
Academic and research institutions, including NGOs				
CIESAS (Center of Research and Higher Studies in Social Anthropology, Oaxaca center)		Low		
CIIDIR (Inter-disciplinary Research Center for Regional Integrated Development of Oaxaca)	Recent research in ecology, ethnobotany and social impact in agriculture	High	Biodiversity, knowledge, alternative technologies	
Ethnobotanic Garden of Oaxaca		Medium	Scientific and technical knowledge, capacity building	
Higher Technological Institute of Teposcolula		Medium		
Higher Technological Institute of San Miguel El Grande		Medium		
INIFAP (National Institute of Forestry and Agropastoral Research)		High	Research, productive systems, soils, animal husbandry	Present a concrete proposal to INIFAP on research and capacity building subjects required by the project.
ITVO (Technological Institute of the Oaxaca Valley)		Medium	Biodiversity, agriculture, animal husbandry, forestry management	Arrange meeting with the Director and staff of the Aridnet project. It would be important to provide support to interns who would like to do their residencies in communities participating in the project.
ITO (Technological Institute of Oaxaca)		Medium		
Mexican Cactus Society				Establish contact with their biologists.
UNAM (National Autonomous University of Mexico)				Develop work agreements with researchers at the Botanical Garden, the Institute of Ecology and IIB.

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
UABJO ("Benito Juarez" Autonomous University of Oaxaca)				
UTM (Technological University of the Mixteca)	Recent research on assessment and rehabilitation of watersheds, hydrological studies, environmental rehabilitation, uses of native species, efficient use of water in agriculture.	High	Watershed management, agriculture, animal husbandry, social organization	Finalize the agreement pending between CONANP and UTM
Welte Institute			Knowledge: With over 10,000 titles, the Institute's library houses the most comprehensive and accessible bibliographic collection in Oaxaca on Oaxaca, including almost everything written in the past 40 years on Oaxacan geography, history, archaeology, ethnology, linguistics, architecture, humanities, sociology, economy, political science, etc.	
Civic groups: Some such as migrant, women's and traditional healers organizations, to be determined following selection of pilot demonstration project sites and priority micro-watersheds.				
Binational Oaxacan Indigenous Committee				
Committee of the Rio Mixteco Watershed	Important presence in the southern part of the region	Critical	Community and interinstitutional management	
Communal (*ejido*) Assemblies	Approval of all activities a prerequisite to their implementa-	Critical	Community management	

Actor	Current impact in project area	Potential impact	Project areas of interest	Recommendations
	tion			
CORRENAC (Comité Regional de Recursos Naturales de la zona Centro de Huajuapan de Leon)	Important presence in the northern part of the region	Critical	Community and interinstitutional management	
Regional Natural Resources Committee of the Mixteca Tlaxiaco-Putla-Juxtlahuaca, A.C.	Important presence in the southern part of the region	Critical	Community and interinstitutional management	
Migrant organizations				
Women's organizations				
Traditional healers				
Private sector organizations: To be determined following selection of pilot demonstration project sites and priority micro-watersheds.				
Farmers				
Hotel operators				
Investment firms				
Tour operators				

Scale: Critical, High, Medium, Low.

2.6. Baseline analysis and gaps

71. During the preparation phase of the project, an analysis was made of the baseline situation in the Oaxacan Mixteca focusing on the following areas: (i) the status of biodiversity, with special attention to threats posed for ecosystems and species, (ii) an inventory of the application of the state of knowledge in ecosystem services in policy development and planning, (iii) the impact of unsustainable resource management and agricultural practices on livelihoods, (iv) related socio-economic conditions and trends and (v) what is currently being done for sustainable development in the Oaxacan Mixteca (see section 2.4 Institutional, sectoral and policy context and Table 3). Special attention was given to the compilation of information and data available in existing cartographic and GIS formats. Where feasible, new thematic maps were prepared from information and data collected from different institutions and experts. Moreover, information management mechanisms were designed for incorporating information generated by the project into a data base.

72. *Biodiversity*: A summary baseline analysis was made of the status of biodiversity using existing specimen and ecosystem-based data bases to analyze species-richness patterns, levels of endemism and numbers of endangered plants and animals. The Mixteca's flora comprises a vast richness of plant species estimated at over 2,668. For Mixteca Alta alone 1,550 species, 490 genera and 132 families (representing 66% of total families in Oaxaca and 60% in Mexico) have been registered. Roughly 15 of these species are in some category of protection. In regard to fauna, there are 368 species of vertebrates and 49 species of invertebrates. Birds and mammals stand out for their numbers and despite comprising the highest number of threatened species, reptiles stand out in this regard with

nearly two-thirds of their species being endangered. To summarize, basic knowledge of biodiversity is still very limited, particularly in the Mixteca Baja zone, and the rate of biological diversity loss has accelerated alarmingly throughout the project region. On a more positive note, biodiversity resources have assumed increasing economic, scientific and commercial value to a wide range of stakeholders and there is renewed attention being given to the traditional knowledge associated with these resources. Stakeholders realize the need for better science to improve their understanding of how ecosystems function and the ways in which they are affected by anthropogenic factors and to facilitate their decision-making for conservation and environmental management. (Please refer to documents "Biodiversidad Mixteca"
http://www.4shared.com/file/250034479/4ba5edca/biodiversidad_mixteca_final_25.html,
"Endemismos flora Mixteca Alta"
http://www.4shared.com/file/250029017/32443efa/Anexo_10_Endemismos_flora_mixt.html, and
"Listados de fauna de Mixteca"
http://www.4shared.com/file/250028474/42a2077f/Listados_de_fauna_de_mixteca.html*)*.

73. *Ecosystem services*: An analysis was made of the links between the Mixteca ecosystems' functioning and human well-being, and the degree to which this knowledge of ecosystems services is applied in the Mixteca. The analysis showed that many of the services of living organisms and the way in which they contribute to a wide variety of environmental services are neither recognized nor properly valued in economic and social terms. It is therefore necessary to develop policies that reflect the true economic and intrinsic value of biodiversity. Fundamental knowledge and further research on the role of biodiversity in provision of ecosystem services will only be of use if it is combined with improved communications and synergies between scientists, decision makers and other stake-holders. (Please refer to document "Biodiversidad Mixteca"
http://www.4shared.com/file/250034479/4ba5edca/biodiversidad_mixteca_final_25.html).

74. *Unsustainable resource management and agricultural practices*: Agricultural expansion is taking place at the expense of natural vegetation. A comparative study of vegetation and land use by INEGI using data from 1993 (SERIE I) and 2005 (SERIE II) demonstrated that the extent of land being farmed increased for several of the municipalities under this GEF project. At the same time, there was a decrease in temperate zone vegetation, mainly pine and cloud forests and, at the lower elevations, the increase in agricultural land corresponded to a reduction in lowland deciduous forests. (Please refer to document "Sistemas de producción GEF Mixteca"
http://www.4shared.com/file/250051401/b2a1f6ad/PARTE_IV_DESCRIPCIN_DE_LOS_SIS.html*)*.

75. *Socio-economic conditions and trends: As indicated earlier* in section 2.1 on background and context, despite the Mixteca's diverse and rich ecosystems, soil erosion has reached disastrous levels after years of deforestation, overgrazing and agricultural expansion, which in turn has exacerbated poverty and marginalization in the region. In fact, the Oaxacan Mixteca is one of Mexico's poorest regions, with the difficulties of subsistence agriculture, lack of alternative employment, and general marginalization of the population resulting in high rates of rural flight. To counteract these socioeconomic conditions and trends, national initiatives such as the Special Concurrent Program for Rural Sustainable Development has been launched that encompasses at least 16 programs from different government sectors that have direct or complementary bearing on the present project, including federal secretariats such as SAGARPA, SECTUR, SEDER, SEDESOL, SEMARNAT, SEP and SRA. A series of programs from the agricultural sector (SAGARPA) are also in place, aimed primarily at food security and poverty alleviation goals. Given that the Mixteca is a priority area in Mexico of indigenous populations, the Federal Commission for the Development of Indigenous Peoples (CDI) is making important investments in the region that also address social and economic development, including poverty alleviation. Please see section 2.4 for more detailed information on these programs. However, the majority of these development support programs do not adequately

integrate biodiversity considerations and the ecosystem approach, including ES methodologies and tools. Through this project and the GEF intervention, it is expected that these programs and their investments will incorporate biodiversity considerations and the ecosystem approach into their workplans and programs of work so as to maximize biodiversity conservation of global significance in Mixteca ecosystems and its contribution to the region's sustainable development. (Please refer to document "Informe Final Social GEF Mixteca" http://www.4shared.com/file/250060906/db01ede8/Informe_Final_GEF_SOCIAL.html).

76. *Alternative tourism*: There have been few real efforts to exploit the commercial potential of ecotourism locations in the region and, in general, ecotourism activities based on natural ecosystems in the Oaxacan Mixteca are still in their fledgling stages. Some institutions have started to develop infrastructure and consolidate the activities of some community groups, but these efforts still have a long way to go before they can be considered as true commercial ventures. Yet without a doubt, Mixteca ecosystems have great potential for nature tourism activities because they represent biodiversity hot spots that harbor unique ecosystemic richness, significant biological integrity and maintain an important degree of endemism. Please see paragraphs 16 to 19.

77. Gaps: It was found that the following gaps in baseline information exist and need to be addressed during the project's first year. This additional baseline information will be crucial for assessing the achievement of the project's indicators and objective.

- Further baseline data on the current distribution of biodiversity and ecosystem services in the Oaxacan Mixteca, particularly in the four zones that make up the project intervention area, will be required for project implementation.
- Collection, analysis and interpretation of both existing baseline data and new information generated under this project will have to be analyzed and interpreted so that comprehensive land use plans applicable to the project's intervention area can be elaborated.
- Further baseline information on the surface area of degraded lands, farmlands and ecosystems within the project's intervention area is required.
- Baseline data on the location, extent, distribution and state of existing and abandoned *lama bordo* agricultural lands needs to be generated for use in land rehabilitation plans in the project's intervention area.
- An integrated analysis is needed of the kind of eco-tourism products envisaged in the first phases of project intervention in areas where tourist infrastructure could be developed, including information on the numbers of tourists, the length of time they stay, where they come from and go on to and the kind of activities in which they can participate.

2.7. Linkages with other GEF and non-GEF interventions

78. Synergies and interaction of this project with other initiatives to maximize learning as well as to avoid repetition of efforts and investments while integrating project findings at the program level with UNEP's knowledge management has been purposefully built into project design. On a day to day basis at the output and outcome level, these considerations are part of the fourth component under outcome 4.2 (please refer to section 3.3 of this project document and to the results framework). Many initiatives dealing with ecosystem services and their valuation as well as closely related subjects exist within the portfolios of UNEP and the project's partners. Notwithstanding significant differences in the geographic coverage as well as in the precise thematic scope and depth of analysis, it is important that the project stays abreast of advances in similar efforts to make the most of their experiences and ensure that the same work is not unnecessarily repeated. As a starting point for this, an analysis of initiatives with similar coverage of area, scope or which involved project partner agencies was carried out during PPG. The following were considered to be the most relevant:

- The Global **UNEP GEF FSP "Project for Ecosystem Services" (ProEcoServ)**, will take the lead in developing and applying appropriate ecosystem management tools within sectoral planning frameworks and macroeconomic planning models in close coordination with its Division of Environmental Policy Implementation (DEPI). Said project includes important co-funding from UNEP and constitutes the most systematic, comprehensive and thus relevant one from within UNEP's ES project cluster in terms coordinating outputs for science policy interface support.

- The **UNEP GEF FSP "Mainstreaming the conservation of ecosystem services and biodiversity at the sub-watershed scale in Chiapas"** also conducted its PPG in 2009 and during this phase interactions with the present project have already been established through reciprocal workshop participation to exchange experiences and avoid creating redundancies. It was clearly established that the ultimate focus of the Chiapas project is different from the one in Mixteca, in that it is not on the broader subject of ES valuation and tradeoffs with livelihood options but rather on the more specific subject of piloting PES schemes with the private sector. This is an advanced application of ES valuation dealing with buyers and sellers of said ES. However, the general scopes of both projects are closely related and thus CONANP will be able to draw important information in terms of ES valuation and mainstreaming of biodiversity at the state and local levels. Based on the existing relationship, coordination of synergies will be continued in a systematic fashion at the steering committee level and through outcome 4.2 during implementation.

- The WB proposed FSP with CONABIO, entitled "**Fostering sustainable and competitive production systems consistent with the conservation of biodiversity**", corresponding to GEF-4 Strategic Program BD-SP5 - Fostering Markets for BD Goods and Services will be implemented from June 2011 to May 2016. Building on Mexico's Mesoamerican Biological Corridor project, its objective is to conserve and protect nationally and globally significant biodiversity in Mexico through improving and mainstreaming sustainable management practices in the productive landscape in priority ecological corridors in the States of Chiapas, Campeche, Tabasco, Veracruz, Guerrero, Oaxaca, Michoacan, Quintana Roo and Yucatan.

- The IFAD proposed FSP with CONAFOR on **Mitigating Climate Change through Sustainable Forest Management and Capacity Building in the Southern States of Mexico (States of Campeche, Chiapas and Oaxaca)** is a five year project scheduled to begin in July 2011. Its objective is to contribute to climate change mitigation (emission reductions, increase in carbon sequestration) through (a) the dissemination of inclusive strategies and tools appropriate to poor and vulnerable rural inhabitants; (b) the strengthening of local capacities to carry out activities that will help to maintain and increase carbon capture, reduce greenhouse gas emissions and pursue capture activities in forest regions of Campeche, Chiapas and Oaxaca; (c) investments for LULUCF and sustainable forest management activities; and (d) institutional consolidation of the National Forestry Commission (CONAFOR).

- The WB **Environmental Services FSP** is planned to last until 2011. Its main focus is on PES schemes for water and carbon and associated biodiversity conservation benefits. CONAFOR's participation in the steering committee of the present project will contribute with lessons on linkages of government support schemes to biodiversity conservation in priority areas, among others. CONAFOR is contributing a substantial portion of co-financing to the Mixteca project, and project preparation activities will ensure that proper allocation of federal funds prevent double counting of resources for parallel projects.

- The WB **Sustainable Hillside Management MSP** was concluded in 2005. Oaxacan authorities related to the present project continue to extract important lessons from its targeted research on improved land management practices in several production systems to improve productivity of farmer resources as they relate to biodiversity conservation in the broader landscape scenario.

- The UNDP **Integrated Ecosystem Management FSP** has one of its intervention sites in the Montaña de Guerrero area, which is adjacent to the present project. While it is concluding operations in 2009, CONANP-PRODERS is presently systematizing knowledge results, particularly in piloting integrated and replicable ecosystem-management models that conserve biodiversity while averting land degradation. Lessons from this project will be particularly valuable since the project's objective was to establish an institutional framework and build local capacities to manage biodiversity-friendly land and resource uses, including set-asides for biodiversity protection, compatible agro-forestry and silvo-pastoral systems, and ecological restoration.

- The WB **SINAP II FSP** includes supporting the protected area in the 490,187 hectare Tehuacán–Cuicatlán Biosphere Reserve that borders one of the most degraded areas of the Mixteca to the east. It was slated to conclude in 2009. While municipalities from this project do not overlap with proposed pilot areas of the present project, CONANP will capitalize on this project's experience.

- The WB **Indigenous Conservation of Biodiversity FSP** (COINBIO) concluded in 2008. CONAFOR's experience in work with indigenous groups on biodiversity conservation will bring valuable inputs in complementarity for the present project as well as important co-financing.

- The Northern Arizona University Cerro Jazmin Archaeological Project for mapping and studying the site of Cerro Jazmin, a first-tier precolombian urban center in the Mixteca Alta of Oaxaca, for the purpose of expanding knowledge of how pre-colombian urban centers functioned and impacts on the surrounding landscape, including the utilization of unique *lama-bordo* agricultural terraces.

79. This GEF project also aims to work alongside non-governmental organizations to encourage further expansion of their most successful activities including, for example, organizations such as the Center for Integral Development of the Mixtec Campesinos (CEDICAM). CEDICAM's hallmark work is re-introducing ancient *lama-bordo* methods of erosion control in which contour ditches or trenches measuring half a meter deep, half a meter wide, and forty-five meters long, are dug in a parallel series like terraces on the hillsides. Each trench holds 15,000 liters of water that would otherwise wash away the hillside's soil during heavy rains. A welcome secondary effect of the trenches has been the retention of groundwater—locals are discovering the birth of springs where the contour ditches are present. The region's hills are now traced by 160 kilometers of contour ditches and lined by trees planted at a rate of 200,000 per year. That is all the direct work of CEDICAM and the municipal governments and federal agencies that have been adopting CEDICAM's methods since 1996. In terms of interactions and coordination the stakeholder analysis under section 2.5 of this project document provides an indicative view by means of a preliminary analysis of similar interactions and opportunities, including recommendations for project action.

SECTION 3: INTERVENTION STRATEGY (ALTERNATIVE)

3.1. Project rationale, policy conformity and expected global environmental benefits

80. National agencies requested UNEP's technical support in achieving a more effective implementation of the conservation objectives set forth in Mexico's National Biodiversity Strategy and Action Plan. In particular, they asked for technical support to overcome the threats and barriers described in section 2.3, including covering critical information gaps, designing a program tailored to mainstream ecosystem services considerations into poverty alleviation, farming and infrastructure programs, and assisting in the pilot application of these adjusted programs into selected areas with the highest biological value and that comprise as yet unprotected corridors among reserve areas.

81. The fundamental rationale is that a significant improvement of ecosystem integrity and resilience can be reached for the entire project intervention area through implementing ecosystem management techniques and this, together with the project's components described below, in particular, the rehabilitation of degraded lands, will achieve global environmental benefits in biodiversity conservation. This in turn will bring about improved delivery of ecosystem services for more sustainable livelihoods, including better water and soil conditions and improved agricultural productivity in the form of higher efficiencies and yields. Productive activity will in turn be concentrated in the most suitable areas thereby decreasing habitat disruption and encroachment on fragile and biologically significant ecosystems.

82. In parallel, the project will strive for active stakeholder involvement and policy support for conservation of forest areas as well as reforestation and regeneration of vegetative cover to bring about the benefits of improved biodiversity in surrounding ecosystems at the landscape level. This will be further facilitated by the application of federal support programs delivered at state and local levels, which include a variety of practical incentives to secure biodiversity conservation goals.

83. As such, project impact will have many ways of being objectively verified and measured as depicted by the indicators that have been chosen for the outcome level and their respective goals. These cover several key aspects and range from local stakeholders involved, key areas of conservation or rehabilitation, methodologies and models applied among many others. Collectively these indicators will allow measuring the incremental impact of the project for biodiversity conservation and sustainable use. Some of them will do so more directly, such as those assessing areas of habitat conservation and/or improved connectivity, or increased delivery of ecosystem services. Others, measuring improved capacities and tools or assessing the dissemination for upscaling through systematization and mainstreaming are somewhat of an indirect measure.

84. In its nature as a project integrating on the ground pilot interventions in key areas with planning and capacities at the landscape level, the reading of the indicators has to be understood in their capacity to render multiplying effects. To illustrate this with an example, if an indicator measures an area of voluntary conservation of say 500, this area will be strategically placed to connect two protected areas of say 2500 and 2000. While the indicator of 500 may seem relatively low as a standalone, the actual and direct felt impact in terms of habitat connectivity is in reality that of a contiguous area of 5000. To this we have to add the heterogeneous nature of pilots within the project area's diverse landscape mosaic, which provides many ways to achieve multiplier effects, replication and upscaling that goes from the pilot intervention to the landscape level. On the other hand a different type of multiplying effect is achieved through strategic policy support and capacity building at state level to consolidate effects within the entire project area and beyond.

85. Ultimately, the objective measurement of global environmental benefits in terms of biodiversity and ecosystem services will be a dynamic process based primarily on the outputs of outcome 1.2 including feedback from pilot interventions and the setup of the information on the GIS platform, the proposed working matrix and specific monitoring system for the project area (please refer to outcome 1.2 in section 3.3 and the results framework). For biodiversity of global relevance as appraised for the project intervention area including protected areas, these tools will provide valuable information on the conservation of forest surfaces as well as reforestation and regeneration of vegetative cover and surrounding ecosystems at the landscape level. The tools and increased capacities that will be developed by the project will allow carrying out said verification not only during the lifespan of the project but due to their systematic rooting at the institutional level also for the time after the project ends.

86. Hence the delivery of global environmental benefits will be primarily derived from significant conservation, rehabilitation and increased connectivity of habitat for globally significant biodiversity in key areas of the Mixteca. Table 4 provides an overview of local benefits to be derived from the project's key outcomes and the resultant global benefits that they will in turn generate.

Table 4: Local and Global Benefits Derived from Project

Key project outcomes	Local benefits	Global benefits
1.1 Stakeholders and decision makers at state and local level have increased access to Ecosystem Services tools applicable to biodiversity conservation and sustainable use 1.2 Natural Resources, ecosystem services and biodiversity in the project intervention area are assessed, valued and monitored using the new ES tools and knowledge provided through the project 2.1 Biodiversity and ES considerations are integrated into state and federal support programs and land use planning	• Installed capacity for applying ES methodologies and tools to development planning • Development based on environmentally sound land use planning that fully takes into account ecosystem services • Strengthened coordination and synergies among federal, state and local authorities in support programs contributing to the protection and restoration of ecosystem services, especially the provision of water, supporting soil conservation and biodiversity conservation • Compensation of local stakeholders for restoring and/or maintaining ecosystem integrity	• Improved planning and management of areas of particular importance to biodiversity • Reduction of the current rate of loss of globally-significant biodiversity • Rehabilitation and restoration of globally-significant ecosystems
3.1 Local stakeholders apply the ecosystem approach for planning and implementation of productive activities and biodiversity conservation;	• Restored productivity of lands, including those using *lama bordo* traditional systems • Control of soil erosion	• Reduction of the current rate of loss of globally-significant biodiversity • Rehabilitation and restoration of globally-significant ecosystems

Key project outcomes	Local benefits	Global benefits
3.2 The supply of key Ecosystem Services is secured, improving ecosystem resilience and leading to improved livelihoods	• Reduction and prevention of the expansion of the agricultural frontier • Decreasing habitat disruption and encroachment on fragile and biologically significant ecosystems • Expansion of the region's vegetative cover as a result of reforestation and afforestation • Protection and restoration of ecosystem services, including the provision of food, water and energy; regulating climate and controlling pests; supporting nutrient cycles and crop pollination; and maintaining cultural values, including recreational such as ecotourism • Strengthening of alternative tourism based on biological diversity, natural attractions and agro-ecosystems • Decreased pressures on existing forest resources as a result of more efficient fuelwood utilization • Extension of plantation forests with native species appropriate for fuelwood • Improved agricultural productivity in the form of higher efficiencies and yields • Improved livelihoods and poverty alleviation	• Improved status of threatened species • The preservation and application of traditional knowledge and practices in the sustainable management of natural resources that contributes to the conservation and sustainable use of biodiversity • Enhanced resilience of agro-ecosystems and globally-significant ecosystems and their species to adapt to climate change • Maintenance of biological resources supporting sustainable livelihoods, local food security and health care, especially for the poor Carbon benefits are not within the scope of this project and hence will not be measured as such. They are however considered as additional benefits and in their connection with improved land use leading to increased benefits for biodiversity and include: • Reduced carbon emissions from forest sources contributing to climate change, which is a major threat to biodiversity on a global scale • Increased carbon sequestration from forest plantations, reforestation and afforestation for mitigating climate change that is threatening biodiversity on a global scale
3.3 Improved land use planning and management practices lead	• Strengthened ecosystem integrity through	• Improved planning and management of areas of particular

Key project outcomes	Local benefits	Global benefits
to increased habitat connectivity for globally significant biodiversity within the project intervention area as assessed and monitored under outcome 1.2	increased connectivity • Ecosystem resilience improved • Conservation of biodiversity richness, including significant numbers of endemic species • Engagement of local stakeholders in biodiversity conservation	importance to biodiversity • Increased habitat connectivity for globally significant biodiversity within an area of 567,308 hectares • Increased integrity of ecosystems of global biodiversity significance • Reduction of the current rate of loss of globally-significant biodiversity • Improved status of threatened species • Enhanced resilience of agro-ecosystems and globally-significant ecosystems and their species to adapt to climate change
4.1 Project findings, tools and methodologies made available to state and federal decision makers as well as the public, and relevant interest groups	• Replication of local benefits derived from key project outcomes 1.1 to 3.3 in other areas of the Oaxacan Mixteca and Mexico	• Replication of global benefits derived from key project outcomes 1.1 to 3.3
4.2 Coordination and cooperation established with synergic initiatives and other projects	• Support to replication of local benefits derived from key project outcomes 1 to 6 in other areas of the Oaxacan Mixteca and Mexico under outcome 4.1	• Support to replication of global benefits derived from key project outcomes 1.1 to 3.3 under outcome 4.1 • Enhanced conservation and sustainable use of biodiversity worldwide as a result of UNEP programmes and projects that incorporate the findings and lessons learned from the GEF Mixteca project

3.2. Project goal and objective

87. The primary goal to which the project will contribute is the conservation of globally important ecosystems and species within the Mixteca region of Oaxaca, including a large number of endemic and migratory species. This is to be achieved through rescuing traditional knowledge and bringing it together with innovative, state of the art technology in assessment, resulting in good practices in biodiversity conservation, natural resource management and agriculture. At the same time, this will contribute to improving the livelihoods of local and indigenous communities.

88. The objective of this project is to mainstream biodiversity conservation into natural resource use and development planning in the Mixteca Region of Oaxaca integrating ecosystem services (ES) tools and sustainable livelihood options. This includes integrating innovative methodologies and tools for

assessing and valuing ecosystem services and incorporating these values into policy instruments used in decision-making by government and stakeholders.

3.3. Project components and expected results

89. The proposed project will focus on strengthening the knowledge base on ecosystem services for biodiversity conservation, supporting innovative technology, methodologies and tools for ecosystem services assessment and mainstreaming them in federal and state support programs in the Oaxacan Mixteca, promoting good practices in agriculture and natural resource management through field testing in pilot demonstration projects, improving the livelihoods of local communities through better management of their biodiversity and natural resources, including through the development of alternative tourism, and broadly disseminating project findings and lessons learned to other projects, programs and areas. When reading this section it will be important to bear in mind the barrier analysis presented under section 2.3 and how these project outcomes relate to them. The project's outcome indicators together with their targets are detailed in Appendix 4 (Results Framework).

Component 1: Strengthening the knowledge base on the ecosystem approach for biodiversity conservation. [*GEF funding - $1,300,000; cofinancing - $714,000*]

90. The objective of this component is to build upon the existing assessment and monitoring of natural resources, with the GEF increment ensuring that state of the art technology is applied so that the most relevant aspects for biodiversity conservation are considered. This shall include taking into account the biodiversity habitat value of different forest species, shrubs of semi-arid ecosystems, and plants with ethnobiological use, the valuation of key ecosystem services to favor compensation for reforestation and to avoid deforestation in areas with the highest biodiversity value and with the highest biodiversity value species. It will furthermore assist in applying the adequate technological tools for quantifying the contribution of selected ecosystem services to local livelihoods and estimate supply curves and trade-offs within expected development trajectories of the region. The project will assist local counterparts in adjusting tools and innovative methods to determine expected supply curves and trade-offs and set this information on a GIS based platform. There will also be accompanying technical assistance to set up a monitoring system to track changes in ecosystem services in the targeted areas over time. Furthermore, the vulnerability of the region to climate change driven fluctuations, particularly in water availability, will also be taken into account. The component consists of the following two outcomes.

91. *Expected outcome 1.1: Stakeholders and decision makers at state and local level have increased access to Ecosystem Services tools applicable to biodiversity conservation and sustainable use.* [*GEF funding - $524,000; cofinancing - $714,000*] Through this outcome, it is expected that a strategy will be in place for increased awareness and training to support decision making at state, municipal and community level about the importance of the conservation of biodiversity and ecosystem services approach. Consequently, technical areas of key institutions involved in planning and sustainable management of natural resources will be strengthened at local and state level. The improved capacities will allow a paradigm shift within the accomplishment of their respective mandates and responsibilities towards biodiversity conservation and sustainable use.

92. The outputs to be delivered by the project to achieve this outcome are the following:

- Start-up manual on ES tools and methodologies for decision-makers at the state and local level.
- Educational materials for methodologies and tools that are adapted to the Oaxacan Mixteca regarding: (1) assessing, (2) valuing ecosystem and (3) monitoring ecosystem services.

- Supportive audio-visual training materials on ES
- 80 Trained state and local officials in the project intervention area on the application of ES methodologies and tools.
- Revised start-up manual on ES and supportive educational materials for use in project replication that takes into account project developments, findings and results.

Expected outcome 1.2: Natural resources, ecosystem services and biodiversity in the project's intervention area are assessed, valued and monitored using the new ES tools and knowledge provided through the project. [*GEF funding - $776,000; cofinancing - $0*] Project preparation activities showed that, despite the biological importance of the Mixteca, there are large gaps in ecosystem services and biodiversity information, but also that current productive activities are deteriorating natural resources. This outcome will apply innovative technology to generate detailed information about biodiversity and the ecosystem services of the project area, using the watershed approach as intervention framework. During project preparation a comprehensive study was conducted by the project team in Oaxaca - emphasizing the project area - to define the detail of interventions that will be necessary to keep ecosystem services and biodiversity status under review. As a result, the methodology for assessments, recording and processing of information emphasizing characteristic species[6] and critical ecosystem[7] status was established, including the baseline assessment and subsequent monitoring of biodiversity benefits obtained through project interventions. The respective budgetary provisions to carry out the biodiversity and ecosystem assessments have been made. As with other working documents for the project preparation, the original paper resulting from the specialized biodiversity study is articulated in Spanish. As such, it constitutes the basis for project work in the field and in particular allows translation of key elements into the Mixteco language (and other native languages) for working with native stakeholders when field activities related to biodiversity assessments are carried out, such as surveys, polls and inventories. A summary of the most relevant components of this document has been translated to English and included for clarification purposes as appendix 15.1 of the prodoc. The full document is accessible at:
http://www.4shared.com/file/250034479/4ba5edca/biodiversidad_mixteca_final_25.html.
Once the project is under implementation, all relevant support documents will be made more permanently available on the web by the project management. The information thus generated will have three main lines of application: (i) to establish an information system for support of decision making by different stakeholders that will be integrated into the project; (ii) implementation of a natural resources monitoring system, to establish the area's environmental wealth, as well as the effect of the various productive activities on ecosystem services, and (iii) construction of models that reveal the balance between both. The results will allow establishing the main research lines to support the activities of the third component with pilot demonstration projects. It is envisioned that through the construction of the GIS system and the implementation of the monitoring, the resulting data management will feed the information necessary for setting up the pilots under component three. The pilots in turn will provide practical testing of land and natural resource use models to maximize ecosystem services and thus serve as on the ground validation of the data providing feedback for the construction of modeling.

93. The outputs to be delivered by the project to achieve this outcome are the following:

[6] Characteristic species can be of different types: 1) indicator species, which are sensitive to the effects of ecosystem disturbance, 2) key species, which are dependent on a large set of species in a given ecosystem, 3) umbrella species, requiring a very large area, hence their presence indicating a large number of other species, 4) vulnerable species, facing high risk of extinction in the wild.
7 Critical ecosystems are further specified in the BD assessment methodology in appendix 15 of the project document.

- Comprehensive data and information on ES in the Oaxacan Mixteca region and in particular in the project intervention area.
- Detailed studies by ecosystem and priority watersheds assessing and valuing ecosystem services in the Oaxacan Mixteca and in particular in the project intervention area.
- Geographic information system on the project area and the region's biodiversity and ecosystem services to support relevant decision-making and investments in the region.
- On-going programs to assess value and monitor ecosystem services in the Oaxacan Mixteca and in particular in the project intervention area.

Component 2: Supporting biodiversity-friendly policy and program development for land use planning and resource use. [*GEF funding - $1,100,000; cofinancing - $506,000*]

94. The Institutional policy analysis conducted during project preparation confirmed that the expertise at the state and local level is insufficient to allow an adequate application of ES tools for biodiversity conservation and sustainable use. Consequently, the main objective of the second component is to support the science –policy interface that is required to assist authorities at state and local level to integrate key findings regarding ecosystem services and biodiversity of component one into land use planning and social support development programs, hence facilitating the integration of these priorities into a series of poverty alleviation, food security and social and farming support programs that will be piloted under component 3.

95. *Expected outcome 2.1: Biodiversity and ES considerations are integrated into state and federal support programs and land use planning.* [*GEF funding - $1,100,000; cofinancing - $506,000*] The project will establish a capacity building program targeting key decision makers in sectors relevant to land use planning within the institutional framework at the state and local level. As such, it will strengthen an inter-institutional development planning platform to coordinate efforts to support conservation and rehabilitation of ecosystem functioning and services and thus their ability to host increased levels of biodiversity. These initiatives will also be instrumental in strengthening CONANP in its mandate to conserve biodiversity, and in its leadership role to harness development investments and align priorities around biodiversity conservation and sustainable use elements within the state's committee for development planning (COPLADE)[8]. In this context, the project will foster the acceptance of biodiversity and ecosystem service considerations into the policy and regulatory framework of various support programs working in a coordinated manner with authorities at the state, regional and local levels.

96. One of the component's goals is to integrate planning efforts at various levels to foster a more sustainable institutional basis for biodiversity mainstreaming. COPLADE´S regional planning support group is where 40 different federal and state sectoral representations establish priorities for different regions of the State of Oaxaca. The Mixteca Region has been proposed as a priority area for institutional coordination. At the regional level, the project targets are the Regional Natural Resources Committees (CRRNs) of Huajuapan and Tlaxiaco, Mixteco and Mixteco River Basin Committee Rio (CCRM), where state, and federal government representations meet municipalities and communities to establish investment priorities. Institutional coordination puts particular emphasis on entities in charge of agricultural development, in order that their programmes consider biodiversity and ecosystem services criteria. The end of the project scenario shall find a policy context in which ecosystem services and biodiversity considerations have been introduced as priority criteria for the approval of

[8] *Comité Estatal de Planeación para el Desarrollo de Oaxaca* (COPLADE)

support programs of various relevant sectors[9] by COPLADE´s regional inter-institutional working group, regional committees, as well as local authorities.

97. The outputs to be delivered by the project to achieve this outcome are the following:

- Regional inter-institutional working group to support the integration of biodiversity and ES considerations in state and federal support programs and land use planning in the project's intervention area.
- Integrating the outcomes of the on-going programs assessing, valuing and monitoring ecosystem services from 1.2 into development policy-making and planning in the Oaxacan Mixteca.
- Mainstreaming of biodiversity, including ES tools and options into federal and state support programs and land use plans in the Oaxacan Mixteca.
- Baseline data for the development of comprehensive land use plans applicable to the project intervention area.
- Environmentally sound land use plans for sustainable development in the project's intervention area, taking into account the outputs provided by the on-going programs assessing, valuing and monitoring ecosystem services under 1.2.
- Revised existing land use plans or being developed in the Oaxacan Mixteca to include ecosystem services considerations, taking into account outputs provided by the on-going programs assessing, valuing and monitoring ecosystem services under 1.2.
- Pilot system of compensation for ecosystem integrity provided by local communities, farmers and other stakeholders.
- ES indicators for assessing the agricultural projects of SAGARPA and SEDER in the project's intervention area, particularly as they relate to GAP and good practices for natural resource management.

Component 3: Piloting biodiversity friendly programs on the ground. [*GEF funding - $1,920,000; cofinancing - $6,149,815*]

98. The third component's main objective is to set integral natural resources use protocols and models for reduced environmental deterioration and to promote the conservation of nature. It will assist authorities in the pilot implementation of state social support policies that integrate ecosystem service considerations into their operations. Testing of innovative technologies and models based on the assessments from component one in pilot demonstration projects will work with local stakeholders applying tools, methods and practices through local livelihood options that exercise minimum damage on critical ES and ensure minimum standards of habitat quality required for conservation corridors. The first two components will thus be tested in the pilots and it is envisioned that this will result in more effective use of water and soil resources as well as other productive landscape ecosystem services. Hence the increased productivity in effective project's intervention area for the piloting of conservation- friendly production protocols based on ES response will help reduce the negative effects of shifting agriculture and deforestation. During the project design phase, the extent of all the surface areas to be addressed by the project was defined more precisely, placing special emphasis on the micro-watershed as an important spatial unit for project implementation. Potential project's intervention area (Appendix 18) is determined for the selection of micro-watersheds utilizing four criteria: (i) priority ecosystems with the highest biodiversity significance (tropical deciduous forests, arid vegetation, tascáte forest and cloud forest), (ii) vegetative cover, including secondary forests, with

[9] Target sectors specified in the tracking tool, appendix 15, section V are: Agriculture, Forestry, Tourism and Natural Non Timber Products

potential biodiversity habitat value and corridor function, (iii) regional Government conservation schemes, and (iv) relevant agroecological zones. Based on this analysis the project's intervention area was decided upon: **Mixteca Baja**: 1. Huajuapa de León-Tonala (233,771 has.); **Mixteca Alta:** 2. Sierra Sur-Juxtlahuaca (125,677 has.); 3. Tlaxiaco (117,342 has.); and 4. Cerros Negro Yucaño (90,518 has.) covering a total area of 567,308 hectares, or approximately one-third of the Oaxacan Mixteca (more detail is provided in section 2.1 above). This area is to be understood as a mosaic of production and conservation areas comprising agricultural and forest patches, within which the different types of pilot initiatives will take place. It constitutes the area of more direct project impact because of the closer involvement of local stakeholders at the community, ejido and municipal level. The Oaxacan Mixteca as the wider area of project influence on the other hand will be covered in a more gradual form through the upscaling strategy of component four as well as the key capacities created by the project at state level.

99. *Expected outcome 3.1*: *Local stakeholders apply the ecosystem approach for planning and implementing productive activities and biodiversity conservation.* [*GEF funding - $805,066; cofinancing – 2,710,234*] Field testing of appied models in pilot demonstration projects will be critical for promoting and building capacity in the development and application of (i) ES tools and methodologies for biodiversity conservation and natural resource management, (ii) good practices for biodiversity conservation and natural resource management, (iii) good agricultural practices in support of biodiversity conservation and natural resource management and (iv) alternative tourism approaches for the Oaxacan Mixteca based on its biological diversity, natural attractions and agroecosystems. Pilot demonstration sites will also play an important role in the monitoring and collection of scientific and technical data and information for testing and refining ES methodologies, models and tools and good practices for agriculture and natural resource management promoted through the project under component 1.

100. The outputs to be delivered by the project to achieve this outcome are the following:

- Start-up manual for local stakeholders in the project intervention area on the ecosystem approach for planning and implementing productive activities and biodiversity conservation.
- Educational materials in each of the following areas that are adapted to the Oaxacan Mixteca: (1) good agricultural practices (GAP) and (2) good practices in natural resource management.
- Educational materials on the sustainable use of biodiversity, based on the ethno-biological experiences of the local people.
- Educational materials on the importance of preventing the illegal collection and use of wild biota.
- Supportive audio-visual training materials on GAP and good practices in natural resource management.
- Revised start-up manual and supportive educational materials on the ecosystem approach for planning and implementing productive activities and biodiversity conservation for local stakeholders that take into account project developments, findings and results, for use in project replication.
- Cooperative agreements with rural community planning processes, particularly within the regional natural resources committees and in priority communities in the project's intervention area, for promoting the integration of biodiversity conservation, ES considerations and sustainable management of agriculture and natural resources.
- Agreements on priority actions, programs and projects requiring the ecosystem approach through participatory rural community planning exercises.

- Strategy for mainstreaming alternative tourism based on biodiversity, natural attractions and agro-ecosystems in state and local tourism programs.
- Alternative tourism strategy for the project's intervention area based on biological diversity, natural attractions and agroecosystems.
- Trained and certified ecotourism guides for the Oaxacan Mixteca.
- Ten micro-watersheds that can serve as models for rural development based on the ES approach and good practices in agriculture and natural resource management.
- Trained local stakeholders, particularly farmers and local communities, at the 10 pilot demonstration projects in the intervention area on the application of the ecosystem approach for planning and implementing productive activities, natural resource management and biodiversity conservation.
- Technical assistance to producers for the marketing of goods and services that are the product of GAP and GNRMP, including lama-bordo techniques, exploring opportunities for participating in related certification programs.

101. *Expected outcome 3.2*: *The supply of key Ecosystem Services is secured, improving ecosystem resilience and leading to improved livelihoods.* [*GEF funding - $419,917; cofinancing - $1,653,450*] Habitat and ecosystem destruction and soil degradation are listed under the main threats to biodiversity in the project area. The underlying causes are encroaching deforestation driven by unsustainable agricultural development alongside poverty and the missing awareness of the value of the biological resources being degraded thus resulting in a vicious cycle. It is to help overcome precisely this type of barriers that the project has devised this specific line of work. It will provide practical development alternatives tailored to the target area population and their natural resource based livelihoods while reversing land degradation. This includes the restoration and application of traditional technologies while at the same time taking advantage of the state of the art methodologies introduced by the project. Two important strategies are to reduce impact on the environment by promoting the use of fuelwood efficient stoves and plantations, and lama-bordo agricultural systems for soil conservation and improved productivity. Activities under outcome 3.1 related to the ecosystem approach in development planning, good practices in agriculture and natural resource management and alternative tourism will also contribute significantly to the achievement of this expected outcome.

102. The outputs to be delivered by the project to achieve this outcome are the following:

- Degraded lands reforested.
- Degraded lands and ecosystems rehabilitated or in the process of rehabilitation in the project´s intervention area.
- Knowledge and information on lama-bordo agricultural systems for soil conservation, improved productivity and the cultivation of native plants traditionally used that contribute to improved family nutrition.
- Knowledge and information on cultivation of traditionally used native plants that contribute to improved family nutrition particularly through the use of lama-bordo agricultural systems.
- 5 pilot demonstration projects for (1) rehabilitating lama-bordo systems, (2) testing, monitoring and demonstrating the use of lama-bordo production techniques and their compatibility with sustaining ecosystem services and (3) training local producers in the restoration of lama-bordo terraces and in the application of lama-bordo agricultural practices, including the use of traditional native crops.
- Trained local producers in the use of lama-bordo techniques.
- Utilization of fuelwood efficient stoves in ten communities, including the establishment of fuelwood plantations based on native species.

103. *Expected outcome 3.3: Improved land use planning and management practices lead to increased habitat connectivity for globally significant biodiversity within the project intervention area as monitored under outcome 1.2.* [*GEF funding - $695,017; cofinancing - $1,786,131*] One of the main problems facing the region is the fragmentation of the landscape, a main challenge being to maintain forest cover and encourage the construction of biological corridors. A major focus of this component is the creation of a network of voluntary reserves, including biological corridors connecting protected areas with well-preserved ecosystems that reinforce the protection and maintenance of key ecosystem services throughout the project's intervention area. These reserves will be complemented by contiguous agroecological zones utilizing good practices in agriculture and natural resource management that will also function as buffers. Inextricably linked to the establishment of these voluntary reserves and the development of sustainably managed agroecosystems will be the development and implementation of a sustainable tourism strategy and plan based on the Oaxacan Mixteca's rich biodiversity, unique agroecosystems, the natural beauty of its landscapes and rich culture, which is one of the best alternatives to promote economic and social development. For additional details on the potential of alternative tourism, please see Appendix 17.

104. At the time that the project was approved in its concept stage (PIF), the size of the area to be addressed by this component had not been precisely determined. It was noted that the potential area could cover close to 500,000 hectares, and that the area of influence for improved habitat connectivity includes more than half a million hectares of well preserved forests and approximately 350,000 hectares of secondary forests. Some of these forests are two to three decades old and are beginning to provide habitat corridor formation that effectively connects preserved forests and protected areas. The project aims to strengthen the status of these corridors by granting them an improved protection status as "voluntary reserves" with the formal agreement of participating communities and through CONANP's experience in other areas of Oaxaca State. This could be achieved since the stakeholders would attain more sustainable livelihood options derived from the sustainable use of ES inside and around the CONANP protected area system, allowing them to leave untouched or under sustainable use protocols an increasing number of areas relevant to biodiversity.

105. The outputs to be delivered by the project to achieve this outcome are the following:

- Identification in consultation with priority communities potential Community Conservation Areas that could be certified as Areas Voluntarily Destined for Conservation (AVDCs);
- Identification in consultation with priority communities of areas for the establishment of biological corridors connecting protected areas with well preserved forests;
- Application of environmentally sound land use plans developed under project component 2 in the establishment of AVDCs and biological corridors.
- Network of certified Areas Voluntarily Destined for Conservation.
- Biological corridors connecting protected areas with well preserved forests.
- Certification process for establishing AVDCs.
- Certification process for producers within biological corridors applying the ES approach.
- Management plans for AVDCs.
- Management plans for biological corridors.
- Trained local stakeholders participating in the implementation of management plans for AVDCs and biological corridors.

Component 4: Outreach and dissemination. [*GEF funding - $860,000; cofinancing - $843,250*]

106. The objective of this component is the systematization and dissemination of lessons learned from the operation of the project, as a means to increase impact at the level of the Mixteca region. An

inventory of ES materials during the project preparation phase found that very little of practical use has been disseminated to state and federal decision makers, stakeholders and the public.

107. *Expected outcome 4.1*: *Project findings, tools and methodologies made available to state and federal decision makers as well as the public and relevant interest groups.* [*GEF funding - $860,000; cofinancing - $805,750*] This outcome will systematize lessons learned in this project for dissemination to other projects, programs and areas, further contributing to the upscaling and sustainability of impacts under CONANP's leadership and strengthening their position to extrapolate lessons learned at the institutional level. This process will be strategically supported drawing from UNEP's knowledge management background and under UNEP's specialized technical guidance. This outcome will also provide the tools to widen the project impact in geographic scope from the project intervention area to the wider Mixteca of Oaxaca and surroundings. The scenario after the project will find improved capacities for biodiversity conservation through the dissemination of materials and a replication strategy with training of relevant staff and decision makers in key production sectors at state and federal levels.

108. The outputs to be delivered by the project to achieve this outcome are the following:

- Systematization of methodologies and tools developed by the project, as well as results and findings.
- Outreach and dissemination strategy for upscaling of project impact based on the systematization of project tools, methodologies, results and findings.
- Information materials on project findings, tools and methodologies for (1) state and federal decision-makers, (2) stakeholders and (3) the public.
- Educational and public awareness materials on the provision of ecosystem services to productive sectors in the Mixteco language.
- Tool kit for the application of ES tools and methodologies for decision-makers at the state and federal levels.
- Tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities.

109. *Expected outcome 4.2*: *Coordination and cooperation established with synergic initiatives and other projects.* [*GEF funding - 0; cofinancing - $37,500*] This outcome will ensure that the project is well connected with parallel interventions within UNEP's extensive expertise in this field, thus making the most of learning opportunities while avoiding that the same efforts are being unnecessarily repeated by either initiative. It will be achieved in part by establishing the necessary communication and reporting link with UNEP's Ecosystem Management Program (EMP) to draw from advances and lessons of the program and the cluster of associated projects, while at the same time providing feedback. Thus a basis for subsequent networking between involved stakeholders in the Mixteca and other ES initiatives at the regional and global level will be established under the continued support of UNEP in this area of expertise. Coordination efforts at the project management level on the other hand will be set forth by project personnel as per their terms of reference, with the main responsibility falling in particular on the full time project coordinator. As such, under this outcome the systematic coordination of the project to foster synergies, avoid duplication of efforts and exchange experiences with known related initiatives and others that may be emerging during the lifetime of the project will be carried out. At the institutional level, similar engagement is expected from the UNEP Task Manager and project partners such as CONANP, WWF and others linking into their respective portfolios of initiatives with synergic potential. The knowledge gained through this process will in turn feed the project's systematization and upscaling process as well as the outreach and dissemination strategy under outcome 4.1. Finally, enhanced conservation and sustainable use of biodiversity

worldwide can be expected as a consequence of this project being linked into the institutional wealth of knowledge and as a result of UNEP programmes and projects that incorporate the findings and lessons learned from the GEF Mixteca project.

110. The outputs to be delivered by the project to achieve this outcome are the following:

- Ongoing systematic consultations and coordination with related and synergic initiatives and with UNEP's Ecosystem Management Program
- Platform for community of practice including web space established to share lessons and develop joint outputs

Component 5: Monitoring and evaluation. [*GEF funding - $130,000; cofinancing - $550,000*]

111. The fifth component reflects proper planning and budgeting of the project's monitoring and evaluation of progress and impact following standard GEF and UNEP procedure. For more details, please see Section 6 and Appendix 7.

Component 6: Project management. [*GEF funding - $590,000; cofinancing - $1,025,465*

112. The sixth component includes standard project management planning and budgeting. For more information please refer to the detail reflected in the project workplan and timetable in appendix 5 as well as the project budget.

3.4. Intervention logic and key assumptions

113. The removal of barriers will include the creation of systemic capacities at the local and national decision-making levels that will help to better integrate biodiversity and ecosystem service conservation principles into broader policy and regulatory frameworks of the productive and social sectors for land use planning and policy design. At the same time, the project will remove barriers related to inadequate valuation data on biodiversity and ES to ensure that the scientific and technical basis regarding ES is translated into productive protocols that contribute to natural resource conservation and sustainable use whilst promoting ecosystem integrity. The project expects to achieve its stated objective through the following outcomes:

- 1.1: Stakeholders and decision makers at state and local level have increased access to Ecosystem Services tools applicable to biodiversity conservation and sustainable use

- 1.2: Natural Resources, ecosystem services and biodiversity in the project intervention area are assessed, valued and monitored using the new ES tools and knowledge provided through the project
- 2.1: Biodiversity and ES considerations are integrated into state and federal support programs and land use planning

- 3.1: Local stakeholders apply the ecosystem approach for planning and implementation of productive activities and biodiversity conservation

- 3.2: The supply of key Ecosystem Services is secured, improving ecosystem resilience and leading to improved livelihoods

- 3.3: Improved land use planning and management practices lead to increased habitat connectivity for globally significant biodiversity within the project intervention area as assessed and monitored under outcome 1.2

- 4.1: Project findings, tools and methodologies made available to state and federal decision makers as well as the public, and relevant interest groups

- 4.2: *Coordination and cooperation established with synergic initiatives and other projects*

114. The in-cash co-financing for this project by national counterparts is substantial and the scope of this project is based on the assumption of the availability of these funds. The success of the project also assumes the good will of a large number of players at the federal, state and local levels to pool their efforts in a concerted manner in order to achieve the project's goal and objective. The proactive participation of local stakeholders, particularly farmers and local communities, is indispensable for successful project implementation. Critically important is the assumption that local stakeholders well be receptive to the ecosystem approach, including the application of GAP and GNRMP, in their productive activities and will be open to new approaches for marketing their products.

115. Key assumptions for the project are:

a. Stakeholders and decision-makers are receptive to incorporating ES tools in land use and development planning.
b. Relevant institutions are committed to incorporating the assessment, valuation and monitoring of ES tools and knowledge into their work programs.
c. Institutions are willing to share information on their activities and investments, as well as relevant basic information
d. Political good will of relevant federal and state organizations to integrate ES considerations into support programs and land use planning.
e. Willingness of relevant federal and state organizations to utilize environmental, biodiversity and ES indicators for assessing agricultural projects in the project's intervention area, particularly as they relate to GAP and good practices for natural resource management
f. Interest on the part of local authorities and communities to integrate ES considerations into their work
g. State and local authorities and local organizations are open to receiving capacity building in the integration of the ecosystem approach for planning and implementation of productive activities and biodiversity conservation
h. Local communities and federal, state and local authorities can agree to work together in the establishment and implementation of the pilot demonstration projects
i. Local communities are open to the possibility of establishing voluntary Community Areas for Conservation and biological corridors.

3.5. Risk analysis and risk management measures

116. Project design addresses risks affecting institutional sustainability, as well as social and financial sustainability. Please refer to Section 3.8 on Sustainability. Additional risks to the project along with measures to be taken to manage these risks are described in the following table.

Table 5: Project Risks and Corresponding Mitigation Measures

Risk	Rating	Mitigation Strategy
Mexico's rural support programs are	**M**	The project shall devise a strategy to prepare for

managed under different allocation lines of one integrated national budget and thus disbursements may experience delays that would affect primarily activities following the agricultural calendar.		possible funding delays from one source conceivably using the resource mix available through co-financing.
The high migration rate of young and adult men in economically active age groups diminishes the traditional stakeholder base at the project intervention sites.	**M**	The project have a gender and social safeguards focus, will include among its beneficiaries groups of women, elderly persons and youth, focusing on sustainable livelihood activities that are compatible with their capacities and the environment.
Varying project ownership among local stakeholder communities.	**L/M**	The project proposes a participatory approach at the grass roots level reaching out to Mixteca communities. Within the ecosystem approach, the application of indigenous knowledge will be highlighted alongside the tools prepared under component 1 and 2 and translated into profitable, sustainable livelihood alternatives for the target population.
Market fluctuations and barriers that hinder the accessibility of goods and services that are produced utilizing the ecosystem approach, including GAP and GNRMP.	**M**	Through the project, local producers and stakeholders will be provided technical support for marketing goods and services produced by GAP and GNRMP. Involvement of marketing specialists experienced in certification systems will be sought.
Perceived security problems at the national level will discourage tourism, affecting the implementation of an alternative tourism strategy for the Oaxacan Mixteca.	**L**	Ecotourism in Mexico has increased significantly during the past decade, particularly tourism directed at natural protected areas. The number of ecotourists from 2002 to 2005 reached 20 million, spending approximately US$400 million. However, ecotourism is at an incipient stage in Oaxaca. Given the Mixteca region's diverse ecosystems and high degree of biodiversity, it is very likely that the alternative tourism strategy can contribute to the growth of an important sector and source of income in the region.
Extreme weather conditions associated with soil erosion and water shortage problems (flooding and drought) are exacerbated by climate change.	**L**	The project's intervention strategy is based on an ecosystem approach. The resulting increase in ecosystem resilience (water conservation, soil stabilization, miroclimate regulation) will go a long way in sustainably providing stakeholders with a more solid foundation to withstand any extreme climatic events, such as droughts and flooding which may be exacerbated by climate change. Although no significant external risks

		derived from the consequences of climate change are foreseen to jeopardize the success of the proposed intervention, climate adaptation and vulnerability assessments will be made by the project to stay abreast of any potential associated problems or limitations.

Rating: H: High; M: Medium; L: Low

3.6. Consistency with national priorities or plans

117. Mexico signed the Convention on Biological Diversity on 13 June 1992 and ratified it on 11 March 1993. The project is fully aligned with Mexico's NBSAP[10] in its four strategic lines: 1. Protection and Conservation, through the fostering of consolidated *in situ* protection and conservation initiatives and intensifying the actions aimed at rescuing, rehabilitating and recovering ecosystems, communities and species; 2. Valuation of biodiversity, reclaiming its value and cultural importance in scientific, social and economic terms; 3. Knowledge and information management on ecosystems, species and varieties through the rescuing of traditional knowledge, support to assessments and research and the implementation of dissemination activities, promoting public awareness and comprehension of biodiversity importance; and 4. Diversification of biodiversity utilization, through the review of present use and fostering sustainable uses of biodiversity. Within the action plan, the most relevant alignment is with PROCODES as described in the baseline under section 2.6. In addition, this project is aligned with priority # 3 of Mexico's present UNDAF, in particular outcome 3.1: "Sustainable development principles mainstreamed in national and regional programmes, including equality and equity in natural resource use as well as the distribution of environmental costs and benefits." While the preparation periods for the present project and UNDAF period did not coincide, UNEP shall seize the next possible opportunity (revision or new UNDAF) for mainstreaming it into this planning context.

118. In addition to other specific national plans and strategies in alignment with the conservation objectives of the present project, first and foremost is the National Program for Natural Protected Areas. In relation to this project, what needs to be highlighted is the strive towards including sustainable development plans and projects aimed at the conservation and sustainable use of natural resources and biodiversity by fostering sustainable livelihoods in PAs and buffer zones primarily amongst indigenous people, including women and youth[11].

119. National initiatives which are aligned with the development objectives of this project are gathered under an inter-institutional instrument called "Special Concurrent Program for Rural Sustainable Development" (*Programa Especial Concurrente para el Desarrollo Rural Sustentable* (PEC)). This includes related programs from different government sectors and has a significant allocation in the yearly national budget. At least 16 of these PEC programs have direct or complementary bearing on the present project[12]. Of special relevance is the national support program implemented nationally by the National Forestry Commission (CONAFOR). The corresponding

[10] CONABIO, 2000. Estrategia Nacional sobre Diversidad de México. Comisión para el Conocimiento y Uso de la Biodiversidad, México (Págs. 31-50)

[11] The migration rate amongst males in working age for this region is extremely high.

[12] These include secretariats of Finance, Economics, Communications and Transportation, Agriculture, Fisheries and Nutrition, Public Education, Agrarian Reform, Social Security, Environment and Natural Resources, Social Development, Tourism, among others.

branch of this initiative for the State of Oaxaca will be contributing an important portion of this project's co-financing. A series of programs from the agricultural sector (SAGARPA) are also in place, aimed primarily at food security and poverty alleviation goals. Through this project, these investments will be included in a coherent conservation and sustainable production plan and thus channeled so as to maximize biodiversity conservation of global significance in Mixteca ecosystems. It is also noteworthy that the Federal Commission for the Development of Indigenous Peoples (CDI) has an important budget that boasts economic independence, and important additional investments could be leveraged by the project for the Mixteca region which is a priority area in Mexico of indigenous population groups.

120. Legislation relevant to the project includes the Ley General de Equilibrio Ecológico y Protección al Ambiente – 1988[13]; Ley de Desarrollo Rural Sustentable – 2001[14]; Ley de Aguas Nacionales – 1992[15]; and Ley General de Desarrollo Forestal Sustentable – 2003[16].

3.7. Incremental cost reasoning

121. The Mixteca ecosystem containing globally significant biodiversity finds itself under severe pressure from productive activities that overexploit the Ecosystem Services it provides. National authorities are trying to provide solutions for the social-economic aspects to address national and local priority issues, such as poverty alleviation and food security, with important financial resources earmarked for the area. Funds from many national programs are also available to be tapped, constituting an important baseline on which to build. Nonetheless, effective action that would ensure biodiversity conservation is not forthcoming because a set of barriers that include i) inadequate knowledge related to the management and provision of ES, ii) a lack of coherence and integrality of support programs and planning towards biodiversity benefits and iii) the limited capacity of CONANP and partners to upscale interventions for optimizing impact at the landscape level. The GEF increment would remove these barriers so that globally significant biodiversity could be more effectively conserved, taking advantage of significant baseline investments through the aforementioned strategic programs. In essence, the incremental reasoning is that if existing land use planning and support programs continue their present course, the focus will be on local benefits, such as poverty alleviation and food security, while biodiversity degradation would continue. The GEF investment will ensure that global environmental benefits are achieved by bringing biodiversity conservation to the forefront of existing and new poverty alleviation and food security programs.

122. The mosaic of actors is large and diverse, reflecting a field work with a high interest from government institutions, research and civil society. There is a high level of investment, since between at least six government departments have collectively injected upstream of 2 and a half thousand million pesos, in the last five years. The challenge is to capture part of those resources for the development of projects and processes that run with the concept conceived by the project, as well as lobby with other funding sources inside and outside of the Oaxaca State

123. This project will comply with Strategic Programme 4 (SP4) of Strategic Objective 2 (SO2) within the GEF focal area of Biodiversity, which has as one of its primary goals the maintenance of the ecosystem goods and services that biodiversity provides to society. In particular, this will be achieved by "*…removing critical knowledge barriers, developing institutional capacities, and establishing the policies, and the legislative and regulatory frameworks required to integrate*

[13] General Law of Ecological Stability and Protection of the Environment.
[14] Sustainable Rural Development Law.
[15] Law of National Waters.
[16] General Law of Sustainable Forest Development.

biodiversity conservation and sustainable use objectives into the actions of the production sectors …" As such, the GEF increment will foster the achievement of global environmental benefits by complementing existing programs for poverty alleviation, food security and sustainable development with substantial national financing as described above in section 3.6.

3.8. Sustainability

124. Project sustainability will be achieved through different avenues.

- First, it is expected that federal, state and local authorities participating in project implementation will mainstream biodiversity conservation and ES tools in their work programmes, strategies and plans (Component 1 and 2).

- Second, capacity-building activities in ES tools and methodologies will help build the necessary knowledge foundation and expertise to continue to further develop, refine and apply ES tools and methodologies by participating federal, state and local authorities, as well as stakeholders (Component 2 and 3).

- Third, through the project's replication strategy, findings, including lessons learned, and the tools and methodologies developed and applied will be disseminated to other projects, programs and areas in the country for replication (Component 3 and 4).

- Fourth, by improving the livelihoods of local communities, including indigenous people, through improved productivity and alternative tourism, it is expected that ES tools and methodologies, as well as good practices in agriculture and natural resource management, will continue to be practiced, refined and further developed, particularly if the necessary technical support and follow-up continues to be provided by participating federal, state and local authorities and stakeholder organizations (Component 2 and 3).

- Finally, the establishment of a network of voluntary reserves and biological corridors connecting protected areas with well-preserved forests will serve as a key element of a strategy for the long-term conservation and sustainability of the region's biodiversity (Component 3).

125. The involvement of a wide range of stakeholders, including private sector groups such as farmers organizations, hotel operators, investment firms, tour operators and NGOs in the pilot activities as well as in the dissemination of information about project findings and lessons learned will have a multiplier effect and will contribute to wider sustainability.

126. The successful development of alternative tourism for the Oaxacan Mixteca based on its biological diversity, natural attractions and agro-ecosystems will help improve the livelihoods of many members of local communities and at the same time help sustain the utilization, refinement and further development of ES tools and methodologies and good practices in agriculture and natural resource management.

3.9. Replication

127. Under the fourth project component described in section 3.3, a replication strategy will be designed for dissemination of the lessons learned in this project to other projects, programs and areas, which will also contribute to the project's sustainability.

128. One of the major challenges that the project will face is the development of local capacities and thus it will foster alliances with relevant organized groups of civil society that have the technical capacity and are available to transmit their knowledge, track them and form local technicians who can give continuity to the work. Within that set of allies, a more precise identification of those with capabilities to respond to the needs of each of the pilot programs will have to be undertaken. The development of operation and organization formats at the micro-regional level i.e. at sites where pilot programmes will be developed is pending, since this will mean working with different agrarian, municipal authorities, civil organizations and Government agencies. In each case or micro-region the establishment of interagency working groups with strong participation of local stakeholders will be essential for well developed processes and for making accountability to beneficiaries and donors as transparent as possible.

129. Project components cover key issues that are faced through much of Mexico, as well as by several countries in Central and South America. Pilot demonstration projects in particular will involve monitoring and analysis that will enable replication of these activities. Policies, plans and strategies developed through the project will also serve as examples for other countries to replicate. Innovations such as the development of ES tool kits directed at federal and state authorities, local authorities and local communities, including indigenous peoples, can also be replicated.

3.10. Public awareness, communications and mainstreaming strategy

130. Public awareness and communication are an integral part of this project, particularly since reaching and persuading local communities, including indigenous people, about the importance and value of the project is key to its success. A communications strategy aimed at a broad range of potential beneficiaries will be developed to aid in (i) informing about the importance of ecosystem services, (ii) promoting the use of ES tools and methodologies, (iii) disseminating information on project activities related to good practices in agriculture and natural resource management, (iv) strengthening and expanding the conservation of the region's biodiversity and (v) raising awareness of the potential socioeconomic benefits for the region's inhabitants.

131. Pilot demonstration projects will all involve awareness-building of options and opportunities for improving the productivity of ecosystems and agro-ecosystems and for strengthening the conservation of the region's biodiversity and the management of its protected areas. This will include the development of public awareness information and education materials directed at local stakeholders that can be used to help in biodiversity conservation, better management of natural resources, increased productivity of agro-ecosystems and rehabilitation of degraded ecosystems.

132. Tools for achieving increased awareness and communications will include:

- Regular communication and meetings with partner agencies and stakeholders involved in the implementation of project components;
- Reporting to key government agencies and bodies;
- Public availability of project deliverables including maps, briefings, and training manuals, among others;
- Community meetings and school presentations, particularly for updates on pilot demonstrations and presentations on deliverables once completed;

- As part of Component 4, a communications strategy, including dissemination of knowledge management developed and implemented with the added intent of highlighting the achievements of successful demonstration projects.

133. As indicated in section 3.8. on sustainability, it is expected that federal, state and local authorities participating in project implementation will mainstream biodiversity conservation and ES methodologies and tools in their work programmes, plans and strategies. The alternative tourism pilot project will involve mainstreaming biodiversity into the tourism sector while also increasing local community awareness of the need for, and benefits from, protected areas and biodiversity conservation.

3.11. Environmental and social safeguards

134. The Project has been designed to have positive environmental and social impacts by effectively integrating biodiversity conservation and ES methodologies and tools in the work programmes, plans and strategies of federal and state agencies and stakeholder organizations, establishing a complimentary network of voluntary reserves and biological corridors in support of the region's protected areas and the various pilot demonstrations. The sustainable tourism pilot demonstration project will also provide new livelihood opportunities, involving local communities neighbouring the protected areas, voluntary reserves and biological corridors that are the focus of the project's intervention area. During implementation of the pilot ecotourism project the stakeholders will keep an account on any gender ramifications. For example, any differential incomes between men and women arising from the pilot will be tracked; likewise formation of corridors or reserves may favour one gender's activities over the other and if so, mitigation of such ramifications will be instituted as part of adaptive management of the project.

135. Perceived negative impacts for some project interventions may be the apparent reduction in the use of available natural resources as a result of the establishment of voluntary reserves and biological corridors. This perception however will be addressed by the project through a) fostering an increased awareness of the overall social, economic and environmental benefits provided by enhanced ecosystem services to various sectors of the Oaxacan Mixteca region, including agriculture, forestry, animal husbandry, water supply, energy and alternative tourism; and b) presenting and demonstrating livelihood alternatives that noticeably offset the foregone loss of use of the voluntary reserves' resources. These alternatives will be systematically included in the land use planning frameworks that the project will set forth at the landscape level to include both the reserves and productive areas for the target population. The resources to make this feasible are included in the project budget under different outcomes.

136. Increased skills for CONANP, CONAFOR, SEMARNAT, SAGARPA and SECTUR personnel and other beneficiaries will enable monitoring and evaluation of project interventions during the project and beyond the project life cycle. This can enable adjustments to interventions if unforeseen negative impacts occur and thus provide opportunities for adaptive management, which is key in promoting sustainable development and managing protected areas.

137. All stakeholders (see Section 2.5 and Table 3 of the stakeholder analysis) were involved in the project design, which was indispensable in taking into account the concerns and needs of project partners and beneficiaries. The involvement of partners and stakeholders, including local communities, indigenous peoples and women, is assured through the Project Steering Committee, its Advisory Panels and the Stakeholder Advisory Committee as part of project implementation arrangements. The Project Steering Committee will monitor and assess project implementation and, as

required, will propose the necessary revisions, modifications and adjustments needed to correct any negative impacts that may emerge.

138. To this end, the project will also put in place a monitoring and evaluation system with the objective of providing timely feedback on project implementation and performance. This will enable the implementation team, in consultation with the PSC, to practice adaptive management to address and prevent negative issues as they arise, strengthening both the environmental and social outcomes, as well as the sustainable achievement of the project's objective and outcomes.

SECTION 4: INSTITUTIONAL FRAMEWORK AND IMPLEMENTATION ARRANGEMENTS

INSTITUTIONAL ARRANGEMENT:

139. UNEP is the GEF Implementing Agency for this project following a request by the Government of Mexico through the National Commission of Protected Natural Areas (CONANP). The project execution partners are CONANP, the National Forestry Commission (CONAFOR) and the World Wildlife Fund (WWF). CONANP and CONAFOR are the main institutional representatives of national ownership of the project and their tasks will cover involvement in technical aspects as well as the mainstreaming of biodiversity at policy level. WWF-Mexico will be charged with project administration through its national and local offices in Mexico City and Oaxaca respectively, while also contributing to technical aspects in the field.

140. The present proposal is focused on some of UNEP's core competencies, such as scientific and technical analysis as well as technical assistance for the assessment and monitoring of ecosystem services and their integration into land management policies and planning. As such it is closely aligned and integrated within UNEP's broader Ecosystem Management Program (EMP). UNEP's EMP includes a wide range of issues, some of which are addressed through this project, such as i.e.: the promotion of knowledge about the interdependence of ecological operational tools and livelihoods; use of methodologies of working models for use by policy-makers to analyze ecosystem services and their trade-offs with development policies and resource allocations; defining convincing economic values of ecosystem services and, in particular, of the regulating and cultural services which could be used to evaluate the trade-offs with conventional development strategies; and periodic assessments of the status of ecosystem services to monitor and track changes in those services and their impacts on human well-being.

141. Ecosystem Management stands among the Strategic Priority Thematic Areas in the Program of Work under UNEP's Medium Term Strategy 2010-2013. UNEP's Division for Environmental Policy Implementation (DEPI) is the focal point for the coordination of the Ecosystem Management Programme, and has the mandate to provide technical input to all other UNEP divisions. This set-up ensures an increased level of cooperation and coordination between UNEP divisions. The UNEP DGEF and DEPI are working closely to ensure the continuous exchange of know-how and cross-fertilization among all UNEP projects focusing on the ecosystem approach. This is achieved through regular inter-divisional meetings and established close collaboration between DGEF and DEPI staff based in Nairobi as well as interactions with project Task Managers worldwide on specific projects. UNEP's EMP includes a wide range of interventions with different emphases, including i.a. Payment for Ecosystem Services (PES), mainstreaming for policy support, ES assessment-valuation-monitoring, as well as other tier/component or combination thereof, all slated to provide critical feedback to the EMP. This set-up maximizes complementarities between projects, streamlining their contribution into the EMP, and is set to generate a critical mass of experiences from a diversity of geographic, environmental, technical, political and socio-economical settings.

PROJECT IMPLEMENTATION ARRANGEMENT:

142. The project will establish a Project Steering Committee (PSC) consisting of CONANP, CONAFOR and WWF-Mexico as executing partners, and UNEP as GEF implementing agency. CONANP and CONAFOR as executing partners and WWF-Mexico as national executing agency have spearheaded the development of the project and, as members of the Steering Committee, will play the lead role in implementing and monitoring the project and maintaining its strategic focus. Presided by UNEP, the PSC will be responsible for providing guidance to the execution of project activities,

including reviewing and advising on the main outputs of the FSP, ensuring that the Government's environmental policy is fully reflected in the FSP, ensuring effective communication and decision-making, and assisting with mobilization of expertise as needed for proper execution of FSP outputs. On an annual basis the PSC will meet to fulfill steering mechanism responsibilities including: oversight of project implementation, monitoring of project progress, strategic and policy guidance and to review and approve annual work plans and budgets. Responsibilities of the PSC are detailed in appendix 11 of the project document.

143. Lead by CONANP, the executing partners will work together as a team on the management of the National Project and meet at least on a quarterly basis. As the project National Executing Agency (NEA), WWF-Mexico will be responsible for implementing the project in accordance with the components outlined in Section 3 of the project document. A further description of its responsibilities is provided in Appendix 11 of the project document. UNEP, as the GEF implementing agency, will be responsible for overall project supervision to ensure consistency with GEF and UNEP policies and procedures, and will provide guidance on linkages with related UNEP and GEF funded activities. UNEP will monitor implementation of the activities undertaken during the execution of the project and will be responsible for clearance and transmission of financial and progress reports to the GEF. Appendix 10 of the project document includes a decision-making flowchart and organizational chart for FSP implementation. Responsibilities of the NEA are detailed in appendix 11 of the project document.

144. WWF-Mexico will cooperate with UNEP so as to allow the organization to fulfill its responsibility as implementing agency accountable to the GEF. To this end, free access to all relevant information will be provided by WWF-Mexico. The NEA will also convene the Project Steering Committee and, in consultation with CONANP, appoint a National Project Coordinator (NPC). In conjunction with the NPC, WWF-Mexico in consultation with CONANP will establish reporting guidelines for all partners and specialists and ensure that they submit quality reports. The NEA and NPC will collaborate to prepare semiannual progress reports, quarterly financial reports and annual summary progress reports for UNEP.

145. The NPC will be responsible for coordinating, managing and monitoring the implementation of the FSP conducted by the local and international experts, consultants, subcontractors and implementing partners. The NPC will also coordinate and oversee the preparation of the FSP outputs, manage FSP finances, oversee overall resource allocation, and, where relevant, submit proposals for budget revisions to the PSC and UNEP. Detailed responsibilities of the NPC are detailed in appendix 11 of the project document.

146. The conceptualization of this project is the product of the collective efforts of CONANP, CONAFOR and WWF-Mexico who, with the support of UNEP, have committed themselves to the mainstreaming of the ecosystem approach in social and economic support programs in the Oaxacan Mixteca to the benefit of biodiversity conservation. Other actors that will play roles in project implementation include the Secretariat of the Environment and Natural Resources (SEMARNAT), the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), the Secretariat of Rural Development (SEDER), the Secretariat of Social Development (SEDESOL), the Secretariat of Tourism (SECTUR), the Secretariat of Government (SEGOB), the National Commission for the Development of Indigenous Peoples (CDI) and the National Biodiversity Commission (CONABIO). Key state and local actors include the State Committee for Development Planning (COPLADE), municipalities in the project's intervention area and academic and research institutions such as the Technological University of the Mixteca (UTM), as well as civic groups, including the Committee of the Rio Mixteco Watershed, the Regional Natural Resources Committee of the Central Zone of Huajuapan de Leon (CORRENAC) and Regional Natural Resources

Committee of the Mixteca Tlaxiaco-Putla-Juxtlahuaca, A.C., migrant organizations, women's organizations and private sector groups.

147. The project will establish a regional Inter-institutional Working Group to support the integration of biodiversity and ES considerations in state and federal support programs and land use planning in the project's intervention area. To this end, a workplan for the regional Inter-institutional Working Group in support of the project will be developed. In addition, for the pilot demonstration projects, activities will be facilitated through Project Site Teams (PSTs) to ensure broad involvement of local communities and key stakeholders, proper planning, and broader consultations with a wide range of agencies, NGOs and key private sector groups, such as farmers, forest owners and hotel and tour operators.

148. The establishment of a Project Stakeholder Advisory Committee (PSAC) will provide a platform for broader on-going consultations with a wide range of local community representatives, civic groups and private sector representatives on project implementation.

SECTION 5: STAKEHOLDER PARTICIPATION

149. The main stakeholders are listed in Section 2.5. They include government agencies, academic and research institutions, civic organizations and the private sector. A number of experts were also involved in the project, either providing in-kind contributions to the project or serving as consultants for the project. These were identified during the PPG phase of the project.

150. The overall implementation and execution arrangements for the FSP were developed in consultation with stakeholders for effective coordination of project activities at the national level as well as to enable involvement of regional and international experts. During the PPG phase, stakeholders were engaged in the collection of baseline data needed for the design of the FSP. Consultations were also held on pilot demonstration project site selection criteria, design and costing, as well as consideration of indicators for measuring progress towards the achievement of the project's objective and expected outcomes. Although a wide range of stakeholders were involved in the project design, PSC members (CONANP, CONAFOR, WWF and UNEP/DGEF) were most active.

151. Not all stakeholder groups have the same level of participation in the project, the same interest, nor the same obligation to influence the work area. The one most interested and committed to the project should be direct land owners within the project area. The next in terms of responsibility level should be the ones entrusted with public mandates on directly involved areas, i.e. agrarian representatives and municipal authorities.

152. The stakeholders who follow in degree of responsibility regarding what happens in the field of action, are groups constituted by land owners, which can take different forms: civil associations, regional committees, work groups, etc. They can work on a theme or on several; also, the members may belong to a single locality, multiple or different municipalities. Another type of groupings is mixed, not only attended by land owners, but also by municipal authorities as well as State and federal government entities. These can take the form of watershed committees or working groups on a specific subject. In general they are constituted to address regional matters, involving different municipalities and communities, but they can also be restricted to the local level, when the topic or issue at hand calls for it.

153. Key stakeholders, mainly PSC partner agencies, actively participated in providing inputs to project formulation, agreeing on the national organizational structure for project implementation and also the budgetary requirements for successful implementation of activities. Additional co-finance both in kind and in cash is being sought to support FSP activities.

154. The establishment of a Project Stakeholder Advisory Committee (PSAC) will provide a platform for broader on-going consultations with a wide range of local community representatives, civic groups and private sector representatives on project implementation.

155. For the pilot demonstration projects, activities will be facilitated through Project Site Teams (PSTs) to ensure broad involvement of local communities and key stakeholders, including indigenous peoples and women, proper planning, and broader consultations with a wide range of agencies, NGOs and key private sector groups, such as farmers, forest owners and hotel and tour operators.

SECTION 6: MONITORING AND EVALUATION PLAN

156. The project will follow UNEP standard monitoring, reporting and evaluation processes and procedures. Substantive and financial project reporting requirements are summarized in Appendix 8. Reporting requirements and templates are an integral part of the UNEP legal instrument to be signed by the executing agency and UNEP.

157. The project M&E plan is consistent with the GEF Monitoring and Evaluation policy. The Project Results Framework presented in Appendix 4 includes SMART indicators for each expected outcome as well as mid-term and end-of-project targets. These indicators along with the key deliverables and benchmarks included in Appendix 6 will be the main tools for assessing project implementation progress and whether project results are being achieved. The means of verification and the costs associated with obtaining the information to track the indicators are summarized in Appendix 7. Other M&E related costs are also presented in the Costed M&E Plan and are fully integrated in the overall project budget.

158. The M&E plan will be reviewed and revised as necessary during the project inception workshop to ensure project stakeholders understand their roles and responsibilities vis-à-vis project monitoring and evaluation. Indicators and their means of verification may also be fine-tuned at the inception workshop. Day-to-day project monitoring is the responsibility of the project management team but other project partners will have responsibilities to collect specific information to track the indicators. It

is the responsibility of the Project Manager to inform UNEP of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

159. The project Steering Committee will receive periodic reports on progress and will make recommendations to UNEP concerning the need to revise any aspects of the Results Framework or the M&E plan. Project oversight to ensure that the project meets UNEP and GEF policies and procedures is the responsibility of the Task Manager in UNEP-GEF. The Task Manager will also review the quality of draft project outputs, provide feedback to the project partners, and establish peer review procedures to ensure adequate quality of scientific and technical outputs and publications.

160. At the time of project approval 50 percent of baseline data is available. Baseline data gaps will be addressed during the first year of project implementation. A plan for collecting the necessary baseline data is presented in Appendix 7. The main aspects for which additional information are needed are on the current distribution of biodiversity and ecosystem services, particularly in the project's intervention area. In addition, already existing baseline data and new baseline information generated under this project will have to be analyzed and interpreted so that comprehensive land use plans applicable to the project's intervention area can be elaborated. Baseline information on the surface area of degraded lands, farmlands and ecosystems within the project's intervention area are required. Baseline data on the location, extent, distribution and state of existing and abandoned *lama-bordo* agricultural lands also needs to be generated for use in land rehabilitation plans in the project's intervention area. Finally, an integrated analysis is needed of the kind of eco-tourism products envisaged in the first phases of project intervention in areas where tourist infrastructure is to be developed, including information on the numbers of tourists, the length of time they stay, where they come from and go on to and the kind of activities in which they can participate.

161. Project supervision will take an adaptive management approach. The Task Manager will develop a project supervision plan at the inception of the project which will be communicated to the project partners during the inception workshop. The emphasis of the Task Manager supervision will be on outcome monitoring but without neglecting project financial management and implementation monitoring. Progress vis-à-vis delivering the agreed project global environmental benefits will be assessed with the Steering Committee at agreed intervals. Project risks and assumptions will be regularly monitored both by project partners and UNEP. Risk assessment and rating is an integral part of the Project Implementation Review (PIR). The quality of project monitoring and evaluation will also be reviewed and rated as part of the PIR. Key financial parameters will be monitored quarterly to ensure cost-effective use of financial resources.

162. A mid-term management review or evaluation will take place halfway through the project's lifespan as indicated in the project milestones. The review will include all parameters recommended by the GEF Evaluation Office for terminal evaluations and will verify information gathered through the GEF tracking tools, as relevant. The review will be carried out using a participatory approach whereby parties that may benefit or be affected by the project will be consulted. Such parties were identified during the stakeholder analysis (see section 2.5 of the project document). The project Steering Committee will participate in the mid-term review and develop a management response to the evaluation recommendations along with an implementation plan. It is the responsibility of the UNEP Task Manager to monitor whether the agreed recommendations are being implemented.

163. An independent terminal evaluation will take place at the end of project implementation. The Evaluation and Oversight Unit (EOU) of UNEP will manage the terminal evaluation process. A review of the quality of the evaluation report will be done by EOU and submitted along with the report to the GEF Evaluation Office not later than 6 months after the completion of the evaluation. The standard terms of reference for the terminal evaluation are included in Appendix 9. These will be adjusted to the special needs of the project.

164. The GEF tracking tools are attached as Appendix 15. These will be updated at mid-term and at the end of the project and will be made available to the GEF Secretariat along with the project PIR report. As mentioned above the mid-term and terminal evaluation will verify the information of the tracking tool.

SECTION 7: PROJECT FINANCING AND BUDGET

7.1. Overall project budget

165. The overall project budget is presented in detail in Appendix 1 (budget by project components and UNEP budget lines) and Appendix 2 (co-financing by source and UNEP budget lines). The incremental cost necessary to achieve the Project objective and the corresponding global benefits is **US$15,688,530** of which **US$ 5,900,000** (38%) constitute the sum requested to the GEF. Co-financing amounts to **US$ 9,788,530** (62%). A summary of the GEF budget by outcome is shown in the following table:

Table 6: Project Budget by Components and Outcomes

Components/Outcomes	GEF	Co-finance
Component 1		
Outcome 1.1: Stakeholders and decision makers at state and local level have increased access to Ecosystem Services tools applicable to biodiversity conservation and sustainable use	524,000	714,000
Outcome 1.2: Natural Resources, ecosystem services and biodiversity in the project intervention area are assessed, valued and monitored using the new ES tools and knowledge provided through the project	776,000	-
Component 1 total	1,300,000	714,000
Component 2		
Outcome 2.1: Biodiversity and ES considerations are integrated into state and federal support programs and land use planning	1,100,000	506,000
Component 2 total	1,100,000	506,000
Component 3		
Outcome 3.1: Local stakeholders apply the ecosystem approach for planning and implementation of productive activities and biodiversity conservation	805,066	2,710,234
Outcome 3.2: The supply of key Ecosystem Services is secured, improving ecosystem resilience and leading to improved livelihoods	419,917	1,653,450
Outcome 3.3: Improved land use planning and management practices lead to increased habitat connectivity for globally significant biodiversity within the project intervention area as assessed and monitored under outcome 1.2	695,017	1,786,131
Component 3 total	1,920,000	6,149,815
Component 4		
Outcome 4.1: Project findings, tools and methodologies made available to state and federal decision makers as well as the public, and relevant interest groups	860,000	805,750
Outcome 4.2: Coordination and cooperation established with synergic initiatives and other projects	-	37,500
Component 4 total	860,000	843,250
Monitoring and Evaluation	130,000	550,000
Project Management	590,000	1,025,465
Grand Total	**5,900,000**	**9,788,530**

A summary of the GEF budget by year is shown in the following table:

Table 7: Project Budget by UNEP budget lines

			Expenditure by calendar year						
UNEP Budget Line			**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Total**
10	**PERSONNEL COMPONENT**		218,896	463,166	478,191	494,107	509,614	294,325	2,458,300
	1100	Project personnel	118,809	231,990	245,767	260,361	274,465	161,278	1,292,670
	1200	Consultants	68,750	165,000	165,000	165,000	165,000	96,250	825,000
	1300	Administrative Support	10,400	20,800	22,048	23,371	24,773	15,860	117,252
	1600	Travel on official business	20,938	45,376	45,376	45,376	45,376	20,938	223,378
20	**SUB-CONTRACT COMPONENT**		608,750	311,200	368,375	364,375	328,125	189,175	2,170,000
	2100	Sub-contracts (MOUs/LOAs for cooperating agencies)							
	2200	Sub-contracts (MOUs/LOAs for supporting organizations)	608,750	311,200	368,375	364,375	328,125	189,175	2,170,000
	2300	Sub-contracts (for commercial purposes)							
30	**TRAINING COMPONENT**		60,000	107,000	77,050	57,000	108,000	45,000	454,050
	3200	Group training	-	68,000	48,050	28,000	79,000	30,000	253,050
	3300	Meetings/Conferences	60,000	39,000	29,000	29,000	29,000	15,000	201,000
40	**EQUIPMENT AND PREMISES COMPONENT**		56,270	33,100	33,100	33,100	28,100	11,830	195,500
	4100	Expendable equipment	1,420	3,000	3,000	3,000	3,000	1,580	15,000
	4200	Non-expendable equipment	40,000	-	-	-	-	-	40,000
	4300	Premises	14,850	30,100	30,100	30,100	25,100	10,250	140,500
50	**MISCELLANEOUS COMPONENT**		69,410	149,630	217,380	56,380	67,380	61,970	622,150
	5100	Operation and maintenance of equipment	510	1,300	1,300	1,300	1,300	790	6,500
	5200	Reporting costs	37,300	114,650	191,400	50,400	31,400	33,000	458,150
	5300	Sundry	31,600	31,600	2,600	2,600	32,600	1,100	102,100
	5400	Hospitality and entertainment	-	-	-	-	-	-	-
	5500	Evaluation	-	2,080	22,080	2,080	2,080	27,080	55,400
99	**GRAND TOTAL**		1,002,326	1,066,096	1,177,096	1,010,962	1,041,219	602,300	5,900,000

7.2. Project co-financing

166. The co-financing committed for the project includes signed pledges from national partners as well as from global partners. A summary of the secured co-financing for the project is indicated in Table 7 below.

Table 8: Summary of Co-financing

Name of co-financier (source)	Classification	Type	Amount ($)
CONAFOR	National govt.	Grant	8,800,000
CONANP	National govt.	In-kind	195,465
CONANP	National govt.	Grant	693,065
WWF	International NGO	In-kind	100,000
Total co-financing			**9,788,530**

167. The current co financing included in the project budget only assumes the most conservative cost calculation that can be accurately reflected, i.e. includes only fully confirmed commitments at the time of proposal submission. During the preparation phase, the project partners have fostered relationships with other potential co-financing partners in the public and private sector. Additional funds have high probabilities of materializing as the project starts its implementation, however it was not considered appropriate to include these in the budget until uncertainties are eliminated and formal pledges are received:

Table 9: Potential Co-financing (amounts to be confirmed)

Name of co-financier (source)	Classification
Banca Monex	Dev.bank
CDI	National govt.
CONANP - COINBIO	National govt.
Fundación Alfredo Harp Helú	National NGO
Fundación Gonzalo Rio Arronte	National NGO
IICA	Intergov. org.
SAGARPA	National govt.
SEDESOL	National govt
SEP	National govt
SRA	National govt

7.3. Project cost-effectiveness

168. The cost effectiveness of this GEF intervention is based on making a single investment in a significant area and achieving the double benefit of generating improved livelihoods and simultaneously conserving important biodiversity.

169. In analyzing the project's cost effectiveness at this stage, two main aspects need to be considered. First, this project favors an approach that works towards small landholders' interests, using alternative land use practices and activities that improve yields and benefit the environment

while helping to ensure biodiversity conservation, rather than an approach based solely on rules and policing which by itself, although necessary, would have little substantial or cost effectiveness. Local benefits in terms of improved livelihoods/income will be generated through improved basic ES (water, soil, wood) in an area of 567,308 hectares. This concentration on productive activities will reduce encroachment by deforestation and slash and burn, thus allowing global benefits in terms of improved habitat connectivity to be achieved in the surrounding area of influence.

170. Second, in Mexico both the federal government and state and local authorities can potentially access ample fiscal funds to provide extensive although basic funding for rural/agricultural development, especially within the social sector for indigenous and other relegated groups. For a GEF intervention to co-finance a project within this scenario is particularly cost-effective because the relatively small investment in the GEF-UNEP specific STA and TA activities is strategically combined with substantial national incentives that through the project's leveraging and influence is redirected to contribute to biodiversity conservation-friendly activity. This would reach a large rural population within the Mixteca region in the State of Oaxaca and has the potential to be up-scaled by established capacities in CONANP and other counterparts to cover the entire ecosystem which includes parts of two other States, and to other similar social and agro-ecologic areas.

APPENDICES

To:	August 2015									Expenditure by calendar year					
UNEP Budget Line		1	2	3	4	5	6	Total	2010	2011	2012	2013	2014	2015	Total
10	**PERSONNEL COMPONENT**														
1100	Project personnel														
1101	Full-time National Project Coordinator	45,000	172,000	70,000			30,000	317,000	28,502	56,160	59,530	63,101	66,887	42,820	317,000
1102	Interinstitutional coordination specialist		45,000	59,000	40,000		45,000	189,000	17,455	33,270	35,267	37,383	39,626	26,000	189,000
1103	Resource mobilization specialist		185,000		85,000			270,000	23,920	47,840	50,900	53,900	56,963	36,477	270,000
1104	Project Technical Assistant			141,000				141,000	12,986	25,900	27,358	29,000	30,000	15,756	141,000
1105	Project Technical Assistant			141,000				141,000	12,986	25,900	27,358	29,000	30,000	15,756	141,000
1106	Secretary (bilingual)	36,000	51,000				18,700	105,700	11,000	19,000	20,000	21,100	22,500	12,100	105,700
1107	Contract officer						128,970	128,970	11,960	23,920	25,355	26,877	28,489	12,369	128,970
1199	**Sub-total**	**81,000**	**453,000**	**411,000**	**125,000**	**-**	**222,670**	**1,292,670**	**118,809**	**231,990**	**245,767**	**260,361**	**274,465**	**161,278**	**1,292,670**
1200	Consultants														
1201	Sociologist/Anthropologist		56,000	64,000				120,000	10,000	24,000	24,000	24,000	24,000	14,000	120,000
1202	Ecosystem services specialist	75,000	75,000					150,000	12,500	30,000	30,000	30,000	30,000	17,500	150,000
1203	Land use planning specialist	60,000	90,000					150,000	12,500	30,000	30,000	30,000	30,000	17,500	150,000
1204	Specialist in GAP and GNRMP		75,000	75,000				150,000	12,500	30,000	30,000	30,000	30,000	17,500	150,000
1206	GIS expert	60,000		60,000				120,000	10,000	24,000	24,000	24,000	24,000	14,000	120,000
1207	Legal expert in land use planning & develop.							-	-	-	-	-	-	-	-
1208	Website & information processing assistant	45,000						45,000	3,750	9,000	9,000	9,000	9,000	5,250	45,000
1209	Publicity and public awareness	71,250					18,750	90,000	7,500	18,000	18,000	18,000	18,000	10,500	90,000
1299	**Sub-total**	**311,250**	**296,000**	**199,000**	**-**	**-**	**18,750**	**825,000**	**68,750**	**165,000**	**165,000**	**165,000**	**165,000**	**96,250**	**825,000**
1300	Administrative Support							**0**							
1301	Administrative Assistant		21,000	8,250			88,002	117,252	10,400	20,800	22,048	23,371	24,773	15,860	117,252
1399	**Sub-total**	**-**	**21,000**	**8,250**	**-**	**-**	**88,002**	**117,252**	**10,400**	**20,800**	**22,048**	**23,371**	**24,773**	**15,860**	**117,252**
1600	Travel on official business														
1601	Local travel and subsistence	24,000	24,000	7,200			74,178	129,378	12,938	25,876	25,876	25,876	25,876	12,938	129,378
1602	International travel						14,000	14,000	-	3,500	3,500	3,500	3,500	-	14,000
1603	National travel				80,000			80,000	8,000	16,000	16,000	16,000	16,000	8,000	80,000
1699	**Sub-total**	**24,000**	**24,000**	**7,200**	**80,000**	**-**	**88,178**	**223,378**	**20,938**	**45,376**	**45,376**	**45,376**	**45,376**	**20,938**	**223,378**
1999	**Component total**	**416,250**	**794,000**	**625,450**	**205,000**	**-**	**417,600**	**2,458,300**	**218,896**	**463,166**	**478,191**	**494,107**	**509,614**	**294,325**	**2,458,300**
20	**SUB-CONTRACT COMPONENT**							**-**							
2100	Sub-contracts (MOUs/LOAs for cooperating agencies)							**-**							
2101								**-**							**-**
2102								**-**							**-**
2103								**-**							**-**
2199	**Sub-total**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2200	Sub-contracts (MOUs/LOAs for supporting organizations)							**-**							
2201	Further development of baseline data	72,000				45,000		117,000	48,750	68,250	-	-	-	-	117,000
2202	ES methodologies and tools	48,000						48,000	20,000	28,000	-	-	-	-	48,000
2203	Detailed ES studies in 10 micro-watersheds	60,000						60,000	20,000	40,000	-	-	-	-	60,000
2204	Detailed ES studies in priority ecosystems	40,000						40,000	20,000	20,000	-	-	-	-	40,000
2205	Project replication strategy				62,500			62,500			31,250	31,250			62,500
2206	Educational and information materials on project findings, tools & methodologies				20,000			20,000			15,000	5,000			20,000
2207	Pilot demo. project micro-watershed 1	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2208	Pilot demo. project micro-watershed 2	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2209	Pilot demo. project micro-watershed 3	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2210	Pilot demo. project micro-watershed 4	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2211	Pilot demo. project micro-watershed 5	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2212	Pilot demo. project micro-watershed 6	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2213	Pilot demo. project micro-watershed 7	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2214	Pilot demo. project micro-watershed 8	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2215	Pilot demo. project micro-watershed 9	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2216	Pilot demo. project micro-watershed 10	14,900		68,040				82,940		8,294	20,735	20,735	20,735	12,441	82,940
2217	Pilot demo project traditional farming 1			35,020				35,020		3,502	8,755	8,755	8,755	5,253	35,020
2218	Pilot demo project traditional farming 2			35,020				35,020		3,502	8,755	8,755	8,755	5,253	35,020
2219	Pilot demo project traditional farming 3			35,020				35,020		3,502	8,755	8,755	8,755	5,253	35,020
2220	Pilot demo project traditional farming 4			35,020				35,020		3,502	8,755	8,755	8,755	5,253	35,020
2221	Pilot demo project traditional farming 5			35,020				35,020		3,502	8,755	8,755	8,755	5,253	35,020
2222	Training state and local officials	15,000						15,000		15,000					15,000
2223	Training local farmers and stakeholders			33,000				33,000		-	11,000	11,000	11,000		33,000
2224	ES Monitoring program	150,000						150,000		27,000	30,000	36,000	36,000	21,000	150,000
2225	Marketing of products and goods generated by pilot demo projects			120,000				120,000		12,500	30,000	30,000	30,000	17,500	120,000
2226	Mixteca ES Fund capitalization		220,000		280,000			500,000	500,000						500,000
2299	**Sub-total**	**534,000**	**220,000**	**1,008,500**	**362,500**	**45,000**	**-**	**2,170,000**	**608,750**	**311,200**	**368,375**	**364,375**	**328,125**	**189,175**	**2,170,000**
2300	Sub-contracts (for commercial purposes)							**-**							
2301								**-**							**-**
2302								**-**							**-**

	2303								-								-
	2399	**Sub-total**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
2999	**Component total**		**534,000**	**220,000**	**1,008,500**	**362,500**	**45,000**	**-**	**2,170,000**	**608,750**	**311,200**	**368,375**	**364,375**	**328,125**	**189,175**	**2,170,000**
30	**TRAINING COMPONENT**								-								
	3200	Group training							-								
	3201	State and local officials	40,000						40,000		40,000						40,000
	3202	Local farmers and stakeholders	27,000		36,000				63,000		15,500	15,500	15,500	16,500			63,000
	3203	Stakeholders managing AVDCs/biol. corrid.			50,000				50,000		12,500	12,500	12,500	12,500			50,000
	3204	Ecotourism guides			20,050				20,050			20,050					20,050
	3205	Project replication training	20,000		20,000	40,000			80,000					50,000	30,000		80,000
	3299	**Sub-total**	**87,000**	**-**	**126,050**	**40,000**	**-**	**-**	**253,050**	**-**	**68,000**	**48,050**	**28,000**	**79,000**	**30,000**		**253,050**
	3300	Meetings/Conferences							-								
	3301	Project Steering Committee					40,000		40,000	4,000	8,000	8,000	8,000	8,000	4,000		40,000
	3302	Project inception workshop	15,000						15,000	15,000							15,000
	3303	Advisory Panel on ES	20,000						20,000	20,000							20,000
	3304	Advisory Panel on Alternative Tourism			20,000				20,000	2,000	4,000	4,000	4,000	4,000	2,000		20,000
	3305	Advisory Panels on other subjects	20,000						20,000	10,000	10,000	-	-	-	-		20,000
	3306	Interinstitutional Working Group		36,000					36,000	4,000	7,000	7,000	7,000	7,000	4,000		36,000
	3307	Interinstitutional Coordinating Committees in project intervention areas		50,000					50,000	5,000	10,000	10,000	10,000	10,000	5,000		50,000
	3399	**Sub-total**	**55,000**	**86,000**	**20,000**	**-**	**40,000**	**-**	**201,000**	**60,000**	**39,000**	**29,000**	**29,000**	**29,000**	**15,000**		**201,000**
3999	**Component total**		**142,000**	**86,000**	**146,050**	**40,000**	**40,000**	**-**	**454,050**	**60,000**	**107,000**	**77,050**	**57,000**	**108,000**	**45,000**		**454,050**
40	**EQUIPMENT AND PREMISES COMPONENT**								-								
	4100	Expendable equipment							-								
	4101	Office supplies for project management						15,000	**15,000**	1,420	3,000	3,000	3,000	3,000	1,580		15,000
	4102								-								-
	4103								-								-
	4199	**Sub-total**	**-**	**-**	**-**	**-**	**-**	**15,000**	**15,000**	**1,420**	**3,000**	**3,000**	**3,000**	**3,000**	**1,580**		**15,000**
	4200	Non-expendable equipment							-								
	4201	Computer, printer, projector, camera	18,000						18,000	18,000	-	-	-	-	-		18,000
	4202	Satellite imagery	22,000						22,000	22,000	-	-	-	-	-		22,000
	4203	Fuelwood efficient stoves							-								-
	4299	**Sub-total**	**40,000**	**-**	**-**	**-**	**-**	**-**	**40,000**	**40,000**	**-**	**-**	**-**	**-**	**-**		**40,000**
	4300	Premises	-						-								
	4301	Rental of meeting rooms	-					8,000	8,000	600	1,600	1,600	1,600	1,600	1,000		8,000
	4302	Rental of office space (Oaxaca)						92,500	92,500	9,250	18,500	18,500	18,500	18,500	9,250		92,500
	4303	Rental of office space in intervention area	-					40,000	40,000	5,000	10,000	10,000	10,000	5,000			40,000
	4399	**Sub-total**	**-**	**-**	**-**	**-**	**-**	**140,500**	**140,500**	**14,850**	**30,100**	**30,100**	**30,100**	**25,100**	**10,250**		**140,500**
4999	**Component total**		**40,000**	**-**	**-**	**-**	**-**	**155,500**	**195,500**	**56,270**	**33,100**	**33,100**	**33,100**	**28,100**	**11,830**		**195,500**
50	**MISCELLANEOUS COMPONENT**								-								
	5100	Operation and maintenance of equipment							0								
	5101	Maintenance of office equipment						2,500	2,500	210	500	500	500	500	290		2,500
	5102	Rental of equipment						4,000	4,000	300	800	800	800	800	500.00		4,000
	5199	**Sub-total**	**-**	**-**	**-**	**-**	**-**	**6,500**	**6,500**	**510**	**1,300**	**1,300**	**1,300**	**1,300**	**790**		**6,500**
	5200	Reporting costs							-								
	5201	Translation and other support services			20,000	20,000			40,000	6,300	11,500	2,000	2,000	13,000	5,200.00		40,000
	5202	Printing and publication: project management	3,750			12,000			15,750	1,000	3,150	3,400	3,400	3,400	1,400		15,750
	5203	Start-up manual on ES tools/methodologies for decision-makers	20,000						20,000		20,000	-	-	-	-		20,000
	5204	Detailed educational materials on ES methodologies & tools for decision-makers	30,000						30,000		30,000	-	-	-	-		30,000
	5205	Information materials on project findings				25,000			25,000					15,000	10,000		25,000
	5206	Revised start-up manual on ES and other supportive materials for decision makers based on project results				16,400			16,400	-	-	-	-	-	16,400		16,400
	5207	Start-up manual for local stakeholders in project intervention areason ecosystem approach			40,000				40,000	15,000	25,000	-	-	-	-		40,000
	5208	Good practices in agriculture and natural resource management for the Mixteca			40,000				40,000	15,000	25,000						40,000
	5209	Project tool kits for decision makers	23,000			25,000			48,000			48,000					48,000
	5210	Project tool kits for stakeholders	45,000			88,000			133,000			88,000	45,000				133,000
	5211	Project tool kits in Mixteco	21,000			29,000			50,000			50,000					50,000
	5299	**Sub-total**	**142,750**	**-**	**100,000**	**215,400**	**-**	**-**	**458,150**	**37,300**	**114,650**	**191,400**	**50,400**	**31,400**	**33,000**		**458,150**
	5300	Sundry							-								
	5301	Communications			12,500				12,500	1,000	2,600	2,600	2,600	2,600	1,100		12,500
	5302	Audio-visual materials	25,000		27,500	37,100			89,600	30,600	29,000			30,000			89,600
	5399	**Sub-total**	**25,000**	**-**	**40,000**	**37,100**	**-**	**-**	**102,100**	**31,600**	**31,600**	**2,600**	**2,600**	**32,600**	**1,100**		**102,100**
	5400	Hospitality and entertainment							-								
	5401								-								-

	5402			-				-									-
	5403							-									-
	5499	**Sub-total**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	5500	Evaluation							-								
	5501	Mid-term evaluation	-	-			20,000		20,000			20,000.00					20,000
	5502	Terminal evaluation	-	-			25,000		25,000							25,000.00	25,000
	5503	Audit						10,400	**10,400**		2,080	2,080	2,080	2,080	2,080	2,080	10,400
	5599	**Sub-total**	**-**	**-**	**-**	**-**	**45,000**	**10,400**	**55,400**	**-**	**2,080**	**22,080**	**2,080**	**2,080**	**27,080**	**55,400**	
5999	**Component total**		**167,750**	**-**	**140,000**	**252,500**	**45,000**	**16,900**	**622,150**	**69,410**	**149,630**	**217,380**	**56,380**	**67,380**	**61,970**	**622,150**	
									-								
99	**GRAND TOTAL**		**1,300,000**	**1,100,000**	**1,920,000**	**860,000**	**130,000**	**590,000**	**5,900,000**	**1,013,326**	**1,064,096**	**1,174,096**	**1,004,962**	**1,041,219**	**602,300**	**5,900,000**	
									-								

APPENDIX 2 - RECONCILIATION BETWEEN GEF BUDGET AND CO-FINANCE BUDGET (TOTAL GEF & CO-FINANCE US$)

Project title:
Project number:
Project executing partner:
Project implementation period:

		GEF Cash	CONAFOR		CONANP		WWF		Total	
From:										
To:			Cash	In-kind	Cash	In-kind	Cash	In-kind	Cash	In-kind
UNEP Budget Line		A	B	C	D	E	F	G	A+B+D+F	C+E+G
10	**PERSONNEL COMPONENT**									
1100	Project personnel									
1101	Full-time National Project Coordinator	**317,000**							317,000	-
1102	Interinstitutional coordination specialist	**189,000**							189,000	-
1104	Resource mobilization specialist	**270,000**							270,000	-
1105	Project Technical Assistant	**141,000**							141,000	-
1106	Project Technical Assistant	**141,000**							141,000	-
1107	Secretary (bilingual)	**105,700**							105,700	-
1107	Contract officer	128,970							128,970	
1199	**Sub-total**	**1,292,670**	**-**	**-**	**-**	**-**	**-**	**-**	**1,292,670**	**-**
1200	Consultants									
1201	Sociologist/Anthropologist	**120,000**			48,000				168,000	-
1202	Ecosystem services specialist	**150,000**	180,000						330,000	-
1203	Land use planning specialist	**150,000**	80,000		60,000				290,000	-
1204	Specialist in GAP and GNRMP	**150,000**			150,000				300,000	-
1206	GIS expert	**120,000**							120,000	-
1207	Legal expert in land use planning & develop.	**-**							-	-
1208	Website & information processing assistant	**45,000**								
1209	Publicity and public awareness	**90,000**							90,000	-
1299	**Sub-total**	**825,000**	**260,000**	**-**	**258,000**	**-**			**1,343,000**	**-**
1300	Administrative Support									
1301	Administrative Assistant	**117,252**								
									-	-
1399	**Sub-total**	**117,252**	**-**	**-**	**-**	**-**			**117,252**	**-**
1600	Travel on official business									
1601	Local travel and subsistence	**129,378**	47,500		24,500				201,378	-
1602	International travel	**14,000**								
1603	National travel	**80,000**	7,000						21,000	-
1699	**Sub-total**	**223,378**	**54,500**	**-**	**24,500**	**-**			159,000	-
1999	**Component total**	**2,458,300**	**314,500**	**-**	**282,500**	**-**			**3,055,300**	**-**
20	**SUB-CONTRACT COMPONENT**									
2100	Sub-contracts (for cooperating agencies)									
2101									-	-
2102									-	-
2199	**Sub-total**	**-**	**-**	**-**	**-**	**-**			**-**	**-**
2200	Sub-contracts (MOUs/LOAs for supporting organizations)									
2201	Further development of baseline data	**117,000**							**117,000**	**-**
2202	ES methodologies and tools	48,000							**48,000**	
2203	Detailed ES studies in 10 micro-watersheds	60,000							**60,000**	
2204	Detailed ES studies in priority ecosystems	40,000							**40,000**	
2205	Project replication strategy	**62,500**			**37,500**				**100,000**	**-**
2206	Educational and information materials on project findings, tools & methodologies	20,000	30,000		50,000				**100,000**	**-**
2207	Pilot demo. project micro-watershed 1	82,940	419,420			12,500			502,360	12,500
2208	Pilot demo. project micro-watershed 2	82,940	419,420			12,500			502,360	12,500
2209	Pilot demo. project micro-watershed 3	82,940	419,420			12,500			502,360	12,500
2210	Pilot demo. project micro-watershed 4	82,940	419,420			12,500			502,360	12,500
2211	Pilot demo. project micro-watershed 5	82,940	419,420			12,500			502,360	12,500
2212	Pilot demo. project micro-watershed 6	82,940	419,420			12,500			502,360	12,500
2213	Pilot demo. project micro-watershed 7	82,940	419,420			12,500			502,360	12,500
2214	Pilot demo. project micro-watershed 8	82,940	419,420			12,500			502,360	12,500
2215	Pilot demo. project micro-watershed 9	82,940	419,420			12,500			502,360	12,500
2216	Pilot demo. project micro-watershed 10	82,940	419,420			12,500			502,360	12,500
2217	Pilot demo project traditional farming 1	35,020	127,010		2,000	3,500			164,030	3,500
2218	Pilot demo project traditional farming 2	35,020	127,010		2,000	3,500			164,030	3,500
2219	Pilot demo project traditional farming 3	35,020	127,010		2,000	3,500			164,030	3,500
2220	Pilot demo project traditional farming 4	35,020	127,010		2,000	3,500			164,030	3,500
2221	Pilot demo project traditional farming 5	35,020	127,010		2,000	3,500			164,030	3,500
2222	Training state and local officials	15,000	200,000		150,000				365,000	-
2223	Training local farmers and stakeholders	33,000	267,000						300,000	-
2224	ES Monitoring program	150,000	625,000						775,000	-
2225	Marketing of products and goods generated by pilot dem. Projects	120,000	240,000						360,000	-
2226	Mixteca ES Fund capitalization	500,000	500,000						1,000,000	-
2299	**Sub-total**	**2,170,000**	**6,691,250**	**-**	**247,500**	**142,500**	**-**	**-**	**9,108,750**	**142,500**
2300	Sub-contracts (for commercial purposes)									
2301									-	-
2302									-	-
2399	**Sub-total**	**-**	**-**	**-**	**-**	**-**			**-**	**-**
2999	**Component total**	**2,170,000**	**6,691,250**	**-**	**247,500**	**142,500**			**9,108,750**	**142,500**
30	**TRAINING COMPONENT**									
3200	Group training									
3201	State and local officials	40,000	60,000						100,000	-
3202	Local farmers and stakeholders	63,000	140,000		100,000				303,000	-
3203	Stakeholders managing AVDCs/biol. corrid.	50,000	30,000		58,000	4,965			138,000	4,965
3204	Ecotourism guides	20,050	30,000			1,000			50,050	1,000
3205	Project replication training	80,000	140,000						220,000	-
3299	**Sub-total**	**253,050**	**400,000**	**-**	**158,000**	**5,965**			**811,050**	**5,965**
3300	Meetings/Conferences									
3301	Project Steering Committee	40,000				15,000		20,000	40,000	35,000
3302	Project inception workshop	15,000							15,000	-

	3303	Advisory Panel on ES	20,000				2,000		20,000	2,000
	3304	Advisory Panel on Alternative Tourism	20,000	20,000			1,000		40,000	1,000
	3305	Advisory Panels on other subjects	20,000				1,000		20,000	1,000
	3306	Interinstitutional Working Group	36,000	36,000			13,000	20,000	72,000	33,000
	3307	Interinstitutional Coordinating Committees in project intervention areas	50,000	50,000			15,000	20,000	100,000	35,000
	3399	**Sub-total**	**201,000**	**106,000**	**-**	**-**	**47,000**	**60,000**	**307,000**	**107,000**
3999	**Component total**		**454,050**	**506,000**	**-**	**158,000**	**52,965**	**60,000**	**1,118,050**	**112,965**
40	**EQUIPMENT AND PREMISES COMPONENT**									
	4100	Expendable equipment							-	
	4101	Office supplies for project management	15,000	5,000					20,000	-
	4102								-	-
	4199	**Sub-total**	**15,000**	**5,000**	**-**	**-**	**-**		20,000	-
	4200	Non-expendable equipment								
	4201	Computer, printer, projector, camera	18,000	10,000					28,000	-
	4202	Satellite imagery	22,000						22,000	-
	4203	Fuelwood efficient stoves	-	750,000					750,000	-
	4299	**Sub-total**	**40,000**	**760,000**	**-**	**-**	**-**		**800,000**	**-**
	4300	Premises							-	
	4301	Rental of meeting rooms	8,000						8,000	-
	4302	Rental of office space (Oaxaca)	92,500							
	4303	Rental of office space in intervention area	40,000	180,000					220,000	-
	4399	**Sub-total**	**140,500**	**180,000**	**-**	**-**	**-**		**320,500**	**-**
4999	**Component total**		**195,500**	**945,000**	**-**	**-**	**-**		**1,140,500**	**-**
50	**MISCELLANEOUS COMPONENT**									
	5100	Operation and maintenance of equipment								
	5101	Maintenance of office equipment	2,500	1,250					3,750	-
	5102	Rental of equipment	4,000	2,000					6,000	-
	5199	**Sub-total**	**6,500**	**3,250**	**-**	**-**	**-**		**9,750**	**-**
	5200	Reporting costs								
	5201	Translation and other support services	40,000						40,000	-
	5202	Printing and publication: project management	15,750						15,750	-
	5203	Start-up manual on ES tools and methodologies for decision-makers	20,000	20,000					40,000	-
									-	-
	5204	Detailed educational materials on ES methodologies & tools for decision-makers	30,000	30,000					60,000	-
									-	-
	5205	Information materials on project findings	25,000	25,000					50,000	-
	5206	Revised start-up manual on ES and other supportive materials for decision makers based on project results	16,400	30,000					46,400	-
									-	-
									-	-
	5207	Start-up manual for local stakeholders in intervention areas on ecosystem approach	40,000	20,000					60,000	-
									-	-
	5208	Good practices in agriculture and natural resource management for the Mixteca	40,000	40,000					80,000	-
									-	-
	5209	Project tool kits for decision makers(10,000)	48,000	25,000					73,000	-
	5210	Project tool kits for stakeholders (30,000)	133,000						133,000	-
	5211	Project tool kits in Mixteco (30,000)	50,000	100,000					150,000	-
	5299	**Sub-total**	**458,150**	**290,000**	**-**	**-**	**-**		748,150	-
	5300	Sundry								
	5301	Communications	12,500			5,065		20,000	**17,565**	**20,000**
	5302	Audio-visual materials	89,600						89,600	-
	5399	**Sub-total**	**102,100**	**-**	**-**	**5,065**	**-**	**20,000**	**107,165**	**20,000**
	5400	Hospitality and Entertainment								
	5401	Meetings		50,000				20,000	50,000	20,000
	5402								-	-
	5499	**Sub-total**	**-**	**50,000**	**-**	**-**	**-**	**20,000**	**50,000**	**20,000**
	5500	Evaluation								
	5501	Mid-term evaluation	20,000						20,000	-
	5502	Terminal evaluation	25,000						25,000	-
	5503	Audit	10,400						10,400	
	5599	**Sub-total**	**55,400**	**-**	**-**	**-**	**-**		55,400	-
5999	**Component total**		**622,150**	**343,250**	**-**	**5,065**	**-**	**40,000**	**970,465**	**40,000**
99	**GRAND TOTAL**		**5,900,000**	**8,800,000**	**-**	**693,065**	**195,465**	**100,000**	**15,393,065**	**295,465**

Appendix 3: Incremental cost analysis

The incremental costs and benefits of the Project are presented in the matrix below. The total baseline estimate is US$ 37,490,099. The incremental cost of the GEF Alternative amounts to an estimated US$ 53,178,629. The incremental cost necessary to achieve the Project objective and the corresponding global benefits is US$15,688,530 of which US$ 5,900,000 (38%) constitute the sum requested to the GEF. Co-financing amounts to US$ 9,788,530 (62%).

Incremental Cost Matrix

Component	Baseline	Alternative	Increment
Component 1. Strengthening the knowledge base on Ecosystem Approach for biodiversity conservation	Without the GEF intervention, the substantial investments by the Mexican Government in support programs promoting social and economic development and poverty alleviation in the Oaxacan Mixteca would not adequately take into account the importance of biodiversity conservation and maintenance of ecosystem services as a key element of the environmental variable of the sustainable development equation. The capacity of federal, state and local officials in integrating ecosystem services methodologies and tools and biodiversity conservation into social and economic development planning processes would continue to be inadequate.	GEF intervention funds will re-orientate a substantial amount of funds from federal agencies such as CONAFOR and CONANP in support of the development and integration of knowledge for the use and application of ecosystem services methodologies and tools in social, economic and environmental planning at the federal, state and local levels. Knowledge of and capacity for applying ecosystem services methodologies and tools in Mexico will be operational for federal, state and local agencies and key stakeholders in the Oaxacan Mixteca. Monitoring programs for assessing and valuing ecosystem services to assist decision-makers and managers will be operational.	
	Cost: US$ 207,077	Cost: US$ 2,221,077	GEF: US$ 1,300,000 Co-financing: US$ 714,000 Total: US$ 2,014,000
Component 2. Supporting biodiversity friendly policy and program development for land use planning and resource use	Support programs promoting social and economic development and poverty alleviation in the Oaxacan Mixteca continue to neglect the importance of biodiversity conservation and maintenance of ecosystem services. Existing land use plans are limited in effectiveness as a result of not adequately taking into account ecosystem services. As a result of not taking into account critical environmental	Biodiversity conservation, including the use and application of ecosystem services methodologies and tools, will be mainstreamed into social and economic support and poverty alleviation programs in the Oaxacan Mixteca. Existing land use plans will be revised to adequately take into account environmental considerations, particularly the provision and maintenance of ecosystem services. Compensation for restoring and	

Component	Baseline	Alternative	Increment
	and biodiversity considerations, the sustainability of federal, state and local support programs are at risk.	maintaining ecosystem integrity will serve as a major incentive for the conservation and sustainable use of biodiversity in the region.	
	Cost: US$ 470,295	Cost: US$ 2,076,295	GEF: US$ 1,100,000 Co-financing: US$ 506,000 Total: US$ 1,606,000
Component 3. Piloting biodiversity friendly programs on the ground	Local stakeholders, particularly farmers, continue to not take into account biodiversity conservation and the application of the ecosystem approach in productive activities and biodiversity conservation. Consequently, support programs will have limited results in achieving poverty alleviation. Ecosystem services provided by the fragile ecosystems of the Oaxacan Mixteca continue to deteriorate, further aggravating the loss of biodiversity. Unsustainable agricultural, animal husbandry and forestry activities will continue to drive habitat destruction leading to biodiversity loss. The further destruction of habitat will reduce the potential for establishing biological corridors connecting protected areas and biodiversity hotspots with other areas containing well-preserved ecosystems. Environmentally friendly traditional forms of agriculture and natural resource management will continue to gradually be lost and may eventually disappear.	Environmentally sound land use plans serve as the basis for the conservation of ecosystems and the rehabilitation and restoration of degraded lands and ecosystems. Based on the project demonstration sites, micro-watershed models for rural development utilizing the ES approach and good practices in agriculture and natural resource management will be developed. Local stakeholders, particularly farmers, are trained to take into account the application of the ecosystem approach in productive activities and biodiversity conservation, including through the application of GAP and GNRMP. Greater emphasis will be placed on the application of traditional farming knowledge that favors the restoration and maintenance of ecosystem services, such as the use of *lama-bordo* terraces as a management approach for improved control of soil erosion, use of water resources and increased productivity of traditional native crops. As a result of the application of GAP and GNRMP, the expansion of the agricultural frontier is controlled. Pressures on forest ecosystems and the services they provide will be reduced as a result of greater efficiency in the use of fuelwood. A network of certified Areas	

Component	Baseline	Alternative	Increment
		Voluntarily Destined for Conservation, including biological corridors connecting protected areas with well preserved forests will be established. Alternative tourism based on biodiversity, natural attractions and agro-ecosystems will be mainstreamed into state and local tourism plans and strategies.	
	Cost: US$ 35,712,727	Cost: US$ 43,782,542	GEF: US$ 1,920,000 Co-financing: US$ 6,149,815 Total: US$ 8,069,815
Component 4. Outreach and dissemination	The capacity of federal, state and local officials in integrating ecosystem services methodologies and tools and biodiversity conservation into social and economic development planning processes would continue to be inadequate. Support programs promoting social and economic development and poverty alleviation in the Oaxacan Mixteca will continue to neglect the importance of biodiversity conservation and maintenance of ecosystem services.	The findings and lessons learned from the project will be widely disseminated for replication through all the Mixteca and Mexico, substantially increasing knowledge and capacity for mainstreaming ES methodologies and tools into social and economic development processes and programs at the federal, state and local levels. Effectiveness and cost efficiency of interventions will be enhanced through adequate coordination with related initiatives. Project impact will achieve a wider reach and contribute at the programmatic level on a global scale by incorporating its findings, results and products into the knowledge base of UNEP's Ecosystem Management Program.	
	Cost: US$1,100,000	Cost: US$ 2,803,250	GEF: US$ 860,000 Co-financing: US$ 843,250 Total: US$ 1,703,250
Component 5. Monitoring and evaluation	N/A	Cost: US$ 680,000	GEF: US$ 130,000 Co-financing: US$ 550,000 Total: US$ 680,000
Component 6. Project management	N/A	Cost: US$ 1,615,465	GEF: US$ 590,000 Co-financing: US$ 1,025,465 Total: US$ 1,615,465
Grand total	Cost: US$ 37,490,099	Cost: US$ 53,178,629	GEF: US$ 5,900,000 Co-financing: US$ 9,788,530 Total: US$ 15,688,530

Appendix 4: Results Framework

Objective, Outcomes and Outputs	Objectively Verifiable Indicators			Means of Verification	Assumptions
	Indicators	**Baseline Conditions**	**Target**		
Goal: To conserve globally important ecosystems and species within the Mixteca region of Oaxaca					
Project Objective: Mainstream biodiversity conservation into natural resource use and development planning in the Mixteca Region of Oaxaca integrating ecosystem services (ES) tools and sustainable livelihood options	1. % increase of critical ecosystems* area (cloud forest, arid tropical scrub and tropical deciduous forest) under conservation	Nonexistent; GIS assessment of baseline in PY1	Cloud forest: 2-5% over baseline; Arid tropical scrub 5-10% over baseline; Tropical deciduous forest 5-10% over baseline	Annual assessments, technical reports and results documentation Annual monitoring reports Project M&E reports Terminal Evaluation report. (Same as Outcome 1.2)	Relevant institutions are committed to incorporating the assessment, valuation and monitoring of ES tools and knowledge into their work programs. Institutions are willing to share information on their activities and investments, as well as relevant basic information. (Same as Outcome 1.2)
	2. % increase in conservation area with the presence of characteristic species** (flora and fauna)	Nonexistent, Baseline assessment in PY1	Increase of 5% over baseline of the surface of conservation areas with the presence of characteristic species.		
	3. % increase of relevant characteristic species (flora and fauna) under any scheme of conservation	Nonexistent, Baseline assessment in PY1	30% over baseline in localities with characteristic species record in conservation areas 20 % over baseline in abundance of characteristics species in conservation areas 10 % over baseline in population growth rates of characteristic species in conservation areas		
	4. Mainstreaming of biodiversity and ecosystem services into the policy and regulatory framework of support programs at different levels	Same as for Outcome 2.1	Collective number of policy support elements for biodiversity and ecosystem services mainstreaming prompted by the project under outcome 2.1	Compilation of policy support elements as monitored by indicators under outcome 2.1	Same as Outcome 2.1

***** Critical ecosystems are further specified in the BD assessment methodology in appendix 15 of the project document.

****** Characteristic species can be of different types: 1) indicator species, which are sensitive to the effects of ecosystem disturbance, 2) key species, which are dependent on a large set of species in a given ecosystem, 3) umbrella species, requiring a very large area, hence their presence indicating a large number of other species, 4) vulnerable species, facing high risk of extinction in the wild.

Objective, Outcomes and Outputs	Objectively Verifiable Indicators				Means of Verification	Assumptions
	Indicators	Baseline Conditions	Target			
			Mid Term	End of Project		
Component 1: Strengthening the knowledge base on Ecosystem Approach for biodiversity conservation [*GEF funding - $1,300,000; cofinancing - $714,000*]						
Outcome 1.1: Stakeholders and decision makers at state and local level have increased access to Ecosystem Services tools applicable to biodiversity conservation and sustainable use	1. Number of targeted ES tools in support of biodiversity conservation available 2. Number of Government officials and stakeholders trained in the use of ES tools for biodiversity conservation	There is a lack of key ES tools for biodiversity conservation Expertise at the state and local level in the application of ES tools for biodiversity conservation is suboptimal	Tools designed and distributed: - ONE Manual on ES tools and methodologies for decision-makers at the state and local level - ONE KIT Educational materials for methodologies and tools - ONE KIT Supportive audio-visual training materials on ES 40 Trained state and local officials in the four project potential intervention areas on the application of ES methodologies and tools	Tools revised: - ONE Manual on ES tools and methodologies for decision-makers at the state and local level - TWO KITS Educational materials for methodologies and tools - TWO KITS Supportive audio-visual training materials on ES 80 Trained state and local officials in the four project potential intervention areas on the application of ES methodologies and tools	Manual distribution log Manual and materials opinion survey Distribution progress reports Distribution and discussion meeting workshops reports	Stakeholders and decision-makers are receptive to incorporating ES tools in land use and development planning
Outputs: 1. Start-up manual on ES tools and methodologies for decision-makers at the state and local level. 2. Educational materials for methodologies and tools that are adapted to the Oaxacan Mixteca regarding: (1) assessing, (2) valuing ecosystem and (3) monitoring ecosystem services. 3. Supportive audio-visual training materials on ES. 4. 80 Trained state and local officials in the project intervention area on the application of ES methodologies and tools. 5. Revised start-up manual on ES and supportive educational materials for use in project replication that takes into account project developments, findings and results.						
Outcome 1.2: Natural Resources, ecosystem	1. Application of project products for assessing and valuing ecosystem services	Ecosystem services and biodiversity in the project intervention area is not sufficiently	3 assessments incl. valuation of critical ecosystems, watersheds and	6 assessments incl. valuation of critical ecosystems, watersheds and	GIS and data base Use GIS and data base Manual	For effective monitoring of project implementation

services and biodiversity in the project intervention area are assessed, valued and monitored using the new ES tools and knowledge provided through the project	(emphasizing areas of outcome 3.1, 3.2 and 3.3) 2. Number of applications of the project's GIS on the intervention area's ecosystem services and biodiversity (emphasizing areas under component 3)	appraised Baseline data on the current distribution of biodiversity and ecosystem services in the project intervention area will be established commencing in PY1 and continued henceforth by monitoring and assessment under this outcome	characteristic species priority studies A working matrix of priority ecosystem services, characteristic species biodiversity and sustainable use studies for the project intervention area 4 institutions provide key information for GIS and utilize it as a planning and monitoring tool in the project intervention area (emphasizing areas under component 3) Monitoring system for the intervention area in operation Two models and analysis tools on the balance between the supply of ecosystem services and primary subsistence options in place	characteristic species priority studies A working matrix of priority ecosystem services, characteristic species biodiversity and sustainable use studies for the project intervention area 8 institutions provide key information for GIS and utilize it as a planning and monitoring tool in the project intervention area (emphasizing areas under component 3) Monitoring system for the intervention area in operation Four models and analysis tools on the balance between the supply of ecosystem services and primary subsistence options developed and applied	Technical documents and reports Meeting agreement records of COPLADE´s regional inter-institutional working group Meeting agreement records of Tlaxiaco, Huajuapan, and Mixtec River Committees, meetings agreements records Project progress reports Mid-term evaluation and terminal evaluation report	solid baseline information is needed Relevant institutions are committed to incorporating the assessment, valuation and monitoring of ES tools and knowledge into their work programs Institutions are willing to share information on their activities and investments, as well as relevant basic information

Outputs:

1. Comprehensive data and information on ES in the Oaxacan Mixteca region and in particular in the project intervention area.
2. Detailed studies by ecosystem and priority watersheds assessing and valuing ecosystem services in the Oaxacan Mixteca and in particular in the project intervention area.
3. Geographic information system on the project area and the region's biodiversity and ecosystem services to support relevant decision-making and investments in the region.
4. On-going programs to assess value and monitor ecosystem services in the Oaxacan Mixteca and in particular in the project intervention area.

Component 2: Supporting biodiversity friendly policy and program development for land use planning and resource use [*GEF funding - $1,100,000; cofinancing -*

$506,000]						
Outcome 2.1: Biodiversity and ecosystem service considerations are integrated into state and federal support programs and land use planning	1. Acceptance of biodiversity and ecosystem service considerations into the policy and regulatory framework of support programs at the state, regional and local levels	Ecosystem considerations have not been integrated into state and federal support programs and land use planning in the Mixteca region of Oaxaca	Ecosystem services and biodiversity considerations have been introduced as priority criteria for the approval of support programs by COPLADE´s regional inter-institutional working group.	Ecosystem services and biodiversity considerations have been introduced as priority criteria for the approval of support programs by COPLADE´s regional inter-institutional working group, regional committees, and communities and/or municipalities	Meeting agreement records of COPLADE´s regional inter-institutional working group. Meeting agreement records of Tlaxiaco, Huajuapan, and Mixtec River Committees	Political good will of relevant federal and state organizations to integrate ES considerations into support programs and land use planning SAGARPA and SEDER with CONANP reach an agreement for identifying good agricultural practices
		Priority zones for the regional COPLADE´s inter-institutional working group not defined	Four project piloting areas were accepted as priority zones for the regional COPLADE´s inter-institutional working group	Eight project piloting areas were accepted as priority zones for the regional COPLADE´s inter-institutional working group, and regional committees	Municipal council and Community and/or Ejido Assembly minutes	Willingness of relevant federal and state organizations to utilize environmental, biodiversity and ES indicators for assessing agricultural projects in the project's four intervention areas, particularly as they relate to GAP and good practices for natural resource management
		Communities and/or municipalities do not incorporate the subject of ecosystem services and biodiversity in their annual work programs	10 communities and/or municipalities incorporate the subject of ecosystem services and biodiversity in their annual work programs	30 communities and/or municipalities incorporate the subject of ecosystem services and biodiversity in their annual work programs	Municipal development plans Land use plans	
	2. Number of pilot implementation cases of federal and state supported programs including land use plans for the Mixteca region of Oaxaca, that mainstream ES and biodiversity	Local application of federal and state supported programs including land use plans for the Mixteca region of Oaxaca, do not mainstream ES and biodiversity conservation	30 local pilot projects using watershed approach to improve biodiversity and ecosystem services status are supported by the CRRN´s and the CCRM, as well	60 local pilot projects using watershed approach to improve biodiversity and ecosystem services status are supported by the CRRN´s and the CCRM, as well as by State and federal	Municipal council and Community and/or Ejido Assembly minutes Mid-term evaluation and terminal evaluation reports	Interest on the part of local authorities and communities to integrate ES considerations into their work

	conservation in their regulatory framework		as by State and federal programs	programs		
Outputs: 1. Regional inter-institutional working group to support the integration of biodiversity and ES considerations in state and federal support programs and land use planning in the project's intervention area. 2. Integrating the outcomes of the on-going programs assessing, valuing and monitoring ecosystem services from 1.2 into development policy-making and planning in the Oaxacan Mixteca. 3. Mainstreaming of biodiversity, including ES tools and options into federal and state support programs and land use plans in the Oaxacan Mixteca. 4. Baseline data for the development of comprehensive land use plans applicable to the project intervention area. 5. Environmentally sound land use plans for sustainable development in the project's intervention area, taking into account the outputs provided by the on-going programs assessing, valuing and monitoring ecosystem services under 1.2. 6. Revised existing land use plans or being developed in the Oaxacan Mixteca to include ecosystem services considerations, taking into account outputs provided by the on-going programs assessing, valuing and monitoring ecosystem services under 1.2. 7. Pilot system of compensation for ecosystem integrity provided by local communities, farmers and other stakeholders. 8. ES indicators for assessing the agricultural projects of SAGARPA and SEDER in the project's intervention area, particularly as they relate to GAP and good practices for natural resource management.						
Component 3: Piloting biodiversity friendly programs on the ground [*GEF funding - $1,920,000; cofinancing - $6,149,815*]						
Outcome 3.1: Local stakeholders apply the ecosystem approach for planning and implementation of productive activities and biodiversity conservation	1. Number of trained producers that apply the ecosystem approach in planning and implementing productive activities and in biodiversity conservation 2. Surface area of lands applying integrated land use planning of good practices in agriculture and natural resource management 3. Application of productive protocols based on models from 1.2 for rural development based on the ES approach and good practices in agriculture and natural resource management	Local stakeholders are not applying the ecosystem approach in productive activities and biodiversity conservation. Baseline assessment to be finalized in PY1 Baseline assessment to be finalized in PY1	50 local stakeholders apply the ecosystem approach in planning and implementing productive activities and in biodiversity conservation 5,000 ha of land including productive and conservation areas above baseline Five on the ground applications of models for rural development based on the ES approach and good practices in agriculture and natural resource management	100 local stakeholders apply the ecosystem approach in planning and implementing productive activities and in biodiversity conservation 10,000 ha of land including productive and conservation areas above baseline Ten on the ground applications of models for rural development based on the ES approach and good practices in agriculture and natural resource management	Lists of training assistance Verification by project staff recorded in planning and follow up field logs and local initiative reports List of participants in the watersheds models for rural development Acceptance letters by local stakeholders of the value of utilizing the ecosystem approach Meeting agreement participating	State and local authorities and local organizations are open to receiving capacity building in the integration of the ecosystem approach for planning and implementation of productive activities and biodiversity conservation Receptivity of private sector actors to establishing and promoting alternative tourism Certification by CONANP Local communities and federal, state

	4. Number of projects resulting from support to rural community planning processes	Community planning is at an incipient stage in the project intervention area, in particular regarding ES and BD considerations	10 community planning processes in priority communities in the project intervention area, 2 regional natural resources committees planning process	30 community planning processes in priority communities in the project intervention area, 2 regional natural resources committees planning process	communities records Meeting agreement records of Tlaxiaco, Huajuapan, and Mixtec River Committees, meetings agreements records	and local authorities can agree to work together in the establishment and implementation of the pilot demonstration projects
	5. Number of local tourism strategic routes, tour operators and hotel operators promoting alternative tourism	The development of alternative tourism based on biodiversity, natural attractions and agro-ecosystems is at an incipient stage	One alternative tourism strategic route based on biological diversity, natural attractions and agroecosystems	Two alternative tourism strategic routes based on biological diversity, natural attractions and agroecosystems	SAGARPA, SEDER, and CONANP to provide verification Verification by SECTUR of integration of alternative tourism into state and local plans and strategies	
	6. Number of persons trained, certified and hired as local ecotourism guides		10 local stakeholders are trained and certified as local ecotourism guides	20 local stakeholders are trained and certified as local ecotourism guides		
	7. Products with potential for marketing strategy of conservation goods and services	No marketing strategy in the region for certified products derived from sustainable management and conservation of natural resources and ecosystem services		A technical proposal for the marketing of goods and services related certification programs	Mid-term evaluation and terminal evaluation report	

Outputs:

1. Start-up manual for local stakeholders in the project intervention area on the ecosystem approach for planning and implementing productive activities and biodiversity conservation.
2. Educational materials in each of the following areas that are adapted to the Oaxacan Mixteca: (1) good agricultural practices (GAP) and (2) good practices in natural resource management.
3. Educational materials on the sustainable use of biodiversity, based on the ethno-biological experiences of the local people.
4. Educational materials on the importance of preventing the illegal collection and use of wild biota.
5. Supportive audio-visual training materials on GAP and good practices in natural resource management.
6. Revised start-up manual and supportive educational materials on the ecosystem approach for planning and implementing productive activities and biodiversity conservation for local stakeholders that take into account project developments, findings and results, for use in project replication.
7. Cooperative agreements with rural community planning processes, particularly within the regional natural resources committees and in priority communities in the project's intervention area, for promoting the integration of biodiversity conservation, ES considerations and sustainable management of agriculture and natural resources.

8. Agreements on priority actions, programs and projects requiring the ecosystem approach through participatory rural community planning exercises. 9. Strategy for mainstreaming alternative tourism based on biodiversity, natural attractions and agro-ecosystems in state and local tourism programs. 10. Alternative tourism strategy for the project's intervention area based on biological diversity, natural attractions and agroecosystems. 11. Trained and certified ecotourism guides for the Oaxacan Mixteca. 12. Ten micro-watersheds that can serve as models for rural development based on the ES approach and good practices in agriculture and natural resource management. 13. Trained local stakeholders, particularly farmers and local communities, at the 10 pilot demonstration projects in the intervention area on the application of the ecosystem approach for planning and implementing productive activities, natural resource management and biodiversity conservation. 14. Technical assistance to producers for the marketing of goods and services that are the product of GAP and GNRMP, including lama-bordo techniques, exploring opportunities for participating in related certification programs.						
Outcome 3.2: The supply of key Ecosystem Services is secured, improving ecosystem resilience and leading to improved livelihoods	1. Surface area of degraded lands and ecosystems that have been rehabilitated or are in process of rehabilitation Surface area of increase in natural vegetation cover, which reflects an improvement in the provision of ecosystem services, including carbon sequestration, availability of water, soil rehabilitation and biodiversity conservation 2. Use of fuelwood efficient stoves 3. Use of *lama-bordo* agricultural terraces for cultivating native plants such as maize, chile, squash, amaranth, and cacti,	Ecosystem services provided by fragile ecosystems in the Mixteca of Oaxaca are in a state of deterioration as a result of growing population pressure, deforestation and unsustainable practices in agriculture and natural resource management, further exacerbating the livelihoods of local and indigenous communities *Lama-bordo* agricultural terraces, while widespread in the Mixteca during the precolombian period, were largely	4500 ha of degraded lands reforested, rehabilitated or in the process of rehabilitation 5 communities use fuelwood efficient stoves including the establishment of fuelwood plantations based on native species 5 pilot demonstration projects for rehabilitating lama-bordo systems, testing, monitoring and demonstrating	9000 ha of degraded lands reforested, rehabilitated or in the process of rehabilitation 10 communities use fuelwood efficient stoves including the establishment of fuelwood plantations based on native species 10 pilot demonstration projects for rehabilitating lama-bordo systems, testing, monitoring and	Participant list with reforested and rehabilitated areas. Meeting agreement participating communities records Acceptance letters by local stakeholders Lists of training assistance Technical documents and reports lama-bordo system Technical evaluation of fuelwood efficient stoves Project progress reports Mid-term evaluation and terminal evaluation report	Communities agree to utilize *lama-bordo* management systems

	among others 4. Comparative quantitative and qualitative data on soil quality within and outside *lama-bordo* agricultural terraces	abandoned as an agricultural management system after European contact	20 Trained local producers in the use of lama-bordo techniques	demonstrating 40 Trained local producers in the use of lama-bordo techniques 5 communities use *lama-bordo* terraces as an agricultural management approach		
Outputs: 1. Degraded lands reforested 2. Degraded lands and ecosystems rehabilitated or in the process of rehabilitation in project intervention areas. 3. Knowledge and information on lama-bordo agricultural systems for soil conservation, improved productivity and the cultivation of native plants traditionally used that contribute to improved family nutrition. 4. Knowledge and information on cultivation of traditionally used native plants that contribute to improved family nutrition particularly through the use of lama-bordo agricultural systems. 5. 5 pilot demonstration projects for (1) rehabilitating lama-bordo systems, (2) testing, monitoring and demonstrating the use of lama-bordo production techniques and their compatibility with sustaining ecosystem services and (3) training local producers in the restoration of lama-bordo terraces and in the application of lama-bordo agricultural practices, including the use of traditional native crops. 6. Trained local producers in the use of lama-bordo techniques. 7. Utilization of fuelwood efficient stoves in ten communities, including the establishment of fuelwood plantations based on native species.						
Outcome 3.3: Improved land use planning and management practices lead to increased habitat connectivity for globally significant biodiversity within the project intervention area as assessed and monitored under outcome 1.2	1. Advancement in the processes for the establishment of voluntary reserves and related management plans 2. Advancement in the processes for the establishment of biological corridors, and their management plans, connecting protected areas	Detailed baseline information on the status of degraded lands and ecosystems as on connectivity of habitat area and corridors in the project intervention area will be established under OUTCOME 1.2 in PY1 and monitored henceforth	Potential Community Conservation Areas identified; 5 Certification process for establishing AVDCs (Areas Voluntarily Destined for Conservation) Potential communities for the establishment of biological corridors Establishment of one biological corridor connecting protected	10 Certification process for establishing AVDCs. 5 Management plans for AVDCs Establishment of 2 biological corridors connecting protected areas with well preserved forests Management plans for one biological corridor	Technical documents and reports for potential community conservation and biological corridors Communities agreement for AVDCs CONANP´ AVDCs certification process files Management Plans Technical documents Management Plans communities	Local communities are open to the possibility of establishing voluntary Community Areas for Conservation and biological corridors

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			areas with well preserved forests		accepted letter	
	3. Number of persons trained for implementation of management plans for AVDCs and biological corridors			10 Trained local stakeholders participating in the implementation of management plans for AVDCs and biological corridors	GIS and data base	

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Outputs:

1. Identification in consultation with priority communities potential Community Conservation Areas that could be certified as Areas Voluntarily Destined for Conservation (AVDCs).
2. Identification in consultation with priority communities of areas for the establishment of biological corridors connecting protected areas with well preserved forests.
3. Application of environmentally sound land use plans developed under project component 2 in the establishment of AVDCs and biological corridors.
4. Network of certified Areas Voluntarily Destined for Conservation.
5. Biological corridors connecting protected areas with well preserved forests.
6. Certification process for establishing AVDCs.
7. Certification process for producers within biological corridors applying the ES approach.
8. Management plans for AVDCs.
9. Management plans for biological corridors.
10. Trained local stakeholders participating in the implementation of management plans for AVDCs and biological corridors.

Component 4: Outreach and dissemination [*GEF funding - $860,000; cofinancing - $843,250*]						
Outcome 4.1: Project findings, tools and methodologies made available to state and federal decision makers as well as the public, and relevant interest groups	1. Public and private sector organizations at the state, federal and local levels have been provided with information materials and tool kits on project findings, tools and methodologies	An inventory of ES materials found that very little of practical use has been disseminated to state and federal decision makers, stakeholders and the public.	Tool kit for the application of ES tools and methodologies for decision-makers at the state and federal levels Tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities	Systematization of methodologies and tools developed by the project, as well as results and findings Tool kit for the application of ES tools and methodologies for decision-makers at the state and federal levels Tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local	Records of dissemination of project findings, tools and methodologies Press conferences, press releases, publication launches and other public events for disseminating project findings and information Training workshops and activities on project findings, tools and methodologies with	State and federal decision makers and stakeholders outside the State of Oaxaca are open to learn about project findings, tools and methodologies

				communities	state and federal organizations and stakeholders Mid-term evaluation and terminal evaluation report	
Outputs: 1. Systematization of methodologies and tools developed by the project, as well as results and findings. 2. Outreach and dissemination strategy for upscaling of project impact based on the systematization of project tools, methodologies, results and findings. 3. Information materials on project findings, tools and methodologies for (1) state and federal decision-makers, (2) stakeholders and (3) the public. 4. Educational and public awareness materials on the provision of ecosystem services to productive sectors in the Mixteco language. 5. Tool kit for the application of ES tools and methodologies for decision-makers at the state and federal levels. 6. Tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities.						
Outcome 4.2: Coordination and cooperation established with synergic initiatives and other projects	1. Level of advance in knowledge management exchanges on terrestrial ecosystem approach matters	No community of practice exists to dialogue and share lessons learned across the ecosystem management portfolio of GEF projects. Initial database of potential projects to be established in PY1	Community of practice established and UNEP's GEF funded projects related to terrestrial ecosystem management in the LAC region participating	Community of practice extended to all of UNEP's GEF funded projects related to terrestrial ecosystem management	Half year progress reports and PIRs Mid-term evaluation and terminal evaluation report Steering Committee meetings reports	A positive climate exists for exchanging knowledge and experience between the project and related initiatives from partnering institutions
Output: 1. Ongoing systematic consultations and coordination with related and synergic initiatives and with UNEP's Ecosystem Management Program. 2. Platform for community of practice including web space established to share lessons and develop joint outputs.						

Appendix 5: Workplan and timetable

Component	Activities	2010	2011	2012	2013	2014	2015
1	a. Prepare a start-up manual on ES tools and methodologies for decision makers at the state and local level;						
	b. Prepare more detailed educational materials for methodologies and tools that are adapted to the Mixteca region of Oaxaca regarding: (1) assessing, (2) valuing ecosystem and (3) monitoring ecosystem services;						
	c. Prepare supportive audio-visual training materials on ES;						
	d. Train state and local officials in the four project intervention areas on the application of ES methodologies and tools;						
	e. Revise the start-up manual on ES and supportive educational materials to take into account project developments, findings and results;						
	f. Compile, analyze and assess information for evaluating key ecosystem services, their links to biodiversity and factors affecting their distribution at different project levels in the Oaxacan Mixteca;						
	g. Prepare detailed studies by ecosystem and priority watersheds assessing and valuing ecosystem services in the Oaxacan Mixteca;						
	h. Develop a geographic information system on the region's biodiversity and ecosystem services to support relevant decision-making and investments in the region;						
	i. Develop and implement a system for monitoring the supply of ecosystem services, effects on biodiversity and impacts on development options, including the evaluation of the conservation grade of the ecosystems, their fragmentation level and their vulnerability to climate change;						
	j. Develop and apply models and analysis tools on the balance between the supply of ecosystem services and principal subsistence options;						
	k. Identify, assess and, where applicable, provide continuity to relevant research projects relating to endangered and invasive species, including indicative, key, vulnerable and umbrella species.						
2	a. Establish a regional inter-institutional working group to support the integration of biodiversity and ES considerations in state and federal support programs and land use planning in the project's four intervention areas;						
	b. Develop a workplan for the regional interinstitutional working group in support of the project;						
	c. Consolidate and reinforce the CCRM and the CRRNs for Tlaxiaco and Huajuapan in support of project implementation;						
	d. Collect, analyze and interpret baseline data available or that needs to be generated for the elaboration of comprehensive land use plans applicable to the project intervention areas;						

Component	Activities	2010	2011	2012	2013	2014	2015
	e. Develop environmentally sound land use plans based on ecosystem services for each of the project's four intervention areas;						
	f. Integrate ecosystem services considerations into existing land use plans developed or being developed in the Oaxacan Mixteca;						
	g. Analyze and consider options for a system of payments for ecosystem services provided by local communities, farmers and other stakeholders;						
	h. Develop and utilize environmental, biodiversity and ES indicators for assessing the agricultural projects of SAGARPA and SEDER in the project's four intervention areas, particularly as they relate to GAP and good practices for natural resource management.						
3	a. Prepare a start-up manual for local stakeholders in the four project intervention areas on the ecosystem approach for planning and implementing productive activities and biodiversity conservation;						
	b. Prepare more detailed educational materials in each of the following areas that are adapted to the Oaxacan Mixteca: (1) good agricultural practices (GAP) and (2) good practices in natural resource management;						
	c. Prepare materials for the sustainable use of biodiversity, based on the ethnobiological experiences of the local people;						
	d. Prepare educational materials on the importance of preventing the illegal collection and use of wild biota.						
	e. Prepare supportive audio-visual training materials on GAP and good practices in natural resource management ;						
	f. Support rural community planning processes, particularly within the regional natural resources committees and in priority communities in the project's four intervention areas, in the integration of biodiversity conservation, ES considerations and sustainable management of agriculture and natural resources;						
	g. Identify priority actions, programs and projects requiring the ecosystem approach through participatory rural community planning exercises;						
	h. Analyze tourism in the Oaxacan Mixteca and potential options for alternative tourism based on biological diversity, natural attractions and agroecosystems;						
	i. Explore with tour operators, including hotels providing tours, and other relevant stakeholders options for establishing an ecotourism network that will work closely with local communities;						
	j. Initiate a program for training and certifying ecotourism guides for the Mixteca;						
	k. Develop and implement an alternative tourism strategy for the project's four intervention areas based on biological diversity, natural attractions and agroecosystems;						
	l. Test and monitor good practices in agriculture and management of natural resources, including soils, surface waters, aquifers, forests, landscapes and biodiversity at 10 pilot demonstration projects in 10 priority micro-watersheds;						

Component	Activities	2010	2011	2012	2013	2014	2015
	m. Train local stakeholders, particularly farmers and local communities, at the 10 pilot demonstration projects in the four intervention areas on the application of the ecosystem approach for planning and implementing productive activities, natural resource management and biodiversity conservation;						
	n. Provide technical assistance to producers for the marketing of goods and services that are the product of GAP and GNRMP, including lama bordo techniques, exploring opportunities for participating in related certification programs.						
	o. Revise the start-up manual for local stakeholders in the four project intervention areas on the ecosystem approach for planning and implementing productive activities and biodiversity conservation.						
	p. Reforest degraded lands;						
	q. Activities under outcome 1 related to the ecosystem approach in development planning, good practices in agriculture and natural resource management and alternative tourism will also contribute significantly to the achievement of this expected outcome;						
	r. Promote the use of fuelwood efficient stoves in ten communities, including through the establishment of fuelwood plantations based on native species;						
	s. Compilation of knowledge and information on "lama bordo" agricultural systems for soil conservation, improved productivity and the cultivation of native plants traditionally used that contribute to improved family nutrition;						
	t. Compilation of knowledge and information on cultivation of traditionally used native plants that contribute to improved family nutrition;						
	u. Study the location and importance of pre-existing lama bordo systems in the project intervention areas, including a proposal for their restoration and the establishment of a system for monitoring related actions and results;						
	v. Establish 5 pilot demonstration projects for (1) rehabilitating lama bordo systems, (2) testing, monitoring and demonstrating the use of lama bordo production techniques and their compatibility with sustaining ecosystem services and (3) training local producers in the restoration of lama bordo terraces and in the application of lama bordo agricultural practices, including the use of traditional native crops.						
	w. Identify in consultation with priority communities potential Community Conservation Areas that could be certified as Areas Voluntarily Destined for Conservation (AVDCs);						
	x. Identify in consultation with priority communities the establishment of biological corridors connecting protected areas with well preserved forests;						
	y. Support the preparation of management plans for AVDCs;						
	z. Support the preparation of management plans for biological corridors;						
	aa. Prepare and implement a certification process for establishing AVDCs;						
	bb. Prepare and implement a certification process for producers within biological corridors applying the ES approach;						

Component	Activities	2010	2011	2012	2013	2014	2015
	cc. Build local capacity and train local stakeholders participating in the implementation of management plans for AVDCs and biological corridors;						
	dd. Establish an on-going program for monitoring the implementation of the management plans for AVDCs and biological corridors.						
4	a. Systematization of methodologies and tools developed by the project, as well as results and findings;						
	b. Development and implementation of an outreach and dissemination strategy based on the systematization of project tools, methodologies, results and findings;						
	c. Capacity building for replicating and implementing the strategy at state and federal levels;						
	d. Elaboration and dissemination of information materials on project findings, tools and methodologies for (1) state and federal decision-makers, (2) stakeholders and (3) the public;						
	e. Elaboration and dissemination of educational and public awareness materials on the provision of ecosystem services to productive sectors in the Mixteco language;						
	f. Preparation of a tool kit for the application of ES tools and methodologies for decision makers at the state and federal levels;						
	g. Preparation of a tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities;						
	h. Systematic consultations and coordination with related initiatives for community of practice						

Appendix 6: Key deliverables and benchmarks

Component	Activities	Deliverables	Benchmarks
1	a. Prepare a start-up manual on ES tools and methodologies for decision makers at the state and local level; b. Prepare more detailed educational materials for methodologies and tools that are adapted to the Mixteca region of Oaxaca regarding: (1) assessing, (2) valuing ecosystem and (3) monitoring ecosystem services; c. Prepare supportive audio-visual training materials on ES; d. Train state and local officials in the four project intervention areas on the application of ES methodologies and tools; e. Revise the start-up manual on ES and supportive educational materials to take into account project developments, findings and results;	• Knowledge base at the state and local level for the effective application of ES tools in biodiversity conservation and the management of natural resources.	Start-up manual, supportive educational materials and audio-visual training materials directed at decision makers are produced. *April 2011* Training workshops for state and local officials in the four intervention areas are held. *July 2011* The revised start-up manual for decision makers, taking into account project developments, findings and results is produced. *December 2012*
	f. Compile, analyze and assess information for evaluating key ecosystem services, their links to biodiversity and factors affecting their distribution at different project levels in the Oaxacan Mixteca; g. Prepare detailed studies by ecosystem and priority watersheds assessing and valuing ecosystem services in the Oaxacan Mixteca; h. Develop a geographic information system on the region's biodiversity and ecosystem services to support relevant decision-making and investments in the region; i. Develop and implement a system for monitoring the supply of ecosystem services, effects on biodiversity and impacts on development options, including the evaluation of the conservation grade of the ecosystems, their fragmentation level and their vulnerability to climate change; j. Develop and apply models and analytical tools on the balance between the supply of ecosystem services and principal subsistence options; k. Identify, assess and, where applicable, provide continuity	• On-going programs to assess, value and monitor ecosystem services in the Oaxacan Mixteca. • Models and analytical tools for addressing links between the supply of ecosystem services and development options in the Oaxacan Mixteca	Data and information on ES in the Oaxacan Mixteca is compiled and analyzed. *July 2011* ES studies by ecosystem and priority watershed in the Oaxacan Mixteca are completed and reports produced. *September 2011* GIS on the region's biodiversity and ecosystem services is completed. *July 2011 with inclusion of baseline data; updated with information from other project activities through July 2015* Monitoring program on ecosystem services and impacts of development options is in place.

	to relevant research projects relating to endangered and invasive species, including indicative, key, vulnerable and umbrella species.		*October 2011* Models and tools for analyzing the balance between the supply of ecosystem services and principal subsistence options have been produced. *October 2011* Relevant research projects feed directly into supporting the objective, goal and activities of this project. *July-September 2011*
2	a. Establish a regional inter-institutional working group to support the integration of biodiversity and ES considerations in state and federal support programs and land use planning in the project's four intervention areas; b. Develop a workplan for the regional interinstitutional working group in support of the project; c. Consolidate and reinforce the CCRM and the CRRNs for Tlaxiaco and Huajuapan in support of project implementation; d. Collect, analyze and interpret baseline data available or that needs to be generated for the elaboration of comprehensive land use plans applicable to the project intervention areas; e. Develop environmentally sound land use plans based on ecosystem services for each of the project's four intervention areas, taking into account outputs provided by the on-going programs assessing, valuing and monitoring ecosystem services; f. Integrate ecosystem services considerations into existing land use plans developed or being developed in the Oaxacan Mixteca, taking into account outputs provided by the on-going programs assessing, valuing and monitoring ecosystem services; g. Analyze and consider options for a system of compensation for ecosystem integrity provided by local communities, farmers and other stakeholders; h. Develop and utilize environmental, biodiversity and ES	• Development policy making and planning in the Oaxacan Mixteca that has integrated the outcomes of the on-going programs assessing, valuing and monitoring ecosystem services. • Federal and state support programs and land use plans in the Oaxacan Mixteca that have mainstreamed biodiversity, including ES tools and options. • Environmentally sound land use plans for sustainable development in each of the project's four intervention areas.	Regional inter-institutional working group is established and its workplan is adopted. *November 2010* Institutional arrangements for coordination with project made with CCRM and CRRNs. *November 2010* Available baseline data for the elaboration of land use plans in the project intervention areas are compiled and analyzed. *July 2011* Land use plans developed and reviewed by state and local authorities and concerned stakeholders. *January 2012 to April 2015* Options for a system of compensation for ecosystem integrity are prepared and reviewed by federal, state and local authorities and stakeholders. *February 2011*

	indicators for assessing the agricultural projects of SAGARPA and SEDER in the project's four intervention areas, particularly as they relate to GAP and good practices for natural resource management.		Environmental, biodiversity and ES Indicators for assessing agricultural projects are prepared and reviewed by SAGARPA and SEDER. *May 2011*
3	a. Prepare a start-up manual for local stakeholders in the four project intervention areas on the ecosystem approach for planning and implementing productive activities and biodiversity conservation; b. Prepare more detailed educational materials in each of the following areas that are adapted to the Oaxacan Mixteca: (1) good agricultural practices (GAP) and (2) good practices in natural resource management; c. Prepare materials based on the sustainable use of biodiversity, based on the ethnobiological experiences of the local people; d. Prepare educational materials on the importance of preventing the illegal collection and use of wild biota. e. Prepare supportive audio-visual training materials on GAP and good practices in natural resource management ; f. Support rural community planning processes, particularly within the regional natural resources committees and in priority communities in the project's four intervention areas, in the integration of biodiversity conservation, ES considerations and sustainable management of agriculture and natural resources; g. Identify priority actions, programs and projects requiring the ecosystem approach through participatory rural community planning exercises; h. Analyze tourism in the Oaxacan Mixteca and potential options for alternative tourism based on biological diversity, natural attractions and agroecosystems; i. Explore with tour operators, including hotels providing tours, and other relevant stakeholders options for establishing an ecotourism network that will work closely with local communities; j. Initiate a program for training and certifying ecotourism guides for the Oaxacan Mixteca; k. Develop and implement an alternative tourism strategy for	• Acceptance by local stakeholders of the value of utilizing the ecosystem approach in planning and implementing productive activities and in biodiversity conservation. • The mainstreaming of alternative tourism based on biodiversity, natural attractions and agroecosystems in state and local tourism plans and strategies. • Ten micro-watersheds that can serve as models for rural development based on the ES approach and good practices in agriculture and natural resource management	Start-up manual, supportive educational materials and audio-visual training materials directed to local stakeholders are produced. *June 2011* The revised start-up manual directed at local stakeholders, taking into account project developments, findings and results, is produced. *December 2012* Institutional arrangements for coordination with project made with CCRM and CRRNs and other rural community planning processes. *November 2010* Analysis of potential for alternative tourism based on biological diversity, natural attractions and agroecosystems is completed. *April 2011* Alternative tourism strategy for the project's four intervention areas based on biological diversity, natural attractions and agroecosystems is completed and reviewed with federal, state and local authorities and concerned stakeholders. *October 2011* 10 pilot demonstration projects in 10

	the project's four intervention areas based on biological diversity, natural attractions and agroecosystems; l. Test and monitor good practices in agriculture and management of natural resources, including soils, surface waters, aquifers, forests, landscapes and biodiversity at 10 pilot demonstration projects in 10 priority micro-watersheds; m. Train local stakeholders, particularly farmers and local communities, at the 10 pilot demonstration projects in the four intervention areas on the application of the ecosystem approach for planning and implementing productive activities, natural resource management and biodiversity consevation; n. Provide technical assistance to producers for the marketing of goods and services that are the product of GAP and GNRMP, including lama bordo techniques, exploring opportunities for participating in related certification programs. o. Revise the start-up manual for local stakeholders in the four project intervention areas on the ecosystem approach for planning and implementing productive activities and biodiversity conservation.		priority micro-watersheds on good practices in agriculture and management of natural resources, including soils, surface waters, aquifers, forests, landscapes and biodiversity, are established. *August 2011* Training workshops for local stakeholders, particularly farmers and local communities, in the four intervention areas are held. *October 2011to June 2015*
	p. Reforest degraded lands; q. Activities under outcome 1 related to the ecosystem approach in development planning, good practices in agriculture and natural resource management and alternative tourism will also contribute significantly to the achievement of this expected outcome; r. Promote the use of fuelwood efficient stoves in ten communities, including through the establishment of fuelwood plantations based on native species; s. Compilation of knowledge and information on "lama bordo" agricultural systems for soil conservation, improved productivity and the cultivation of native plants traditionally used that contribute to improved family nutrition; t. Compilation of knowledge and information on cultivation of traditionally used native plants that contribute to improved family nutrition; u. Study the location and importance of pre-existing lama	• Rehabilitation of degraded lands and ecosystems in project intervention areas. • Improved livelihoods of participating producers. • Zero expansion of the agricultural frontier as a result of greater use of good practices in agriculture and natural resource management • Greater energy efficiency in the use of fuelwood stoves, reducing pressures on forest ecosystems and the services they provide	Surface area of reforested lands is expanded. *April 2012, April 2013, April 2014 and April 2015* Surface area of rehabilitated agricultural lands is expanded. *April 2012, April 2013, April 2014 and April 2015* 5 Lama bordo demonstration projects are established. *August 2011* Surface area of lama bordo agricultural systems is expanded. *April 2012, April 2013, April 2014 and April 2015*

	bordo systems in the project intervention areas, including a proposal for their restoration and the establishment of a system for monitoring related actions and results; v. Establish 5 pilot demonstration projects for (1) rehabilitating lama bordo systems, (2) testing, monitoring and demonstrating the use of lama bordo production techniques and their compatibility with sustaining ecosystem services and (3) training local producers in the restoration of lama bordo terraces and in the application of lama bordo agricultural practices, including the use of traditional native crops.	• Revitalization of the use of lama bordo terraces as an agricultural management approach for improved control of soil erosion, use of water resources and increased productivity of traditional native crops.	
	w. Identify in consultation with priority communities potential Community Conservation Areas that could be certified as Areas Voluntarily Destined for Conservation (AVDCs); x. Identify in consultation with priority communities the establishment of biological corridors connecting protected areas with well preserved forests; y. Support the preparation of management plans for AVDCs; z. Support the preparation of management plans for biological corridors; aa. Prepare and implement a certification process for establishing AVDCs; bb. Prepare and implement a certification process for producers within biological corridors applying the ES approach; cc. Build local capacity and train local stakeholders participating in the implementation of management plans for AVDCs and biological corridors; dd. Establish an on-going program for monitoring the implementation of the management plans for AVDCs and biological corridors.	• Implementation of environmentally sound land use plans. • Network of certified Areas Voluntarily Destined for Conservation. • Biological corridors connecting protected areas with well preserved forests.	Consultations carried out with priority communities on the establishment of AVDCs and biological corridors. *October 2011* Management plans for AVDCs and biological corridors developed and reviewed by stakeholders; approved plans shared with stakeholders and the general public. *January 2012 with additional management plans to April 2015* Preparation of certification processes for AVDCs and biological corridors is completed. *August 2011* Networks of certified AVDCs and biological corridors are operational. *January 2012 with further expansion to April 2015* Program for monitoring the implementation of management plans for AVDCs and biological corridors is operational. *January 2012*
4	a. Systematization of methodologies and tools developed by	• Other programs and initiatives at	Systematization of project

	the project, as well as results and findings; b. Development and implementation of an outreach and dissemination strategy based on the systematization of project tools, methodologies, results and findings; c. Capacity building for replicating and implementing the strategy at state and federal levels; d. Elaboration and dissemination of information materials on project findings, tools and methodologies for (1) state and federal decision-makers, (2) stakeholders and (3) the public e. Elaboration and dissemination of educational and public awareness materials on the provision of ecosystem services to productive sectors in the Mixteco language; f. Preparation of a tool kit for the application of ES tools and methodologies for decision makers at the state and federal levels; g. Preparation of a tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities.	the federal, state and local levels incorporate findings and lessons learned from the project. • Utilization of tools and methodologies developed in the project by other programs and initiatives at the federal, state and local levels.	methodologies, tools and results is completed. *September 2012 with further reviews to May 2015* Outreach and dissemination strategy is finalized and reviewed with federal, state and local stakeholders. *April 2013* Fund for compensation for ecosystem integrity is operational and supports project replication throughout the Oaxacan Mixteca. *January 2013* Project information, educational and public awareness materials are produced. *March 2013* Tools kits on the application of ES tools and good practices in agriculture and natural resource management for decision makers at the state and federal level and for use by local communities. *December 2012* Training workshops for decision makers and for local stakeholders, particularly farmers and local communities, are held. *February 2013 to May 2015*
	h. Consultations and coordination with other related initiatives and in particular with UNEP EMP supports the development and implementation of an outreach and dissemination strategy and the systematization of project tools, methodologies, results and findings.	• Project findings, results and products exchanged with other initiatives and knowledge base of UNEP's Ecosystem Management Program	Outreach and dissemination strategy is finalized and reviewed. *February 2013*

Results-Based Monitoring and Evaluation Framework

Appendix 7 - Costed M&E Work Plan Summary

1. **Monitoring Framework and Budget**

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
Project Objective: Mainstream biodiversity conservation into natural resource use and development planning in the Mixteca Region of Oaxaca integrating ecosystem services (ES) tools and sustainable livelihood options	1. % increase of critical ecosystems* area (cloud forest, arid tropical scrub and tropical deciduous forest) under conservation	Nonexistent; GIS assessment of baseline in PY1	Cloud forest: 2-5% over baseline; Arid tropical scrub 5-10% over baseline; Tropical deciduous forest 5-10% over baseline		Annual assessments, technical reports and results documentation Annual monitoring reports Project M&E reports Terminal Evaluation report.	Same as for Outcome 1.2	Same as for Outcome 1.2	Same as for Outcome 1.2	Same as for Outcome 1.2	Accounted for under Outcome 1.2
	2. % increase in conservation area with the presence of characteristic species** (flora and fauna)	Nonexistent, Baseline assessment in PY1	Increase of 5% of the surface of conservation areas with the presence of characteristic species.							
	3. % increase of relevant characteristic species (flora and fauna) under any scheme of conservation	Nonexistent, Baseline assessment in PY1	30% over baseline in localities with characteristic species record in conservation areas 20 % over baseline in abundance of characteristics species in conservation areas 10 % over baseline in population growth rates of characteristic species in conservation areas							
	4. Mainstreaming	Same as for Outcome 2.1	Policy support elements for biodiversity and ecosystem		Compilation of policy support	Same as Outcome 2.1	Same as Outcome 2.1	Same as Outcome 2.1	Same as Outcome	Same as Outcome 2.1

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	of biodiversity and ecosystem services into the policy and regulatory framework of support programs at different levels		services mainstreaming prompted by the project		elements as monitored under outcome 2.1				2.1	
Component 1										
Outcome 1.1: Stakeholders and decision makers at state and local level have increased access to Ecosystem Services tools applicable to biodiversity conservation and sustainable use	1. Number of targeted ES tools in support of biodiversity conservation available 2. Number of Government officials and stakeholders trained in the use of ES tools for biodiversity conservation	There is a lack of key ES tools for biodiversity conservation. Expertise at the state and local level in the application of ES tools for biodiversity conservation is suboptimal.	Targeted ES tools in support of biodiversity conservation designed and distributed 40 Trained state and local officials in the four project potential intervention areas on the application of ES methodologies and tools.	Targeted ES tools in support of biodiversity conservation revised 80 Trained state and local officials in the four project potential intervention areas on the application of ES methodologies and tools.	Manual distribution log Manual and materials opinion survey Distribution progress reports Distribution and discussion meeting workshops reports	20 federal, state and local institutions at the end of two years 10 training workshops at the end of two years	Decision-makers, stakeholders and institutions at the state level Government officials and stakeholders at the state level	PCU with assistance of the project's inter-institutional working group and project implementing partners PCU assisted by the project's inter-institutional working group and project implementing partners	July-Aug 2012 July-Aug 2012	Survey to IIWG members: 40@$5 each=$200 Survey to IIWG members: 40@$5 each=$200
Outcome 1.2: Natural Resources, ecosystem services and biodiversity in	1. Application of project products for assessing and valuing ecosystem services	Ecosystem services and biodiversity in the project intervention area is not	3 assessments incl. valuation of critical ecosystems,	6 assessments incl. valuation of critical ecosystems, watersheds and characteristic	GIS and data base Use GIS and data base Manual	20 federal, state and local institutions annually beginning in 2012	Federal, state and local institutions in the State of Oaxaca	PCU with assistance of the project's inter-institutional	July-Aug 2012 July-Aug 2013 July-Aug	Survey to IIWG members: 160@$5 each=$800

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
the project intervention area are assessed, valued and monitored using the new ES tools and knowledge provided through the project	(emphasizing areas of outcome 3.1, 3.2 and 3.3) 2. Number of applications of the project's GIS on the intervention area's ecosystem services and biodiversity (emphasizing areas under component 3)	sufficiently appraised Baseline data on the current distribution of biodiversity and ecosystem services in the project intervention area will be established commencing in PY1 and continued henceforth by monitoring and assessment under this outcome.	watersheds and characteristic species priority studies. A working matrix of priority ecosystem services, characteristic species biodiversity and sustainable use studies for the project intervention area 4 institutions provide key information for GIS and utilize it as a planning and monitoring tool in the project intervention area (emphasizing areas under component 3).	species priority studies. A working matrix of priority ecosystem services, characteristic species biodiversity and sustainable use studies for the project intervention area 8 institutions provide key information for GIS and utilize it as a planning and monitoring tool in the project intervention area (emphasizing areas under component 3). Monitoring system for the intervention area in	Technical documents and reports Meeting agreement records of COPLADE´s regional inter-institutional working group. Meeting agreement records of Tlaxiaco, Huajuapan, and Mixtec River Committees, meetings agreements records Project progress reports Mid-term evaluation and terminal evaluation report	20 federal, state and local institutions annually beginning in 2012 Entire group receiving project products at project mid-term Entire group of users on a yearly basis	Federal, state and local institutions in the State of Oaxaca Federal, state and local institutions in the State of Oaxaca Users within and outside Mexico	working group PCU assisted by the project's inter-institutional working group PCU assisted by project implementing partners PCU	2014 June-July 2015 July-Aug 2012 July-Aug 2013 July-Aug 2014 June-July 2015 Jan 2013 July 2011 July 2012 July 2013 July 2014 July 2015	Survey to IIWG members: 160@$5 each=$800 Survey to partners: 10@$5 each=$50

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
			Monitoring system for the intervention area in operation Two models and analysis tools on the balance between the supply of ecosystem services and primary subsistence options in place	operation Four models and analysis tools on the balance between the supply of ecosystem services and primary subsistence options developed and applied						
Component 2										
Outcome 2.1: Biodiversity and Ecosystem Service considerations are integrated into state and federal support programs and land use planning	1. Acceptance of biodiversity and ecosystem service considerations into the policy and regulatory framework of support programs at the state, regional and local levels	Ecosystem considerations have not been integrated into state and federal support programs and land use planning in the Mixteca region of Oaxaca. Priority zones	Ecosystem services and biodiversity considerations have been introduced as priority criteria for the approval of support programs by COPLADE´s regional inter-institutional working group.	Ecosystem services and biodiversity considerations have been introduced as priority criteria for the approval of support programs by COPLADE´s regional inter-institutional working group, regional committees, and	Meeting agreement records of COPLADE´s regional inter-institutional working group. Meeting agreement records of Tlaxiaco, Huajuapan, and Mixtec River Committees Municipal council and	All meetings on a yearly basis All meetings on a yearly basis 20 federal, state	Members of the project's inter-institutional group in Oaxaca, CCRNs in Tlaxiaco and Huajuapan Federal, state	PCU PCU with	May 2011 May 2012 May 2013 May 2014 July 2015 July-Aug	Survey to

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	2. Number of pilot implementation cases of federal and state supported programs including land use plans for the Mixteca region of Oaxaca, that mainstream ES and biodiversity conservation in their regulatory framework	for the regional COPLADE´s inter-institutional working group not defined. Communities and/or municipalities do not incorporate the subject of ecosystem services and biodiversity in their annual work programs. Local application of federal and state supported programs including land use plans for the Mixteca region of Oaxaca, do not mainstream ES and biodiversity conservation	Four project piloting areas were accepted as priority zones for the regional COPLADE´s inter-institutional working group 10 communities and/or municipalities incorporate the subject of ecosystem services and biodiversity in their annual work programs 30 local pilot projects using watershed approach to improve biodiversity and ecosystem	communities and/or municipalities Eight project piloting areas were accepted as priority zones for the regional COPLADE´s inter-institutional working group, and regional committees 30 communities and/or municipalities incorporate the subject of ecosystem services and biodiversity in their annual work programs 60 local pilot projects using watershed approach to improve biodiversity and	Community and/or Ejido Assembly minutes Municipal development plans Land use plans Municipal council and Community and/or Ejido Assembly minutes Mid-term evaluation and terminal evaluation reports	and local institutions annually beginning in 2012	and local institutions in the State of Oaxaca	assistance of the project's inter-institutional working group	2012 July-Aug 2013 July-Aug 2014 June-July	IIWG members: 120@$5 each=$600

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
			services status are supported by the CRRN´s and the CCRM, as well as by State and federal programs	ecosystem services status are supported by the CRRN´s and the CCRM, as well as by State and federal programs						
Component 3										
Outcome 3.1: Local stakeholders apply the ecosystem approach for planning and implementation of productive activities and biodiversity conservation	1. Number of trained producers that apply the ecosystem approach in planning and implementing productive activities and in biodiversity conservation	Local stakeholders are not applying the ecosystem approach in productive activities and biodiversity conservation.	50 local stakeholders apply the ecosystem approach in planning and implementing productive activities and in biodiversity conservation	100 local stakeholders apply the ecosystem approach in planning and implementing productive activities and in biodiversity conservation	Lists of training assistance. Verification by project staff recorded in planning and follow up field logs and local initiative reports List of participants in the watersheds models for rural development	8 training workshops and activities each year x 4 years (totaling 32), every six months beginning in 2012	Local stakeholders, particularly producers, in the four project intervention areas in the Oaxacan Mixteca	PCU assisted by the pilot demonstration project teams and project implementing partners	Jan 2012 July 2012 Jan 2013 July 2013 Jan 2014 July 2014 Jan 2015 July 2015	Survey to project teams and partners: 176@$5 each=$880 Field inspections by 2 staff: 8@ $300 each=$2,400
	2. Surface area of lands applying integrated land use planning of good practices in agriculture and natural resource management	Baseline assessment to be finalized in PY1	5,000 ha of land including productive and conservation areas above baseline	10,000 ha of land including productive and conservation areas above baseline	Acceptance letters by local stakeholders of the value of utilizing the ecosystem approach	Entire surface of four project intervention areas annually beginning in 2012	Pilot demonstration project teams, project implementing partners and project GIS expert in Oaxaca	PCU assisted by the pilot demonstration project teams and project implementing partners	Feb-Apr 2012 Feb-Apr 2013 Feb-Apr 2014 Feb-Apr 2015	Survey to project teams and partners: 80@$5 each=$400 Field inspections by 2 staff: 4@ $300 each=$1,200
		Baseline	Five on the	Ten on the	Meeting					

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	3. Application of productive protocols based on models from 1.2 for rural development based on the ES approach and good practices in agriculture and natural resource management 4. Number of projects resulting from support to rural community planning processes 5. Number of local tourism strategic routes, tour operators and hotel operators promoting alternative tourism. 6. Number of	assessment to be finalized in PY1 Community planning is at an incipient stage in the project intervention area, in particular regarding ES and BD considerations The development of alternative tourism based on biodiversity, natural attractions and agro-ecosystems is at an incipient stage.	ground applications of models for rural development based on the ES approach and good practices in agriculture and natural resource management. 10 community planning processes in priority communities in the project intervention area, 2 regional natural resources committees planning process. One alternative tourism strategic route based on biological diversity,	ground applications of models for rural development based on the ES approach and good practices in agriculture and natural resource management. 30 community planning processes in priority communities in the project intervention area, 2 regional natural resources committees planning process. Two alternative tourism strategic routes based on biological diversity, natural attractions and agroecosystems.	agreement participating communities records Meeting agreement records of Tlaxiaco, Huajuapan, and Mixtec River Committees, meetings agreements records SAGARPA, SEDER, and CONANP to provide verification Verification by SECTUR of integration of alternative tourism into state and local plans and strategies Mid-term evaluation and terminal evaluation report	Within four areas of project intervention annually beginning in 2012 All published project outputs related to GAP and GNRMP annually beginning in 2012	Tourism sector in Oaxaca, particularly within the four project intervention areas Pilot demonstration project teams in four intervention areas	PCU with the assistance of SECTUR PCU assisted by all project implementing partners	Oct 2012 Oct 2013 Oct 2014 May 2015 Mar 2012 Mar 2013 Mar 2014 Mar 2015	Survey to SECTUR and sector stakeholders: 80@$5 each=$400 Survey to partners: 40@$5 each=$200

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	persons trained, certified and hired as local ecotourism guides 7. Products with potential for marketing strategy of conservation goods and services	No marketing strategy in the region for certified products derived from sustainable management and conservation of natural resources and ecosystem services	natural attractions and agroecosystems. 10 local stakeholders are trained and certified as local ecotourism guides	20 local stakeholders are trained and certified as local ecotourism guides A technical proposal for the marketing of goods and services related certification programs						
Outcome 3.2: The supply of key Ecosystem Services is secured, improving ecosystem resilience and leading to improved livelihoods	1. Surface area of degraded lands and ecosystems that have been rehabilitated or are in process of rehabilitation Surface area of increase in natural vegetation cover, which reflects an improvement in the provision of ecosystem services, including carbon	Ecosystem services provided by fragile ecosystems in the Mixteca of Oaxaca are in a state of deterioration as a result of growing population pressure, deforestation and unsustainable practices in agriculture and natural resource	4500 ha of degraded lands reforested, rehabilitated or in the process of rehabilitation	9000 ha of degraded lands reforested, rehabilitated or in the process of rehabilitation	Participant list with reforested and rehabilitated areas. Meeting agreement participating communities records Acceptance letters by local stakeholders Lists of training assistance Technical	Entire surface of four project intervention areas annually beginning in 2012	Pilot demonstration project teams, project implementing partners and project GIS expert in Oaxaca Households in 10 selected communities of the Oaxacan Mixteca	PCU assisted by the pilot demonstration project teams and project implementing partners	Feb-April 2012 Feb-April 2013 Feb-April 2014 Feb-April 2015	Survey to project teams and partners: 80@$5 each=$400 Field inspections by 2 staff: 4@ $300 each=$1,200

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	sequestration, availability of water, soil rehabilitation and biodiversity conservation	management, further exacerbating the livelihoods of local and indigenous communities.			documents and reports lama-bordo system	Total number of households in selected communities on a yearly basis	Lama bordo pilot demonstration project teams and project GIS expert in Oaxaca	PCU assisted by the pilot demonstration project teams	Nov-Dec 2011 Nov-Dec 2012 Nov-Dec 2013 Nov-Dec 2014	Survey to project teams and partners: 80@$5 each=$400
	2. Use of fuelwood efficient stoves		5 communities use fuelwood efficient stoves including the establishment of fuelwood plantations based on native species.	10 communities use fuelwood efficient stoves including the establishment of fuelwood plantations based on native species.	Techinical evaluation of fuelwood efficient stoves Project progress reports Mid-term evaluation and terminal evaluation report	Entire surface of four project intervention areas annually beginning in 2012	Lama bordo pilot demonstration project teams and sociologist/ anthropologist in Oaxaca	PCU assisted by lama bordo pilot demonstration project teams and project implementing partners	Feb-April 2012 Feb-April 2013 Feb-April 2014 Feb-April 2015	Survey to project teams and partners: 40@$5 each=$200 Field inspections by 2 staff: 4@ $300 each=$1,200
	3. Use of *lama-bordo* agricultural terraces for cultivating native plants such as maize, chile, squash, amaranth, and cacti, among others	*Lama-bordo* agricultural terraces, while widespread in the Mixteca during the precolombian period, were largely abandoned as an agricultural management system after European contact.	5 pilot demonstration projects for rehabilitating lama-bordo systems, testing, monitoring and demonstrating	10 pilot demonstration projects for rehabilitating lama-bordo systems, testing, monitoring and demonstrating		All published project outputs on results and lessons learned from the lama bordo pilot demonstration projects annually beginning in 2011		PCU assisted by project implementing partners	Sept 2011 Sept 2012 Sept 2013 Sept 2014	Survey to project partners: 40@$5 each=$200
	4. Comparative quantitative and qualitative data on soil quality within and outside *lama-*		20 Trained local producers in the use of lama-bordo techniques.	40 Trained local producers in the use of lama-bordo techniques.						

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	bordo agricultural terraces			5 communities of the use *of lama-bordo* terraces as an agricultural management approach						
Outcome 3.3: Improved land use planning and management practices lead to increased habitat connectivity for globally significant biodiversity within the project intervention area as assessed and monitored under outcome 1.2	1. Advancement in the processes for the establishment of voluntary reserves and related management plans 2. Advancement in the processes for the establishment of biological corridors, and their management plans, connecting	Detailed baseline information on the status of degraded lands and ecosystems as on connectivity of habitat area and corridors in the project intervention area will be established under OUTCOME 1.2 in PY1 and monitored henceforth	Potential Community Conservation Areas identified; 5 Certification process for establishing AVDCs (Areas Voluntarily Destined for Conservation). Potential communities for the establishment of biological corridors Establishment of one biological corridor connecting	10 Certification process for establishing AVDCs. 5 Management plans for AVDCs. Establishment of 2 biological corridors connecting protected areas with well preserved forests Management plans for one biological	Technical documents and reports for potential community conservation and biological corridors Communities agreement for AVDCs CONANP´ AVDCs certification process files Management Plans Technical documents Management Plans communities accepted letter GIS and data base	20 federal, state and local institutions annually beginning in 2012 Within four project intervention areas annually beginning in 2012 Within four project intervention areas annually beginning in2012	Federal, state and local institutions in the State of Oaxaca CONANP in four project intervention areas CONANP in four project intervention areas	PCU assisted by the project's inter-institutional working group CONANP CONANP	May-June 2012 May-June 2013 May-June 2014 May-June 2015 Oct 2012 Oct 2013 Oct 2014 June 2015 Nov 2012 Nov 2013 Nov 2014 June 2015	Survey to IIWG members: 160@$5 each=$800 Survey to CONANP: 10@$5 each=$50 Survey to CONANP: 10@$5 each=$50 Field inspections by 2 staff: 4@ $300 each=$1,200

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
	protected areas 3. Number of persons trained for implementation of management plans for AVDCs and biological corridors		protected areas with well preserved forests.	corridor. 10 Trained local stakeholders participating in the implementation of management plans for AVDCs and biological corridors						
Component 4										
Outcome 4.1: Project findings, tools and methodologies made available to state and federal decision makers as well as the public, and relevant interest groups	1. Public and private sector organizations at the state, federal and local levels have been provided with information materials and tool kits on project findings, tools and methodologies	An inventory of ES materials found that very little of practical use has been disseminated to state and federal decision makers, stakeholders and the public.	Tool kit for the application of ES tools and methodologies for decision-makers at the state and federal levels. Tool kit in Spanish and the Mixteco language on	Systematization of methodologies and tools developed by the project, as well as results and findings. Tool kit for the application of ES tools and	Records of dissemination of project findings, tools and methodologies Press conferences, press releases, publication launches and other public events for disseminating project findings and information Training workshops and activities on	Entire group receiving information materials and tool kits on project findings annually beginning in 2013 All meetings annually beginning in 2013	Public and private sector organizations at the state, federal and local levels in Oaxaca and throughout Mexico	PCU assisted by project implementing partners PCU assisted by the project's inter-institutional	May 2013 May 2014 May 2015 May 2013 May 2014 May 2015	Survey to project partners: 40@$5 each=$200

Objective / Outcome	Outcome / objective level indicator	Baseline Conditions	Mid point Target (as relevant)	End of Project Target	Means of Verification	Monitoring / sampling (frequency / size)	Location / Group	Responsibility	Time frame	Budget (Object of expenditure & cost)
			ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities.	methodologies for decision-makers at the state and federal levels. Tool kit in Spanish and the Mixteco language on ES tools and methodologies and good practices in agriculture and natural resource management for use by local communities.	project findings, tools and methodologies with state and federal organizations and stakeholders Mid-term evaluation and terminal evaluation report			working group		
Outcome 4.2: Coordination and cooperation established with synergic initiatives and other projects	1. Level of advance in knowledge management exchanges on terrestrial ecosystem approach matters	No community of practice exists to dialogue and share lessons learned across the ecosystem management portfolio of GEF projects. Initial database of potential projects to be established in PY1	Community of practice established and UNEP's GEF funded projects related to terrestrial ecosystem management in the LAC region participating	Community of practice extended to all of UNEP's GEF funded projects related to terrestrial ecosystem management	Half year progress reports and PIRs Mid-term evaluation and terminal evaluation report Steering Committee meetings reports	All consultations on a yearly basis All inputs through the adoption of the outreach and dissemination strategy	PCU in Oaxaca and UNEP/EMP in Nairobi PCU in Oaxaca and UNEP/EMP in Nairobi	PCU with UNEP/DGEF PCU with UNEP/DGEF	Dec 2014 Sept. 2013	No additional cost

2. **Cost of acquisition of essential baseline data during first year of project:**	$45,000
3. **Cost of project inception workshop:** $15,000 covered under component 1 Location: Oaxaca Number of participations: 30 - 40	
4. **Cost of Mid-Term Review/Evaluation:**	$20,000
5. **Cost of Terminal Evaluation:**	$25,000
6. **Any additional M&E costs:**	
º Project Steering Committee meetings	$40,000
º Cost of all surveys related to follow up of key indicators is covered by communication and travel budgets as well as by staff time in relevant components.	
Total costs: (reflected in component 5 M&E)	$130,000

Appendix 8 – **Reporting requirements**	**Due date**	**Format appended to legal instrument as**	**Responsibility of**
Procurement plan (goods and services)	2 weeks before project inception meeting	N/A	Project Manager
Inception Report	1 month after project inception meeting	N/A	Project Manager
Expenditure report accompanied by explanatory notes	Quarterly on or before 30 April, 31 July, 31 October, 31 January	**Annex 11**	Project Manager
Cash Advance request and details of anticipated disbursements	Quarterly or when required	**Annex 7B**	Project Manager
Progress report	Half-yearly on or before 31 January	**Annex 8**	Project Manager
Audited report for expenditures for year ending 31 December	Yearly on or before 30 June	N/A	Executing partner to contract firm
Inventory of non-expendable equipment	Yearly on or before 31 January	**Annex 6**	Project Manager
Co-financing report	Yearly on or before 31 July	**Annex 12**	Project Manager
Project implementation review (PIR) report	Yearly on or before 31 August	**Annex 9**	Project Manager, TM, DGEF FMO
Minutes of steering committee meetings	Yearly (or as relevant)	N/A	Project Manager
Mission reports and “aide memoire” for executing agency	Within 2 weeks of return	N/A	TM, DGEF FMO
Final report	2 months of project completion date	**Annex 10**	Project Manager
Final inventory of non-expendable equipment		**Annex 9**	Project Manager
Equipment transfer letter		**Annex 10**	Project Manager
Final expenditure statement	3 months of project completion date	**Annex 11**	Project Manager
Mid-term review or Mid-term evaluation	Midway though project	N/A	TM or EOU (as relevant)
Final audited report for expenditures of project	6 months of project completion date	N/A	Executing partner to contract firm
Independent terminal evaluation report	6 months of project completion date	Appendix 9 to Annex 1	EOU

APPENDIX 9 - STANDARD TERMINAL EVALUATION TERMS OF REFERENCE

Terminal Evaluation of the UNEP GEF project {Title}

1. PROJECT BACKGROUND AND OVERVIEW

Project rationale

The objective was stated as:

The indicators given in the project document for this stated objective were:

Relevance to GEF Programmes
The project is in line with:.

Executing Arrangements
The implementing agency(ies) for this project was (were) UNEP and { }; and the executing agencies were:

The lead national agencies in the focal countries were:

Project Activities
The project comprised activities grouped in {number} components.

Budget

At project inception the following budget prepared:

	GEF	Co-funding
Project preparation funds:		
GEF {Medium/Full} Size Grant		
TOTAL (including project preparation funds)		

Co-funding sources:

Anticipated:

APPENDIX 9
TERMS OF REFERENCE FOR THE EVALUATION

1. Objective and Scope of the Evaluation

The objective of this terminal evaluation is to examine the extent and magnitude of any project impacts to date and determine the likelihood of future impacts. The evaluation will also assess project performance and the implementation of planned project activities and planned outputs against actual results. The evaluation will focus on the following main questions:

1. Did the project help to { } among key target audiences (international conventions and initiatives, national level policy-makers, regional and local policy-makers, resource managers and practitioners).
2. Did the outputs of the project articulate options and recommendations for { }? Were these options and recommendations used? If so by whom?
3. To what extent did the project outputs produced have the weight of scientific authority and credibility necessary to influence policy makers and other key audiences?

Methods

This terminal evaluation will be conducted as an in-depth evaluation using a participatory approach whereby the UNEP/DGEF Task Manager, key representatives of the executing agencies and other relevant staff are kept informed and consulted throughout the evaluation. The consultant will liaise with the UNEP/EOU and the UNEP/DGEF Task Manager on any logistic and/or methodological issues to properly conduct the review in as independent a way as possible, given the circumstances and resources offered. The draft report will be circulated to UNEP/DGEF Task Manager, key representatives of the executing agencies and the UNEP/EOU. Any comments or responses to the draft report will be sent to UNEP / EOU for collation and the consultant will be advised of any necessary or suggested revisions.

The findings of the evaluation will be based on the following:

1. A desk review of project documents including, but not limited to:
   (a) The project documents, outputs, monitoring reports (such as progress and financial reports to UNEP and GEF annual Project Implementation Review reports) and relevant correspondence.
   (b) Notes from the Steering Group meetings.
   (c) Other project-related material produced by the project staff or partners.
   (d) Relevant material published on the project web-site:{ }.

2. Interviews with project management and technical support including {NEED INPUT FROM TM HERE}

3. Interviews and Telephone interviews with intended users for the project outputs and other stakeholders involved with this project, including in the participating countries and international bodies. The Consultant shall determine whether to seek additional information and opinions from representatives of donor agencies and other organizations. As appropriate, these interviews could be combined with an email questionnaire.

4. Interviews with the UNEP/DGEF project task manager and Fund Management Officer, and other relevant staff in UNEP dealing with {relevant GEF focal area(s)}-related activities as necessary. The Consultant shall also gain broader perspectives from discussions with relevant GEF Secretariat staff.

5. Field visits[1] to project staff

Key Evaluation principles.
In attempting to evaluate any outcomes and impacts that the project may have achieved, evaluators should remember that the project's performance should be assessed by considering the difference between the answers to two simple questions ***"what happened?***" and ***"what would have happened anyway?"***. These questions imply that there should be consideration of the baseline conditions and trends in relation to the intended project outcomes and impacts. In addition it implies that there should be plausible evidence to **attribute** such outcomes and impacts **to the actions of the project**.

Sometimes, adequate information on baseline conditions and trends is lacking. In such cases this should be clearly highlighted by the evaluator, along with any simplifying assumptions that were taken to enable the evaluator to make informed judgements about project performance.

2. Project Ratings

The success of project implementation will be rated on a scale from 'highly unsatisfactory' to 'highly satisfactory'. In particular the evaluation shall **assess and rate** the project with respect to the eleven categories defined below:[2]

A. Attainment of objectives and planned results:

The evaluation should assess the extent to which the project's major relevant objectives were effectively and efficiently achieved or are expected to be achieved and their relevance.

- *Effectiveness:* Evaluate how, and to what extent, the stated project objectives have been met, taking into account the "achievement indicators". The analysis of outcomes achieved should include, *inter alia*, an assessment of the extent to which the project has directly or indirectly assisted policy and decision-makers to apply information supplied by biodiversity indicators in their national planning and decision-making. In particular:
  - Evaluate the immediate impact of the project on {relevant focal area} monitoring and in national planning and decision-making and international understanding and use of biodiversity indicators.
  - As far as possible, also assess the potential longer-term impacts considering that the evaluation is taking place upon completion of the project and that longer term impact is expected to be seen in a few years time. Frame recommendations to enhance future project impact in this context. Which will be the major 'channels' for longer term impact from the project at the national and international scales?
    - *Relevance*: In retrospect, were the project's outcomes consistent with the focal areas/operational program strategies? Ascertain the nature and

[1] Evaluators should make a brief courtesy call to GEF Country Focal points during field visits if at all possible.
[2] However, the views and comments expressed by the evaluator need not be restricted to these items.

significance of the contribution of the project outcomes to the {relevant Convention(s)} and the wider portfolio of the GEF.

- *Efficiency*: Was the project cost effective? Was the project the least cost option? Was the project implementation delayed and if it was, then did that affect cost-effectiveness? Assess the contribution of cash and in-kind co-financing to project implementation and to what extent the project leveraged additional resources. Did the project build on earlier initiatives, did it make effective use of available scientific and / or technical information. Wherever possible, the evaluator should also compare the cost-time vs. outcomes relationship of the project with that of other similar projects.

B. Sustainability:

Sustainability is understood as the probability of continued long-term project-derived outcomes and impacts after the GEF project funding ends. The evaluation will identify and assess the key conditions or factors that are likely to contribute or undermine the persistence of benefits after the project ends. Some of these factors might be outcomes of the project, e.g. stronger institutional capacities or better informed decision-making. Other factors will include contextual circumstances or developments that are not outcomes of the project but that are relevant to the sustainability of outcomes. The evaluation should ascertain to what extent follow-up work has been initiated and how project outcomes will be sustained and enhanced over time.

Five aspects of sustainability should be addressed: financial, socio-political, institutional frameworks and governance, environmental (if applicable). The following questions provide guidance on the assessment of these aspects:

- *Financial resources.* Are there any financial risks that may jeopardize sustenance of project outcomes? What is the likelihood that financial and economic resources will not be available once the GEF assistance ends (resources can be from multiple sources, such as the public and private sectors, income generating activities, and trends that may indicate that it is likely that in future there will be adequate financial resources for sustaining project's outcomes)? To what extent are the outcomes of the project dependent on continued financial support?
- *Socio-political:* Are there any social or political risks that may jeopardize sustenance of project outcomes? What is the risk that the level of stakeholder ownership will be insufficient to allow for the project outcomes to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project?
- *Institutional framework and governance.* To what extent is the sustenance of the outcomes of the project dependent on issues relating to institutional frameworks and governance? What is the likelihood that institutional and technical achievements, legal frameworks, policies and governance structures and processes will allow for, the project outcomes/benefits to be sustained? While responding to these questions consider if the required systems for accountability and transparency and the required technical know-how are in place.
- *Environmental.* Are there any environmental risks that can undermine the future flow of project environmental benefits? The TE should assess whether certain activities in the project area will pose a threat to the sustainability of the project outcomes. For example; construction of dam in a protected area could inundate a

sizable area and thereby neutralize the biodiversity-related gains made by the project; or, a newly established pulp mill might jeopardise the viability of nearby protected forest areas by increasing logging pressures; or a vector control intervention may be made less effective by changes in climate and consequent alterations to the incidence and distribution of malarial mosquitoes.

C. Achievement of outputs and activities:

- Delivered outputs: Assessment of the project's success in producing each of the programmed outputs, both in quantity and quality as well as usefulness and timeliness.
- Assess the soundness and effectiveness of the methodologies used for developing the technical documents and related management options in the participating countries
- Assess to what extent the project outputs produced have the weight of scientific authority / credibility, necessary to influence policy and decision-makers, particularly at the national level.

D. Catalytic Role

Replication and catalysis. What examples are there of replication and catalytic outcomes? Replication approach, in the context of GEF projects, is defined as lessons and experiences coming out of the project that are replicated or scaled up in the design and implementation of other projects. Replication can have two aspects, replication proper (lessons and experiences are replicated in different geographic area) or scaling up (lessons and experiences are replicated within the same geographic area but funded by other sources). Specifically:

- Do the recommendations for management of {project} coming from the country studies have the potential for application in other countries and locations?

If no effects are identified, the evaluation will describe the catalytic or replication actions that the project carried out.

E. Assessment monitoring and evaluation systems.

The evaluation shall include an assessment of the quality, application and effectiveness of project monitoring and evaluation plans and tools, including an assessment of risk management based on the assumptions and risks identified in the project document. The Terminal Evaluation will assess whether the project met the minimum requirements for 'project design of M&E' and 'the application of the Project M&E plan' (see minimum requirements 1&2 in *Annex 4* to this Appendix). GEF projects must budget adequately for execution of the M&E plan, and provide adequate resources during implementation of the M&E plan. Project managers are also expected to use the information generated by the M&E system during project implementation to adapt and improve the project.

M&E during project implementation

- *M&E design.* Projects should have sound M&E plans to monitor results and track progress towards achieving project objectives. An M&E plan should include a baseline (including data, methodology, etc.), SMART indicators (see Annex 4) and data analysis systems, and evaluation studies at specific times to assess results. The time frame for various M&E activities and standards for outputs should have been specified.
- *M&E plan implementation.* A Terminal Evaluation should verify that: an M&E system was in place and facilitated timely tracking of results and progress

towards projects objectives throughout the project implementation period (perhaps through use of a logframe or similar); annual project reports and Progress Implementation Review (PIR) reports were complete, accurate and with well justified ratings; that the information provided by the M&E system was used during the project to improve project performance and to adapt to changing needs; and that projects had an M&E system in place with proper training for parties responsible for M&E activities.

- *Budgeting and Funding for M&E activities.* The terminal evaluation should determine whether support for M&E was budgeted adequately and was funded in a timely fashion during implementation.

F. Preparation and Readiness

Were the project's objectives and components clear, practicable and feasible within its timeframe? Were the capacities of executing institution and counterparts properly considered when the project was designed? Were lessons from other relevant projects properly incorporated in the project design? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project implementation? Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place?

G. Country ownership / driveness:

This is the relevance of the project to national development and environmental agendas, recipient country commitment, and regional and international agreements. The evaluation will:

- Assess the level of country ownership. Specifically, the evaluator should assess whether the project was effective in providing and communicating biodiversity information that catalyzed action in participating countries to improve decisions relating to the conservation and management of the focal ecosystem in each country.
- Assess the level of country commitment to the generation and use of biodiversity indicators for decision-making during and after the project, including in regional and international fora.

H. Stakeholder participation / public awareness:

This consists of three related and often overlapping processes: information dissemination, consultation, and "stakeholder" participation. Stakeholders are the individuals, groups, institutions, or other bodies that have an interest or stake in the outcome of the GEF-financed project. The term also applies to those potentially adversely affected by a project. The evaluation will specifically:

- Assess the mechanisms put in place by the project for identification and engagement of stakeholders in each participating country and establish, in consultation with the stakeholders, whether this mechanism was successful, and identify its strengths and weaknesses.
- Assess the degree and effectiveness of collaboration/interactions between the various project partners and institutions during the course of implementation of the project.
- Assess the degree and effectiveness of any various public awareness activities that were undertaken during the course of implementation of the project.

I. Financial Planning

Evaluation of financial planning requires assessment of the quality and effectiveness of financial planning and control of financial resources throughout the project's lifetime.

Evaluation includes actual project costs by activities compared to budget (variances), financial management (including disbursement issues), and co- financing. The evaluation should:

- Assess the strength and utility of financial controls, including reporting, and planning to allow the project management to make informed decisions regarding the budget and allow for a proper and timely flow of funds for the payment of satisfactory project deliverables.
- Present the major findings from the financial audit if one has been conducted.
- Identify and verify the sources of co- financing as well as leveraged and associated financing (in co-operation with the IA and EA).
- Assess whether the project has applied appropriate standards of due diligence in the management of funds and financial audits.
- The evaluation should also include a breakdown of final actual costs and co-financing for the project prepared in consultation with the relevant UNEP/DGEF Fund Management Officer of the project (table attached in *Annex 1* to this Appendix Co-financing and leveraged resources).

J. Implementation approach:

This includes an analysis of the project's management framework, adaptation to changing conditions (adaptive management), partnerships in implementation arrangements, changes in project design, and overall project management. The evaluation will:

- Ascertain to what extent the project implementation mechanisms outlined in the project document have been closely followed. In particular, assess the role of the various committees established and whether the project document was clear and realistic to enable effective and efficient implementation, whether the project was executed according to the plan and how well the management was able to adapt to changes during the life of the project to enable the implementation of the project.
- Evaluate the effectiveness and efficiency and adaptability of project management and the supervision of project activities / project execution arrangements at all levels (1) policy decisions: Steering Group; (2) day to day project management in each of the country executing agencies and {lead executing agency}.

K. UNEP Supervision and Backstopping

- Assess the effectiveness of supervision and administrative and financial support provided by UNEP/DGEF.
- Identify administrative, operational and/or technical problems and constraints that influenced the effective implementation of the project.

The ***ratings will be presented in the form of a table***. Each of the eleven categories should be rated separately with **brief justifications** based on the findings of the main analysis. An overall rating for the project should also be given. The following rating system is to be applied:

HS = Highly Satisfactory
S = Satisfactory
MS = Moderately Satisfactory
MU = Moderately Unsatisfactory
U = Unsatisfactory
HU = Highly Unsatisfactory

3. <u>Evaluation report format and review procedures</u>

The report should be brief, to the point and easy to understand. It must explain; the purpose of the evaluation, exactly what was evaluated and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should be presented in a way that makes the information accessible and comprehensible and include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

The evaluation will rate the overall implementation success of the project and provide individual ratings of the eleven implementation aspects as described in Section 1 of this TOR. *The ratings will be presented in the format of a table* **with brief justifications based on the findings of the main analysis.**

Evidence, findings, conclusions and recommendations should be presented in a complete and balanced manner. Any dissident views in response to evaluation findings will be appended in an annex. The evaluation report shall be written in English, be of no more than 50 pages (excluding annexes), use numbered paragraphs and include:

i) An **executive summary** (no more than 3 pages) providing a brief overview of the main conclusions and recommendations of the evaluation;

ii) **Introduction and background** giving a brief overview of the evaluated project, for example, the objective and status of activities; The GEF Monitoring and Evaluation Policy, 2006, requires that a TE report will provide summary information on when the evaluation took place; places visited; who was involved; the key questions; and, the methodology.

iii) **Scope, objective and methods** presenting the evaluation's purpose, the evaluation criteria used and questions to be addressed;

iv) **Project Performance and Impact** providing *factual evidence* relevant to the questions asked by the evaluator and interpretations of such evidence. This is the main substantive section of the report. The evaluator should provide a commentary and analysis on all eleven evaluation aspects (A − K above).

v) **Conclusions and rating** of project implementation success giving the evaluator's concluding assessments and ratings of the project against given evaluation criteria and standards of performance. The conclusions should provide answers to questions about whether the project is considered good or bad, and whether the results are considered positive or negative. The ratings should be provided with a brief narrative comment in a table (see *Annex 1* to this Appendix);

vi) **Lessons (to be) learned** presenting general conclusions from the standpoint of the design and implementation of the project, based on good practices and successes or problems and mistakes. Lessons should have the potential for wider application and use. All lessons should 'stand alone' and should:

- Briefly describe the context from which they are derived
- State or imply some prescriptive action;
- Specify the contexts in which they may be applied (if possible, who when and where)

vii) **Recommendations** suggesting *actionable* proposals for improvement of the current project. In general, Terminal Evaluations are likely to have very few (perhaps two or three) actionable recommendations.

Prior to each recommendation, the issue(s) or problem(s) to be addressed by the recommendation should be clearly stated.

A high quality recommendation is an actionable proposal that is:

1. Feasible to implement within the timeframe and resources available
2. Commensurate with the available capacities of project team and partners
3. Specific in terms of who would do what and when
4. Contains results-based language (i.e. a measurable performance target)
5. Includes a trade-off analysis, when its implementation may require utilizing significant resources that would otherwise be used for other project purposes.

viii) **Annexes** may include additional material deemed relevant by the evaluator but must include:

1. The Evaluation Terms of Reference,
2. A list of interviewees, and evaluation timeline
3. A list of documents reviewed / consulted
4. Summary co-finance information and a statement of project expenditure by activity
5. The expertise of the evaluation team. (brief CV).

TE reports will also include any response / comments from the project management team and/or the country focal point regarding the evaluation findings or conclusions as an annex to the report, however, such will be appended to the report by UNEP EOU.

Examples of UNEP GEF Terminal Evaluation Reports are available at www.unep.org/eou

Review of the Draft Evaluation Report

Draft reports submitted to UNEP EOU are shared with the corresponding Programme or Project Officer and his or her supervisor for initial review and consultation. The DGEF staff and senior Executing Agency staff are allowed to comment on the draft evaluation report. They may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. The consultation also seeks feedback on the proposed recommendations. UNEP EOU collates all review comments and provides them to the evaluators for their consideration in preparing the final version of the report.

4. Submission of Final Terminal Evaluation Reports.

The final report shall be submitted in electronic form in MS Word format and should be sent to the following persons:

Segbedzi Norgbey, Chief,
UNEP Evaluation and Oversight Unit
P.O. Box 30552-00100
Nairobi, Kenya
Tel.: +(254-20)762-4181
Fax: +(254-20)762-3158

Email: Segbedzi.Norgbey@unep.org

With a copy to:

Maryam Niamir-Fuller,
Director
UNEP/Division of GEF Coordination
P.O. Box 30552-00100
Nairobi, Kenya
Tel: +(254-20)762-4166
Fax: +(254-20)762-4041/2
Email: Maryam.Niamir-Fuller@unep.org

{Name}
Task Manager
{Contact details}

The Final evaluation will also be copied to the following GEF National Focal Points.

{Insert contact details here}

The final evaluation report will be published on the Evaluation and Oversight Unit's web-site www.unep.org/eou and may be printed in hard copy. Subsequently, the report will be sent to the GEF Office of Evaluation for their review, appraisal and inclusion on the GEF website.

5. Resources and schedule of the evaluation

This final evaluation will be undertaken by an international evaluator contracted by the Evaluation and Oversight Unit, UNEP. The contract for the evaluator will begin on ddmmyyy and end on ddmmyyyy (# days) spread over # weeks (# days of travel, to {country(ies)}, and # days desk study). The evaluator will submit a draft report on ddmmyyyy to UNEP/EOU, the UNEP/DGEF Task Manager, and key representatives of the executing agencies. Any comments or responses to the draft report will be sent to UNEP / EOU for collation and the consultant will be advised of any necessary revisions. Comments to the final draft report will be sent to the consultant by ddmmyyyy after which, the consultant will submit the final report no later than ddmmyyyy.

The evaluator will after an initial telephone briefing with EOU and UNEP/GEF conduct initial desk review work and later travel to (country(ies)} and meet with project staff at the beginning of the evaluation. Furthermore, the evaluator is expected to travel to {country(ies)} and meet with representatives of the project executing agencies and the intended users of project's outputs.

In accordance with UNEP/GEF policy, all GEF projects are evaluated by independent evaluators contracted as consultants by the EOU. The evaluator should have the following qualifications:

The evaluator should not have been associated with the design and implementation of the project in a paid capacity. The evaluator will work under the overall supervision of the Chief, Evaluation and Oversight Unit, UNEP. The evaluator should be an international expert in { } with a sound understanding of { } issues. The consultant should have the following minimum qualifications: (i) experience in {} issues; (ii) experience with management and implementation of { } projects and in particular with { } targeted at policy-influence and

decision-making; (iii) experience with project evaluation. Knowledge of UNEP programmes and GEF activities is desirable. Knowledge of {specify language(s)} is an advantage. Fluency in oral and written English is a must.

6. Schedule Of Payment

The consultant shall select one of the following two contract options:

Lump-Sum Option

The evaluator will receive an initial payment of 30% of the total amount due upon signature of the contract. A further 30% will be paid upon submission of the draft report. A final payment of 40% will be made upon satisfactory completion of work. The fee is payable under the individual Special Service Agreement (SSA) of the evaluator and **is inclusive** of all expenses such as travel, accommodation and incidental expenses.

Fee-only Option

The evaluator will receive an initial payment of 40% of the total amount due upon signature of the contract. Final payment of 60% will be made upon satisfactory completion of work. The fee is payable under the individual SSAs of the evaluator and is **NOT** inclusive of all expenses such as travel, accommodation and incidental expenses. Ticket and DSA will be paid separately.

In case, the evaluator cannot provide the products in accordance with the TORs, the timeframe agreed, or his products are substandard, the payment to the evaluator could be withheld, until such a time the products are modified to meet UNEP's standard. In case the evaluator fails to submit a satisfactory final product to UNEP, the product prepared by the evaluator may not constitute the evaluation report.

Annex 1 to Appendix 9: OVERALL RATINGS TABLE

Criterion	Evaluator's Summary Comments	Evaluator's Rating
A. Attainment of project objectives and results (overall rating) **Sub criteria (below)**		
A. 1. Effectiveness		
A. 2. Relevance		
A. 3. Efficiency		
B. Sustainability of Project outcomes (overall rating) **Sub criteria (below)**		
B. 1. Financial		
B. 2. Socio Political		
B. 3. Institutional framework and governance		
B. 4. Ecological		
C. Achievement of outputs and activities		
D. Monitoring and Evaluation (overall rating) **Sub criteria (below)**		
D. 1. M&E Design		
D. 2. M&E Plan Implementation (use for adaptive management)		
D. 3. Budgeting and Funding for M&E activities		
E. Catalytic Role		
F. Preparation and readiness		
G. Country ownership / drivenness		
H. Stakeholders involvement		
I. Financial planning		
J. Implementation approach		
K. UNEP Supervision and backstopping		

RATING OF PROJECT OBJECTIVES AND RESULTS

Highly Satisfactory (HS): The project had no shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Satisfactory (S): The project had minor shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Moderately Satisfactory (MS): The project had moderate shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Moderately Unsatisfactory (MU): The project had significant shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Unsatisfactory (U) The project had major shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Highly Unsatisfactory (HU): The project had severe shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Please note: Relevance and effectiveness will be considered as critical criteria. The overall rating of the project for achievement of objectives and results **may not be higher** than the lowest rating on either of these two criteria. Thus, to have an overall satisfactory rating for outcomes a project must have at least satisfactory ratings on both relevance and effectiveness.

RATINGS ON SUSTAINABILITY

A. Sustainability will be understood as the probability of continued long-term outcomes and impacts after the GEF project funding ends. The Terminal evaluation will identify and assess the key conditions or factors that are likely to contribute or undermine the persistence of benefits after the project ends. Some of these factors might be outcomes of the project, i.e. stronger institutional capacities, legal frameworks, socio-economic incentives /or public awareness. Other factors will include contextual circumstances or developments that are not outcomes of the project but that are relevant to the sustainability of outcomes.

Rating system for sustainability sub-criteria

On each of the dimensions of sustainability of the project outcomes will be rated as follows.

Likely (L): There are no risks affecting this dimension of sustainability.

Moderately Likely (ML). There are moderate risks that affect this dimension of sustainability.

Moderately Unlikely (MU): There are significant risks that affect this dimension of sustainability

Unlikely (U): There are severe risks that affect this dimension of sustainability.

According to the GEF Office of Evaluation, all the risk dimensions of sustainability are deemed critical. Therefore, overall rating for sustainability will not be higher than the rating of the dimension with lowest ratings. For example, if a project has an Unlikely rating in any of the dimensions then its overall rating cannot be higher than Unlikely, regardless of whether higher ratings in other dimensions of sustainability produce a higher average.

RATINGS OF PROJECT M&E

Monitoring is a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing project with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds. Evaluation is the systematic and objective assessment of an on-going or completed project, its design, implementation and results. Project evaluation may involve the definition of appropriate standards, the examination of performance against those standards, and an assessment of actual and expected results.

The Project monitoring and evaluation system will be rated on 'M&E Design', 'M&E Plan Implementation' and 'Budgeting and Funding for M&E activities' as follows:

Highly Satisfactory (HS): There were no shortcomings in the project M&E system. Satisfactory(S): There were minor shortcomings in the project M&E system.

Moderately Satisfactory (MS): There were moderate shortcomings in the project M&E system.

Moderately Unsatisfactory (MU): There were significant shortcomings in the project M&E system.

Unsatisfactory (U): There were major shortcomings in the project M&E system.

Highly Unsatisfactory (HU): The Project had no M&E system.

"M&E plan implementation" will be considered a critical parameter for the overall assessment of the M&E system. The overall rating for the M&E systems will not be higher than the rating on "M&E plan implementation."

All other ratings will be on the GEF six point scale.

GEF Performance Description		Alternative description on the same scale
HS	= Highly Satisfactory	Excellent
S	= Satisfactory	Well above average
MS	= Moderately Satisfactory	Average
MU	= Moderately Unsatisfactory	Below Average
U	= Unsatisfactory	Poor
HU	= Highly Unsatisfactory	Very poor (Appalling)

Annex 2 to Appendix 9: Co-financing and Leveraged Resources

Co financing (Type/Source)	IA own Financing (mill US$)		Government (mill US$)		Other* (mill US$)		Total (mill US$)		Total Disbursement (mill US$)	
	Planned	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**
– Grants										
– Loans/Concessional (compared to market rate)										
– Credits										
– Equity investments										
– In-kind support										
– Other (*) - - - - -										
Totals										

Co-financing (basic data to be supplied to the consultant for verification)

* Other is referred to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries.

Leveraged Resources

Leveraged resources are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO's, foundations, governments, communities or the private sector. Please briefly describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project's ultimate objective.

Table showing final actual project expenditure by activity to be supplied by the UNEP Fund management Officer. (insert here)

Annex 3 to Appendix 9

Review of the Draft Report

Draft reports submitted to UNEP EOU are shared with the corresponding Programme or Project Officer and his or her supervisor for initial review and consultation. The DGEF staff and senior Executing Agency staff provide comments on the draft evaluation report. They may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. The consultation also seeks agreement on the findings and recommendations. UNEP EOU collates the review comments and provides them to the evaluators for their consideration in preparing the final version of the report. General comments on the draft report with respect to compliance with these TOR are shared with the reviewer.

Quality Assessment of the Evaluation Report

All UNEP GEF Mid Term Reports are subject to quality assessments by UNEP EOU. These apply GEF Office of Evaluation quality assessment and are used as a tool for providing structured feedback to the evaluator.

The quality of the draft evaluation report is assessed and rated against the following criteria:

GEF Report Quality Criteria	**UNEP EOU Assessment**	**Rating**
A. Did the report present an assessment of relevant outcomes and achievement of project objectives in the context of the focal area program indicators if applicable?		
B. Was the report consistent and the evidence complete and convincing and were the ratings substantiated when used?		
C. Did the report present a sound assessment of sustainability of outcomes?		
D. Were the lessons and recommendations supported by the evidence presented?		
E. Did the report include the actual project costs (total and per activity) and actual co-financing used?		
F. Did the report include an assessment of the quality of the project M&E system and its use for project management?		
UNEP EOU additional Report Quality Criteria	**UNEP EOU Assessment**	**Rating**
G. Quality of the lessons: Were lessons readily applicable in other contexts? Did they suggest prescriptive action?		
H. Quality of the recommendations: Did recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?)'. Can they be implemented? Did the recommendations specify a goal and an associated performance indicator?		
I. Was the report well written? (clear English language and grammar)		
J. Did the report structure follow EOU guidelines, were all requested Annexes included?		
K. Were all evaluation aspects specified in the TORs adequately addressed?		
L. Was the report delivered in a timely manner		

GEF Quality of the MTE report = 0.3*(A + B) + 0.1*(C+D+E+F)

EOU assessment of MTE report = 0.3*(G + H) + 0.1*(I+J+K+L)

Combined quality Rating = (2* 'GEF EO' rating + EOU rating)/3

The Totals are rounded and converted to the scale of HS to HU

Rating system for quality of terminal evaluation reports

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1, and unable to assess = 0.

Annex 4 to Appendix 9

GEF Minimum requirements for M&E

Minimum Requirement 1: Project Design of M&E[3]

All projects must include a concrete and fully budgeted monitoring and evaluation plan by the time of Work Program entry (full-sized projects) or CEO approval (medium-sized projects). This plan must contain at a minimum:

- SMART (see below) indicators for project implementation, or, if no indicators are identified, an alternative plan for monitoring that will deliver reliable and valid information to management
- SMART indicators for results (outcomes and, if applicable, impacts), and, where appropriate, corporate-level indicators
- A project baseline, with:
  - a description of the problem to address
  - indicator data
  - or, if major baseline indicators are not identified, an alternative plan for addressing this within one year of implementation
- An M&E Plan with identification of reviews and evaluations which will be undertaken, such as mid-term reviews or evaluations of activities
- An organizational setup and budgets for monitoring and evaluation.

[3] http://gefweb.org/MonitoringandEvaluation/MEPoliciesProcedures/MEPTools/meptstandards.html

Minimum Requirement 2: Application of Project M&E

- Project monitoring and supervision will include implementation of the M&E plan, comprising:
- Use of SMART indicators for implementation (or provision of a reasonable explanation if not used)
- Use of SMART indicators for results (or provision of a reasonable explanation if not used)
- Fully established baseline for the project and data compiled to review progress
- Evaluations are undertaken as planned
- Operational organizational setup for M&E and budgets spent as planned.

SMART INDICATORS GEF projects and programs should monitor using relevant performance indicators. The monitoring system should be "SMART":

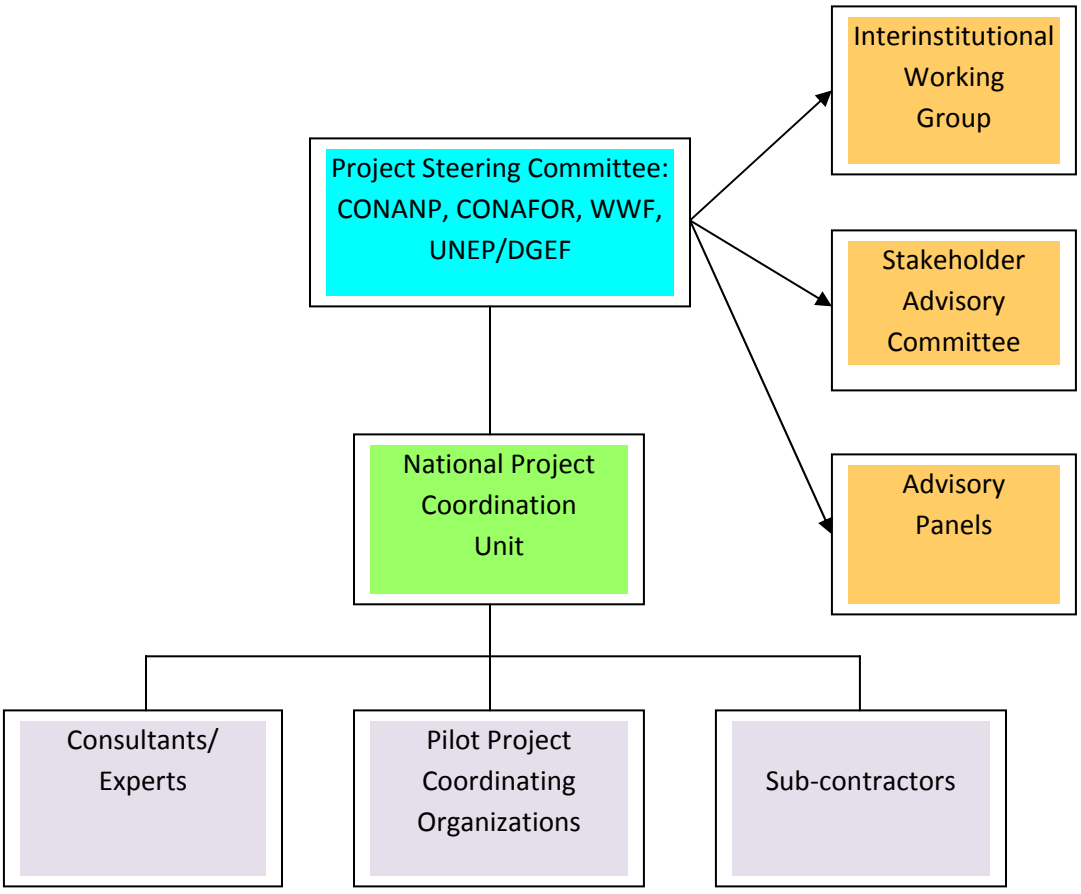
1. **Specific**: The system captures the essence of the desired result by clearly and directly relating to achieving an objective, and only that objective.
2. **Measurable:** The monitoring system and its indicators are unambiguously specified so that all parties agree on what the system covers and there are practical ways to measure the indicators and results.
3. **Achievable and Attributable:** The system identifies what changes are anticipated as a result of the intervention and whether the result(s) are realistic. Attribution requires that changes in the targeted developmental issue can be linked to the intervention.
4. **Relevant and Realistic:** The system establishes levels of performance that are likely to be achieved in a practical manner, and that reflect the expectations of stakeholders.
5. **Time-bound, Timely, Trackable, and Targeted:** The system allows progress to be tracked in a cost-effective manner at desired frequency for a set period, with clear identification of the particular stakeholder group to be impacted by the project or program.

Annex 5 to Appendix 9

List of intended additional recipients for the Terminal Evaluation (to be completed by the IA Task Manager)

Name	Affiliation	Email
Aaron Zazuetta	GEF Evaluation Office	azazueta@thegef.org
Government Officials		
GEF Focal Point(s)		
Executing Agency		
Implementing Agency		
Carmen Tavera	UNEP DGEF Quality Assurance Officer	

Appendix 10: Decision-making Flowchart and Organizational Chart



Appendix 11: Terms of Reference

National Executing Agency (NEA),

In addition to other duties given to it by the National Government, and in consultation with CONANP, WWF as the National Executing Agency will:

- Establish the Project Steering Committee (PSC);
- Appoint a full time National Project Coordinator (NPC);
- Provide the necessary scientific, technical, financial and administrative support to the work of the PSC, working in close cooperation with relevant government agencies, the scientific community and the public and private sectors;
- Ensure that regular reports, financial accounts, and requests are submitted to UNEP as set out in Section 4;
- Review all documentation deriving from the FSP and any other relevant documentation to ensure that these are in harmony with National Government policies;
- Submit the final version of the Terminal Report no later than five years from signature of this Memorandum of Understanding.

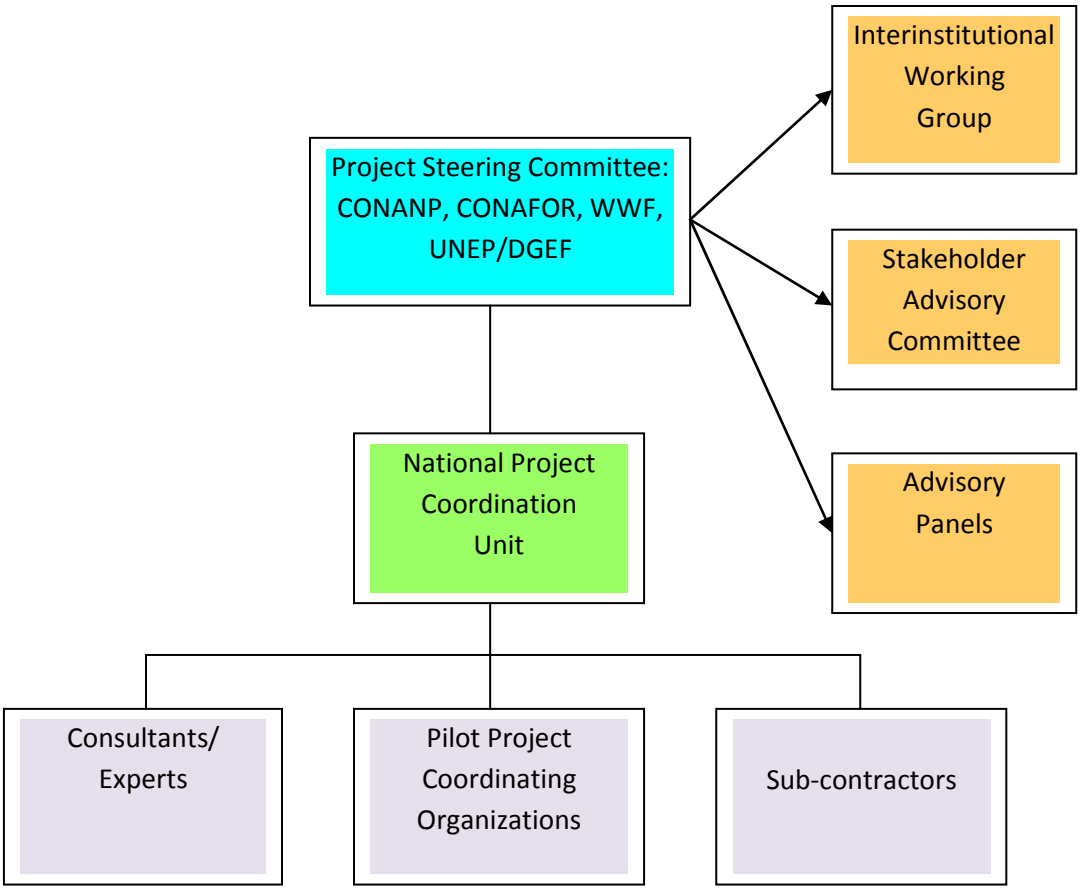
Project Steering Committee (PSC)

The Project Steering Committee will consist of the following organizations: CONANP, which will preside over the meetings of the PSC, CONAFOR, WWF and UNEP/DGEF. Implementing partner organizations, bodies and institutions, as well as special experts, may be invited to participate as observers.

The PSC will work together as a team on the management of the National Project and meet at least on a quarterly basis with the following duties:

- Develop a common understanding of what is needed to implement this FSP;
- Oversee the execution of project activities;
- Approve the detailed workplan and budget produced by the NPC;
- Mobilize necessary expertise, as needed for the proper execution of FSP outputs;
- Provide overall policy advice on the implementation of the FSP;
- Review and advise on the main outputs of the FSP;
- Ensure that information on the implementation of the FSP as well as the outputs are brought to the attention of local and national authorities for follow up;
- Ensure proper coordination and cooperation with related initiatives at the institutional level;
- Assist in mobilizing available data and ensure a constant information flow between all concerned parties;
- Allow for effective communication and decision-making between the National Project Coordinator and other actors;
- Ensure that the environmental policy of the Government is fully reflected in the FSP documentation;
- Review and approve the FSP outputs and documents.

On an annual basis the PSC will meet with all executing partners including UNEP DGEF to fulfill steering mechanism responsibilities including: oversight of project implementation, monitoring of project progress, strategic and policy guidance and to review and approve annual work plans and budgets.



National Project Coordinator (NPC)

1. Title of Position: National Project Coordinator (Team Manager)
2. Position Location: Normally NEA
3. Reports to: NEA, PSC and UNEP Task Manager
4. Date of TOR: To be determined (tbd)
5. *Supervises*: National Subject Matter Specialists and Project Site Teams
6. Tasks

- Act as secretary to the PSC;
- Manage the Project Coordination Unit (PCU) consisting of the NPC, an Administrative Assistant, project personnel, including two project monitoring technical assistants, a website and information processing manager and a secretary;
- Coordinate, manage and monitor the implementation of the FSP conducted by the local and international experts, consultants, subcontractors and cooperating partners; this includes planning, initiating and managing national project activities according to the project document and the procedures in the official UNEP Operational Guidelines ;
- Organize Project Steering Committee meetings;
- Prepare detailed workplan and budget under the guidance of the PSC;

- Ensure effective communication with the relevant authorities, institutions and Government departments in close collaboration with the Project Steering Committee;
- Acting as the technical focal point for national stakeholders and broaden national stakeholder base where relevant, e.g. by organizing national stakeholder consultations and facilitating national stakeholder meetings;
- Foster, establish and maintain links with other related national and international programmes and initiatives, in particular the UNEP EMP;
- Identification of additional national co-finance as the FSP develops;
- Prepare and oversee the development of Terms of Reference for FSP components, Subject Matter Specialists, Pilot Demonstration Project (PDP) Site Teams, and consultants;
- Organize, contract and manage the Subject Matter Specialists and consultants/experts, and supervise their performance;
- Coordinate and oversee the preparation of the outputs of the FSP;
- Manage the FSP finance, oversee overall resource allocation and where relevant submit proposals for budget revisions to the PSC and UNEP;
- Manage the overall FSP, ensuring that all the activities are carried out on time and within budget to achieve the stated outputs;
- Coordinate the work of all stakeholders under the guidance of the NEA and the PSC and in consultation with the UNEP Task Manager;
- Ensure that information is available to the PSC about all Government, private and public sector activities, which impact on FSP outputs; and
- Prepare and submit to UNEP and the PSC, regular progress and financial reports as set out in Section 4.

7. Deliverables

- PSC established; regular meetings held and documented;
- PDP Site Teams established; meetings held as required and documented;
- Terms of references and work plans for Subject Matter Specialists, consultants/experts prepared, agreed and monitored;
- Technical and financial reports as well as other inputs that may be required are provided in timely fashion;
- Proposals for networks of voluntary reserves and biological corridors completed (Year 3);
- Proposals for land use plans in project intervention areas completed;
- Pilot demonstration projects completed in timely fashion and within budget according to Terms of Reference for each (Year 5);
- Training workshops held; and
- Pilot demonstration projects results submitted to UNEP (Year 5).

8. Qualifications and Experience Required:

- University degree or equivalent qualification in an environmental science or related field;
- Familiarity with relevant aspects of the CBD programme of work and its goals and objectives;
- Experience in undertaking similar assignments, preferably in Mexico;
- Team player who possesses excellent organisational and communications skills;
- Fluent in Spanish (native Spanish speaker preferred); fluency in English desireable;
- Excellent written and oral communication skills; and
- Computer literacy with familiarity with Microsoft Office Suite.

Subject Matter Specialists

1. Title of Position: Subject Matter Specialists (Consultants of various disciplines)

2. Position Location: Variable
3. Reports to: Normally NPC
4. Date of TOR: Variable
5. Major Functions:

The role is to assist the NPC in the implementation of FSP activities. The NPC will prepare the terms of reference based on the individual needs of specific project components including activities at the pilot demonstration sites. Currently foreseeable roles include (but are not limited to):

- Ecosystem Services Specialist
- Interinstitutional Coordination Specialist
- Land Use Planning Specialist
- GIS Expert
- Socialogist/Anthropologist
- Specialist in GAP and GNRMP
- Protected Areas Management Specialist
- Website and Information Processing Manager
- Resource Mobilization Specialist
- Publicity and Public Awareness Specialist

Advisory Panels

For the implementation of this project, two Advisory Panels will be established to advise the PSC on elements, issues, approaches and actions to consider in the implementation of FSP activities relevant to Ecosystem Services and Alternative Tourism. Other Advisory Panels may be established by the PSC as needed on special issues of concern requiring additional expert advice. Specific draft terms of reference for each Advisory Panel will be prepared by the National Project Coordinator for the consideration and approval of the PSC. The draft terms of reference for the Advisory Panel on Ecosystem Services should be presented to the inaugural meeting of the PSC, while those for the Advisory Panel on Alternative Tourism should be ready for consideration by the second meeting of the PSC.

Project Inter-institutional Working Group

The success of this project will largely depend on the degree of inter-institutional, cross-sectoral cooperation and coordination achieved by the project's Inter-institutional Working group. The terms of reference for this body should be prepared in close consultation with all the prospective members of the Inter-institutional Working Group, many of which are identified in Section 2.5 of the FSP. Given the priority importance of this body, draft terms of reference for its functions and operation should be presented to the inaugural meeting of the PSC for consideration and discussion.

Pilot demonstration projects
Lama bordo pilot demonstration projects
Pilot demonstration project site teams

The NPC will also have to prepare specific draft terms of reference for (1) the pilot demonstration projects, (2) the lama bordo pilot demonstration projects and (3) pilot demonstration project site teams. In so doing, the following elements should be considered:

Pilot demonstration projects will be critical for promoting and building capacity in the development and application of:

- ES tools and methodologies for biodiversity conservation and natural resource management,
- good practices for biodiversity conservation and natural resource management,
- good agricultural practices in support of biodiversity conservation and natural resource management and
- alternative tourism approaches for the Oaxacan Mixteca based on its biological diversity, natural attractions and agro-ecosystems.

Pilot demonstration sites will also play an important role in the monitoring and collection of scientific and technical data and information for testing and refining ES methodologies and tools and good practices for agriculture and natural resource management promoted through the project.

SECRETARIA DE MEDIO AMBIENTE
Y RECURSOS NATURALES

COMISION NACIONAL DE AREAS NATURALES PROTEGIDAS
DIRECCION REGIONAL FRONTERA SUR, ISTMO Y PACÍFICO SUR

"2010, Bicentenario del inicio del movimiento de Independencia Nacional Y del Centenario del inicio de la Revolución Mexicana"

Palacio Federal 3er. Piso, 2ª. Ote. No. 227,
Col. Centro. Tuxtla Gutiérrez, Chiapas.
C.P. 29000

OFICIO No. DIR/REG/RFSIPS/ 020/2009
Tuxtla Gutiérrez Chiapas, 25 enero de 2010

MS. MARYAM NIAMIR-FULLER
DIRECTOR
DIVISION OF GLOBAL ENVIRONMENT FACILITY (GEF) COORDINATOR,
UNEP
P.O. BOX 3055
NAIROBI, KENYA

Subject: compromise of financing of the project "Integration of a harmonic way the contribution of the services ecosystem and the options of use of the soil in the frame of the efforts for the mitigation of the poverty and the planning of the development in the Southern Mexico"

Dear Dr. Maryam Niamir-Fuller:

I hereby confirm that the National Commission of Natural Protected Areas (CONANP) will contribute in cash and in species to the project " Integration of a harmonic way the contribution of the services ecosystem and the options of use of the soil in the frame of the efforts for the mitigation of the poverty and the planning of the development in the Mixteca " of the following way:

In cash: The equivalent in Mexican pesos to US$ 138,612.90 (hundred thirty eight thousand six hundred twelve 90/100 dollars) annual.

In species: The equivalent one in Mexican pesos to US$ 39,093 (Thirty nine thousand ninety three dollars) per year, which correspond to the salary to the budget involved to the operation of the Area, as well as to the equipment and infrastructure on that .will put to disposition for the execution of the activities compromised during the time of the project.

This generates an annual contribution of the Commission of US$ 177,705.90 dollars (approximately $888,529.5 dollars during five years of the project. We understand that the project of the Mixteca will be implemented by solid alliances the active participation of all the involved agencies.

SECRETARIA DE MEDIO AMBIENTE
Y RECURSOS NATURALES

COMISION NACIONAL DE AREAS NATURALES PROTEGIDAS
DIRECCION REGIONAL FRONTERA SUR, ISTMO Y PACÍFICO SUR

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Tuxtla Gutiérrez Chiapas, 25 enero de 2010

We hope that our compromise contributes with the match necessary for this project, and it is tied to the resources that the GEF has destined to this project.

Finally, we hope to continue collaborating close with UNEP and GEF, in relevant projects for the Region Frontera Sur, Istmo y Pacifico Sur of the CONANP.

Sincerely,

BIOL. FRANCISCO JAVIER JIMÉNEZ GONZÁLEZ
DIRECTOR REGIONAL

C.c.e.p.- **Flavio Chazaro Ramírez**.- Director de Desarrollo Institucional y Promoción.- .- Edificio.- Para su conocimiento.- fchazaro@conanp.gob.mx- Presente.
C.c.e.p.- **Carlos Manterola Piña** .- Director de Sostenibilidad Financiera y Procuración de Fondos.- Edificio.- Para su conocimiento.- carlos.manterola@conanp.gob.mx- Presente.
C.c.e.p.- **José Juan Arriola Arroyo**.- Subdirector de Diseño y Operación de Programas.- Edificio.- Para su conocimiento.- jarriola@conanp.gob.mx- Presente.
C.c.e.p.- **Mauricio Trejo Monroy**.- Subdirector de Compensaciones Ambientales.- Archivo y conocimiento.- mtrejo@conanp.gob.mx.- Presente.

FJJG/HGSB/CGV/amrd.

CONAFOR

COMISIÓN NACIONAL FORESTAL

SECRETARÍA DE MEDIO AMBIENTE Y RECURSOS NATURALES

SEMARNAT

Ms Maryam Niamir Fuller
GEF Executive Coordinator
United Nations Environment Programme
Nairobi 00100, Kenya

Dear Mrs. Niamir Fuller

This is to confirm the National Forestry Commission's support for the project: ***Integrating trade offs between supply of ecosystem services and land use options into poverty alleviation efforts and development planning in Mixteca***, proposed through UNEP for funding by the Global Environment Facility.

The National Forestry Commission has actively participated in the development of the Project Identification Form (PIF) and the Project Preparation Grant (PPG) phases of the project in Mexico and intends to be involved in the Full-Sized Project (FSP). Our foreseen involvement includes:

- Participation in the Project Steering Committee
- Assisting with the implementation and financing of pilot demonstration projects and capacity building activities

The National Forestry Commission recognizes that the activities proposed by this project will contribute significantly to building a solid framework for sustainable natural resources management and biodiversity conservation in the Mixteca region. We have estimated that investments for project support by this Commission in terms of co financing will total US$**8,800,000 in cash** through Conafor's operating programmes, over the 5 year project duration.

Yours sincerely

PhD. Juan Manuel Torres Rojo
Director of National Forestry Comission
CONAFOR

Periférico Poniente No. 5360 Col. San Juan de Ocotán, Zapopan, Jalisco, C.P. 45019
Tel: 01 33 37 77 70 00 ext. 1015 y 1016 Fax: 01-31-10-08-20 www.conafor.gob.mx

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www.wwf.org.mx
ovidal@wwfmex.org

WWF *por un planeta vivo*

April 27th, 2010

Mrs Maryam Niamir Fuller
GEF Executive Coordinator
United Nations Environment Programme
Nairobi 00100, Kenya

Dear Mrs. Niamir Fuller,

This is to confirm World Wildlife Fund-Mexico support for the project ***Integrating trade offs between supply of ecosystem services and land use options into poverty alleviation efforts and development planning in Mixteca***, proposed through UNEP for funding by the Global Environment Facility.

World Wildlife Fund-Mexico has actively participated in the development of the Project Preparation Grant (PPG) phases of the project in Mexico and intends to be involved in the Full-Sized Project (FSP). Our foreseen involvement includes:

- Participation in the Project Steering Committee
- Assisting with the project implementation

World Wildlife Fund-Mexico recognizes that the activities proposed by this project will contribute significantly to building a solid framework for sustainable natural resources management and biodiversity conservation in the Mixteca region. We have estimated that our investments for project support in terms of co-financing will total US $100,000 over the 5 year project duration.

Yours sincerely,

Omar Vidal
Director General
World Wildlife Fund-Mexico

SECRETARIA
DE
HACIENDA Y CREDITO PUBLICO

SUBSECRETARÍA DE HACIENDA Y CRÉDITO PÚBLICO
UNIDAD DE ASUNTOS INTERANCIONALES DE HACIENDA
DIRECCIÓN GENERAL ADJUNTA DE AMÉRICA DEL NORTE, ASIA-PACÍFICO Y EL CARIBE

Oficio 347.A.-

México, D.F. a 21 de enero de 2008.

SR. RICARDO SÁNCHEZ SOSA
Director de la Oficina Regional para
América Latina y el Caribe
Programa de las Naciones Unidas
para el Medio Ambiente
Blvd. de los Virreyes no. 155,
Col. Lomas de Virreyes,
C.P. 11000, México, D.F.

Asunto: Endoso al proyecto "Gestión integrada de los ecosistemas productivos, extractivos y pristinos en los paisajes de la Región Mixteca"

En mi carácter de Punto Focal para México del Fondo para el Medio Ambiente Mundial (GEF, por sus siglas en inglés), me permito confirmar a Usted que el citado proyecto propuesto: (a) es acorde con las prioridades nacionales del gobierno y con los compromisos de México bajo las convenciones globales correspondientes; y (b) ha sido analizado por los interesados, conforme con las políticas del GEF sobre participación pública.

La implementación del citado proyecto se realizará con el Programa de las Naciones Unidas para el Medio Ambiente (PNUMA) como agencia implementadora y la Comisión Nacional de Áreas Naturales Protegidas (CONANP) como agencia ejecutora. El financiamiento total requerido del GEF para este proyecto es USD 6'600,000, el cual incluye USD 6'000,000 para la implementación del proyecto y USD 600,000 (10% de los gastos inherentes al proyecto) para la comisión por los servicios asociados al manejo del proyecto de la agencia implementadora. En ese sentido, el Gobierno de México no tiene inconveniente en la utilización de este monto del Marco de Asignación de Recursos del GEF-4 para México, en el área focal Biodiversidad.

A t e n t a m e n t e ,
La Directora General Adjunta,

Claudia Grayeb Bayata

Claudia Grayeb Bayata

Ccp Unidad de Asuntos Internacionales de Hacienda.- SHCP.- Presente.
Lic. Roberto Cabral Bowling.- Director General Adjunto de Financiamiento Estratégico.- Secretaría de Medio Ambiente y Recursos Naturales.- Av. San Jerónimo 458, 3er piso, Del. Álvaro Obregón
Subdirección de Estadísticas y Proyectos Agropecuarios y Ambientales.- SHCP.- Presente.

Appendix 14: Draft Procurement Plan

UNEP BUDGET LINE		EXPLANATION	COMPONENT	Year of Execution	Dollars
1100	Project personnel	Full time Project staff directly related to project operation, monitoring, interinstitutional relations, and raising of additional co-financing. Oaxaca city project office.	1,2, 3, 4, 6	2010 - 2015	1,292,670
1200	Consultants	Full time thematic consultants related to field operations of the project; also follow up pilot projects and application of manuals for decision makers and local producers. Based in two project field offices.	1, 2, 3	2010 - 2015	825,000
1301	Administrative Assistant	Professional staff member in charge of Project operations and financial monitoring (reporting)	2,3, 6	2010 - 2015	117,252
1600	Travel on official business	All project staff travel including technical and administrative components	1,2,3,4,6	2010 - 2015	223,378
2201	Further development of baseline data	Consultancies to update and further define the baseline in the Project intervention area	1 & 5	2010 & 2011	117,000
2202	ES methodologies and tools	Consultancy to define methods and tools for the application of ES approach to feed the manuals for decision makers and local producers as well as pilot project execution and management of voluntary areas dedicated to conservation and biological corridors	1	2010 & 2011	48,000

UNEP BUDGET LINE		EXPLANATION	COMPONENT	Year of Execution	Dollars
2203	Detailed ES studies in 10 micro-watersheds	Detailed studies of 10 pilot micro-watersheds that will serve as basis for pilot projects and impact evaluation	1	2010 & 2011	60,000
2204	Detailed ES studies in priority ecosystems	Consultancies for detailed ecosystem approach studies on critical ecosystems (xerophytic shrub), taxa of importance for conservation (Agavaceae , Burseae) and priority species (royal eagle, endemic hummingbirds)	1	2010 & 2011	40,000
2205	Project replication strategy	Consultancy to design the replication strategy of the models promoted in the pilot projects	4	2012 & 2013	62,500
2206	Educational and information materials on project findings, tools & methodologies	Subcontract for designing manuals for decision makers and local producers.	4	2012 & 2013	20,000
2207 - 2216	Pilot demo. project micro-watershed	Financing activities and works for the implementation of the models of natural resource management in the 10 pilot micro-watersheds	1 & 3	2011 - 2015	82,940 each
2217 - 2221	Pilot demo project traditional farming	Financing activities and work for the implementation of Lama Bordo agricultural production models in five pilot sites	3	2011 - 2015	35,020 each
2224	ES Monitoring program	Subcontract for the design and operation of a monitoring system of project field activities, with emphasis on priority species and ecosystems and patterns of natural resources management operating in the area of implementation	1	2011 - 2015	150,000

UNEP BUDGET LINE		EXPLANATION	COMPONENT	Year of Execution	Dollars
2225	Marketing of products and goods generated by pilot demo projects	Consultancy to design a marketing strategy for products, goods and services from conservation activities and ecosystem services	3	2011 - 2015	120,000
2226	Mixteca ES Fund capitalization	Matching funds to CONAFOR's "Concurrent Funds Program", through which the institution is committed to contribute up to an equivalent portion in order to build an initial fund of $ 1 million. As such this constitutes seed money for the promotion of actions to maintain ecosystem services and biodiversity conservation beyond project duration. The fund thus serves as a "magnet" to attract the participation of new and additional funding sources and hence be able to further increase the co-funding to GEF leveraged by the project. The fund will be governed by TORs set forth by the entities comprising the Project Steering Committee.	2 & 4	2010	500,000
3200	Group training	Training events for decision makers and local producers on the ecosystem services approach, biodiversity, conservation and management of natural areas and biological corridors, as well as replication of models for natural resource management	1, 3, 4	2011 - 2015	253,050
3305	Advisory Panels on other subjects	Financing meetings of thematic council panels to propose approach strategies for the project	1	2010 & 2011	20,000

UNEP BUDGET LINE		EXPLANATION	COMPONENT	Year of Execution	Dollars
3306	Interinstitutional Working Group	Financing of meetings for the operation and monitoring of agreements of the Interinstitutional Work-Group for the Mixteca at State level	2	2010 - 2015	36,000
3307	Interinstitutional Coordinating Committees in project intervention areas	Financing of meetings for the operation and monitoring of agreements of the Operators' Group of institutions at the project intervention area level	2	2010 - 2015	50,000
4302	Rental of office space (Oaxaca)	Office rental to host project coordination in the city of Oaxaca	6	2010 - 2015	92,500
4303	Rental of office space (in project area)	Office rental of one of two offices in the project area (the other one will be established in coordination with CONAFOR)	6	2010 - 2014	40,000
5203	Start-up manual on ES tools/methodologies for decision-makers	Editing and publishing of the start-up manual on ES tools and methodologies for decision-makers	1	2011	20,000
5204	Detailed educational materials on ES methodologies & tools for decision-makers	Production and publication of educational materials on ES tools and methods for decision makers at the state level (public officials) and regional level (organizations, mayors, community commissioners and ejidos)	1	2011	30,000
5205	Information materials on project findings	Systematization and publication of materials on the project results to be disseminated to local and state level	4	2014 & 2015	25,000

UNEP BUDGET LINE		EXPLANATION	COMPONENT	Year of Execution	Dollars
5206	Revised start-up manual on ES and other supportive materials for decision makers based on project results	ES Manual and other support materials for decision makers that once tested are considered important improvements to the initial edition.	4	2015	16,400
5207	Start-up manual for local stakeholders in project intervention areas on ecosystem approach	Editing and publication of the ES approach manual for local residents to support the pilot projects in sub-watersheds	3	2010 & 2011	40,000
5208	Good practices in agriculture and natural resource management for the Mixteca	Development and editing of good agricultural practices and natural resources management manual for the project intervention area	3	2010 & 2011	40,000
5209	Project tool kits for decision makers	Publishing of the manual for decision makers	1 & 4	2012	48,000
5210	Project tool kits for stakeholders	Publishing of the toolkit for local stakeholders	1 & 4	2012 & 2013	133,000
5211	Project tool kits in Mixteco	Publishing of the toolkit for local stakeholders in Mixteco language	1 & 4	2012	50,000

The project will be implemented in accordance with the procurement procedures of WWF, which are provided below. Likewise, implementing organizations that are sub-contracted by WWF will be subject to their own financial procedural norms, bearing in mind that at all times the principles of transparency and impartiality are followed.

WWF USG PROCUREMENT GUIDELINES FOR GOODS AND SERVICES

(subject to specific donor requirements)

REQUIREMENTS	Under $25,000	$25,000-99,999	$100,000 and over
Written solicitations of bids	Not required but recommended.	Documented quotations from at least three vendors required.	Written Request for Bids required.
Use of minority and women owned businesses (for US-based purchases only)	Use of minority and women owned and small business is recommended but not required.	Use of minority and women owned and small businesses is recommended but not required.	Formal RFP must be sent to relevant government office for small or disadvantaged businesses at least 45 days prior to awarding contract.
Cost/Price Analysis	Cost/price analysis recommended. To include basis for selection, and rationale for selecting particular vendor.	Documented cost/price analysis required. Must include basis for selection, and rationale for selecting particular vendor.	Written cost/price analysis required. Must include basis for selection, and rationale for selecting particular vendor.
WWF Institutional Buyers	Use of WWF pre-selected vendors is recommended when possible.	Use of WWF pre-selected vendors is recommended when possible.	Quotations from WWF pre-selected vendors should be obtained as part of the competitive bidding process.
Sole source vendor selection	Allowed without prior approval, if sufficient documentation of the justification exists.	Allowed only with prior approval of Program Director, VP, or Field Office Representative. Files must contain written justification for the use of non-competetive process	Allowed only with recommendation of Department VP and approval of CFO. Files must contain written justification for the use of non-competetive process
Metric Requirements	Technical specifications should indicate if metric dimensioned equipment is acceptable.	Technical specifications should indicate if metric dimensioned equipment is acceptable.	Written RFP should indicate to the extent practical and feasible, that metric dimensioned equipment is acceptable.
Debarment			Certificate required.

Required documentation on file	Records must include detail of technical requirements.	Records must include detail of technical requirements, documented quotations from vendors, and cost/price analysis for vendor selection. Records should also include verification that costs are reasonable, allocable and allowable.	Records must include detail of technical requirements, written RFP, written vendor responses, and detailed cost/ price analysis to justify vendor selection.

WWF Procurement Policies for USG and Other Donor-Funded Projects

As a steward of public funds, WWF has established the following procurement policies to ensure the most efficient use of limited resources when obtaining the goods and services necessary for the operation of the organization and the implementation of its conservation activities.

A. Applicability: These policies apply to all procurements of goods and services funded by the U.S. Government and other restricted Donors.

B. Conflict of Interest: WWF maintains a standard of conduct for its staff in order to prevent actions which may be deemed as a conflict of interest when purchasing goods and services with any funding source. Click here to view WWF's Conflict of Interest Policy . In addition, the following policy shall apply to all USG and other restricted donor procurements subject to this policy:

No employee, officer, or agent shall participate in the selection, award, or administration of a contract supported by Federal and other restricted donor funds if a real or apparent conflict of interest would be involved. Such a conflict would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in the firm selected for an award. The officers, employees, and agents of the recipient shall neither solicit nor accept gratuities, favors, or anything of monetary value from contractors, or parties to subagreements.

C. Competitiveness: To the maximum extent possible, WWF conducts its vendor and goods purchasing through open and free competition. WWF is committed to seeking out the supplier/contractor which responds to the specific need with a competitive price and best overall quality.

D. Unnecessary or duplicate items: Proposed purchases must respond to the operational or technical needs of the purchasing program, department or field office. Purchases should not be made when an item is already available through an existing WWF inventory. Where appropriate, an analysis should be made of lease and purchase alternatives to determine which would be most economical and practical. Staff must choose amongs vendors and suppliers from the list of WWF's Insitutional Buyers when possible.

E. Commitment to "Green" Procurement: In keeping with the "Commitment to Conservation in the Office" policy (see WWF-US Institutional Policies), WWF considers energy efficiency, recycled content, andrecyclability in addition to price and quality.

F. Construction Contracts: Construction contracts, especially those financed with government funds, are subject to special conditions and requirements. Prior to entering into a construction contract, program and field staff should contact Agreement Services.

G. Contract Administration System: Program and field staff are responsible for ensuring that all services are delivered or all equipment is received in good condition, and that systems are in place to ensure that the vendor has adhered to the terms and conditions of the contract.

H. Planning: Program and field staff are responsible for verifying that adequate funds are available in the operational or project budget to make the planned purchase, taking into account quantity, shipping costs, and parts required. Program and field staff must also take into account whether maintenance services will be available and to determine what internal program approvals or donor approvals must be obtained prior to purchase.

I. Coordination: Contact departments that may be helpful in making your purchase: Information Technology for computer hardware and software; Facilities for office supplies and furniture; Agreement Services for donor requirements; the General Counsel's Office when required; others as may be helpful.

J. Solicitation: When appropriate, solicitations for goods and services provide for all of the following:

1. A clear and accurate descriptions of the technical requirements for the material, product or service to be procured in competitive procurement. Such a description shall not contain features which unduly restrict competition.

2. Requirements which the bidder/offeror must fulfill and all other factors to be used in evaluating bids or proposals.

3. A description, whenever practicable, of technical requirements in terms of functions to be performed or performance required, including the range of acceptable characteristics or minimum acceptable standards.

4. The specific features of "brand, name or equal" descriptions that bidders are required to meet when such items are included in the solicitation.

5. The acceptance, to the extent practicable and economically feasible of products and services dimensioned in the metric system of measurement.

6. Preference, to the extent practicable and economically feasible, for products and services that conserve natural resources and protect the environment and are energy efficient.

K. Small Businesses, Minority-Owned Firms, and Women's Businesses Enterprises (for USAID-funded procurement only): Positive efforts shall be made to utilize small businesses, minority-owned firms, and women's businesses enterprises, whenever possible, taking all of the following steps to further this goal:

1. Ensure that small businesses, minority-owned firms, and women businesses enterprises are used to the fullest extent practicable.

2. Make information on forthcoming opportunities available and arrange time frames for purchases and contracts to encourage and facilitate participation by small businesses, minority-owned firms, and women businesses enterprises. To permit USAID, in accordance with the small business provisions of the Foreign Assistance Act of 1961, aa amended, to give United States small businesses firms an opportunity to participate in supplying commodities and services procured under the award, the recipient shall to the maximum extent possible provide the following information to the Office of Small Disadvantaged Business Utilization (OSDBU/MRC), USAID Washington, DC 20523, at least 45 days prior to placing any order or contract in excess of the small purchase threshold:

a. Brief general description and quantity of goods or services;

b. Closing date for receiving quotations, proposals or bids; and

c. Address where solicitations or specifications can be obtained.

3. Consider in the contract process whether firms competing for larger contracts intend to subcontract with small business, minority-owned firms, and women's business enterprises.

4. Encourage contracting with consortiums of small businesses, minority-owned firms and women's business enterprises when a contract is too large for one of these firms to handle individually.

5. Use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Department of Commerce's Minority Business Development Agency in the solicitation and utilization of small businesses, minority-owned firms and women's business enterprises.

L. Types of Procuring Instruments: The type of procuring instruments used shall be appropriate for the particular procurement and for promoting the best interest of the program or project involved. The "cost-plus-a-percentage-of-cost" or "percentage of construction cost" methods of contracting shall not be used.

M. Debarment and Suspension: Contracts shall be made only with responsible contractors who posses the potential ability to perform successfully under the terms and conditions of the proposed procurement. Consideration shall be given to such matters as contractor integrity, record of past performance, financial and technical resources or accessibility to other necessary resources. In certain circumstances, contracts with certain parties are restricted by agencies' implementation of E.O.s 12549 and 12689, "Debarment and Suspension."

N. Anti-Terrorism: To comply with federal laws blocking transactions with designated terrorists and other individuals, you must verify that potential vendors do not appear on various official lists.These lists include the lists maintained by the U.S. Treasury Department's Office of Foreign Assets Control, the European Union, and the United Nations Security Council, among others.

O. Cost and Price Analysis: Some form of cost or price analysis shall be made and documented in the procurement files in connection with every procurement action. Price analysis may be accomplished in various ways, including the comparison of price quotations submitted, market prices and similar indicia, together with discounts. Cost analysis is the review and evaluation of each element of cost to determine reasonableness, allocability, and allowability. Guidelines to use are:

- Collect several quotes or bids in writing when possible (reference procurement guidelines).
- For goods, choose among WWF's Institutional Buyers when possible.
- For goods, ask if a supplier/contractor will offer discounts for prompt payment.
- Ask whether the supplier/contractor will lower the price for a longer term commitment;
- For goods, consider the cost of a maintenance agreement and be sure to get a good warranty.
- If the price of the preferred supplier/contractor is too high, try to negotiate it down.
- Before closing the deal, check references of the supplier/contractor; check the environmental record and/or the environmental friendliness of the supplier/contractor.
- Document the cost/price analysis used for determining the best rate, or to justify why a sole source was used.

P. Approval: Prior to issuing an agreement or placing an order, ensure that all donor and internal approvals have been received. Coordinate with Agreement Services as needed to ensure compliance with USG procurement guidelines.

Q. Testing Goods: Examine and test goods when you receive them; ensure that the vendor has met all terms and conditions of the purchase agreement. If you have experienced problems with a particular vendor, alert other staff as appropriate.

R. Shipping Goods: If you are shipping goods on to another location, ensure that adequate insurance is obtained for actual replacement value plus shipping costs. Bills of lading and other appropriate documentation should be sent to the WWF staff or designated recipient in the field for receipt of the goods through customs.

For shipment of goods purchased with government funds, coordinate with Agreement Services to ensure that all shipping requirements of the donor agency have been met.

S. Records: Keep thorough records of each step of your purchase, from the planning to the shipping. This includes cost/price analysis, all quotations received, and justification for vendor selection.

Appendix 15: Tracking Tools

15.1 Methodology for the Assessment of Biodiversity Benefits (Summary)

INTRODUCTION AND BACKGROUND

Existing knowledge about biodiversity in the Mixteca region is partial, concentrated in certain places and few collection sites. It is one of the least studied regions in the State of Oaxaca, hence the level of biodiversity richness, endemism and numbers of endangered species may be much greater than what is known at present. There are regions in which intensive work has taken place due to the presence of one or of a group of species, however complete biodiversity inventories are lacking, hence it is suggested that the first step in any type of study involves species taxonomic identification found at the site.

Certainly land use change ranks very highly in terms of threats faced by the flora and fauna in the Mixteca, because it implies deforestation, vegetation cover change, transformation to agriculture and livestock, burning for grazing purposes, the introduction of exotic species and pollution. All these threats are due to lack in planning for agriculture and livestock activities, urban growth and the demand for more basic necessities for the population.

Fragmentation is a major threat to biodiversity because many ecosystems are divided by roads, cultivation fields, towns, canals, transmission lines and fences that limit free movement of many species. Fragmentation is the transformation of a relatively homogeneous area of an ecosystem to another in the remaining smaller fragments. In some cases, these fragments may be in the form of "islands" embedded in disturbed areas. One aspect that should be considered in any activity related to the conservation of biodiversity and ecosystem services are the implications of climate change.

VEGETATION AND FLORA

From the point of view of its ecosystems, the Mixteca can be divided into two areas: **Upper Mixteca and Lower Mixteca.** The vegetation of the **Upper Mixteca** includes mostly coniferous forest (*Pinus* and *Pinus-Quercus*) táscate forests, oak forest (*Quercus*), arid tropical scrub (Nochixtlán districts, Coixtlahuaca and Teposcolula) tropical deciduous forest, secondary forests made up of palm groves of *Brahea dulcis* (occasionally *Brahea nitida*); southwest there are some patches of cloud forest, and in disturbed areas by logging patches of *Juniperus fláccida*, and *Arctostaphylos pungens* and *Rhus* spp., when the disturbing factor is fire.

Taxonomic family	No. of species
Asteraceae	454
Fabaceae	272
Asclepiadaceae	152
Poaceae	113
Orchidaceae	86
Lamiaceae	63
Solanaceae	63
Rubiaceae	51
Euphorbiaceae	44
Otras	1370
Total	**2668**

In the **Lower Mixteca** vegetation types are predominantly tropical deciduous forest, tropical scrub, riparian forest, *Quercus* and *Juniperus* forest. The biodiversity in this region belongs to the Neotropics and genera such as *Agave* and *Bursera* are very well represented. This area is poorly studied (or at least with few publications).

The Mixteca's flora comprises a vast richness of plant species estimated at over 2,668. For Mixteca Alta alone 1,550 species, 490 genera and 132 families (representing 66% of total families in Oaxaca and 60% in Mexico) have been registered. Roughly 15 of these species are in some category of protection.

An important family for this región is the Crassulaceae, which in the districts of Coixtlahuaca, Teposcolula and Tlaxiaco has 20, 18 and 13 species respectively, and it is the región richest in enedmisms for this family in Oaxaca State with eight species, especially of the *Echeveria* and *Sedum*. The Upper Mixcteca has a strict endemic genus (*Ainea*) in Juxtlahuaca and Nochixtlán; three monotypic genera (*Fosteria,* in Nochixtlán and Teposcolula; *Gibasoides,* in Coixtlahuaca, *Pseudocranichis,* in Juxtlahuaca); endemic taxa of the genera *Salvia*, *Echeandia*, *Stevia*, *Matelea*, *Acourtia*, *Perymenium*, *Viguiera*, *Schoenocaulon*, as well as 163 endemic taxa (10.5% of the Mixteca total), of which 97 taxa (59.5%) are exclusive to the Upper Mixteca. Of the total of endemic taxa, 61 (37%) have been registered in Teposcolula, 54 (33%) in Coixtlahuaca, 31 (19%) in Tlaxiacao, 28 (17%) in Juxtlahuaca. 24 (15%) in Nochixtlán, and 23 (14%) in Huajuapan de León.

There are four areas of highest species richness and endemic species in the Upper Mixteca:

- Rio Hondo Basin (28 exclusive taxa)
- Area near the towns of Tamazulapan, Teposcolula Chilapa and Coixtlahuaca (nine exclusive taxa, probably more)
- Mixtepec River Basin (six exclusive taxa)
- de las Sedas Mountains (seven exclusive taxa)

In the Upper Mixteca there are species of very restricted distribution and even difficult to find by collectors, such as *Ainea conzattii*, *Buxus mexicana*, *Dichondra nívea*, *Echeveria longissima*, *Gibasoides laxiflora*, *Fosteria oaxacana*, *Mammillaria hernandezii*, *Rondeletia tenorioi*, *Tigridia huajuapensis*, *Tigridia illecebrosa*, which will require special care when undertaking investigations in this area.

FAUNA

In regard to fauna, there are 368 species of vertebrates and 49 species of invertebrates. Birds and mammals stand out for their numbers and despite comprising the highest number of threatened species, reptiles stand out in this regard with nearly two-thirds of their species being endangered.

The distribution of 91.5% of the fauna of the Mixteca region is wide, i.e. they are shared with North or Central America and only 8.5% (37) are unique to Mexico or Oaxaca. The patterns of endemism for several groups have shown that higher elevations are important (Casas et al. 1996; Sánchez-Cordero 2001, Briones-Salas and Sanchez-Cordero 2004), hence the Upper Mixteca is an area that should be preserved since it will contribute greater richness and endemism than what is currently known of Oaxaca State.

Group	México	Endemic México	Oaxaca	Endemic Oaxaca	Mixteca	NOM	CITES	UICN	No. of species by región
Fish	2171	163	127	9	15	4	1	1	(13) Mixteco River and (3) Tlapaneco River
Amphibians	361	174	133	58	9	2			(7) Coixtlahuaca, (1) Tlaxiaco, (1) Juxtlahuaca
Reptiles	804	368	245	45	39	22		7	(6) Teposcolula, (33) Coixtlahuaca, (1) Silacayoapan, (2) Huajuapan,
Birds	1054	111	736	4	229	29	33	5	(76) Tlaxiaco, (17) Teposcolula, (12) Silacayoapan, (9) Huajuapan, (3)

Group	México	Endemic México	Oaxaca	Endemic Oaxaca	Mixteca	NOM	CITES	UICN	No. of species by región
									Juxtlahuaca
Mammals	475	169	190	12	76	10	3	8	(40) Tlaxiaco, (39) Nochixtlán, (12) Huajuapan, (9) Juxtlahuaca, (8) Silacayoapan, (8) Teposcolula
Lepidoptera			57% of the country		12				Coixtlahuaca, Teposcolula, Tlaxiaco and Nochixtlán
Himenoptera					37				Coixtlahuaca, Teposcolula, Tlaxiaco and Nochixtlán
Total	4865	985	1431	128	417	67	37	21	

BIODIVERSITY INDICATORS

Considering the biological richness of the region and the main threats being faced the following indicators to be considered in the proposed studies for the development of assessment efforts for baseline and monitoring system are:

Category	Indicator	Project End Target	Means Of Verification
Land use change	% increase of critical ecosystems area (cloud forest, arid tropical scrub and tropical deciduous forest) under conservation % increase in ground cover of critical ecosystems under conservation)	Cloud Forest: 2 - 5% over baseline; Arid tropical scrub 5-10% over baseline; Tropical deciduous forest 5-10% over baseline	Comparative studies and annual review of aerial photographs and databases of Geographic Information Systems (GIS). Permanent sampling sites (vegetation, flora and fauna). Annual assessments of heterogeneity, connectivity, density, diversity of flora and fauna lists, similarity coefficients, alpha and beta diversity indices.
	% increase in conservation area with the presence of characteristic species	Increase of 5% of the surface of conservation areas with the presence of characteristic species.	
Characteristic species: 1) Indicators (sensitive to disturbance) 2) Key (species dependent) 3) Umbrella (its presence indicates the existence of a considerable number of species) 4) Vulnerable	% Increase in localities with characteristic species record under any scheme of conservation	Minimum of 30%over baseline in localities with characteristic species records	Inventories and annual surveys of characteristic species
	% Increase in abundance of characteristics species under any scheme of conservation	20% over baseline in the number of individuals and cover of characteristics species	Demographic studies on permanent sites with annual sampling and determination of net population growth rate of characteristic species
	% Increase in population growth rates of characteristic species under any scheme of conservation	10 % over baseline in population growth rates of characteristic species in conservation areas	

BIODIVERSITY INDICATOR SPECIES

Considering the information available at present and the progress achieved by some of the actions in the project area, the concept of characteristic species[1] was established as a framework for measuring progress and impact of the project. In order to use them as impact and / or progress indicators, "functional groups" were defined, which are groups of species that can easily be incorporated into different types of "characteristic species". For fauna, felines (*Felidae*), raptors (eagles, buzzards, kites and hawks), bats (*Chiroptera*) and white-tailed deer (*Odocoileus virginianus*) are proposed; while for flora, the plant families *Burseraceae*, *Cycadaceae*, *Agavaceae*, and the genera *Mamillaria* and *Quercus*. It should be noted that according to the establishment of the baseline during the first year of the project, the species to be considered for each of these groups will be defined more specifically.

MONITORING SYSTEM SUMMARY

The main issues to be considered in a monitoring system in the short and medium term are described below, as well as a summary of methodologies to be applied in each case:

Determine the effect of the use of flora and fauna. Inventories and monitoring of sustainable use of biodiversity (ethnobiological data) are to be carried out on an annual basis, especially in priority areas of study and conservation.To this end, several techniques have been proposed. One of them is to undertake preliminary field trips and interviews with the target population to determine the places where plants grow in situ, where useful fauna is found, or markets where they are sold. After selecting the study areas regular visits will be undertaken to obtain plants and / or botanical structures, register animal data, and obtain ethnobotanical and ethnozoological information. This information is obtained through semi-structured open surveys, based on the methodology of Martin (1997). These data will constitute the basis for a progressive study on an annual basis of sustainable use and management of native species (ecosystem services).

Assess the number of species at risk and their conservation status. This will be carried out via censi and inventories, to determine the number, location and main population data for protected species, making subsequent annual comparative analyses thereof.

To analyze the population dynamics a transition matrix will be developed for each year for each population according to the model proposed by Caswell (1986, 2001). For each population two types of transition matrices (annual and average) will be developed. The annual transition matrices will be used to determine vital rates between categories and years, and for calculating the value of λ per year and make a comparison between years and between sites. With this information the Risk Assessment Method (SRM) will be carried out, based on the specifications given in normative annex II of NOM-059-SEMARNAT-2001 (Method for assessing plant extinction risk in Mexico) (SEMARNAT, 2008).

Determine the degree of conservation of ecosystems. To this end, inventories, monitoring and comparative analyses of the "health" of the main primary ecosystems will be carried out, ie annual monitoring and comparative analyses of biological monitoring indices of heterogeneity, connectivity, density, diversity, similarity coefficients, alpha and beta diversity indices, determination and studies of species biotic features, among others. Each of these data from the communities has its respective analysis, depending on the method chosen in each case.

[1] Characteristic species can be of different types: 1) indicator species, which are sensitive to the effects of ecosystem disturbance, 2) key species, which are dependent on a large set of species in a given ecosystem, 3) umbrella species, requiring a very large area, hence their presence indicating a large number of other species, 4) vulnerable species, facing high risk of extinction in the wild.

Characteristic species can be of different types: 1) indicator species, which are sensitive to the effects of ecosystem disturbance, 2) key species, which are dependent on a large set of species in a given ecosystem, 3) umbrella species, requiring a very large area, hence their presence indicating a large number of other species, 4) vulnerable species, facing high risk of extinction in the wild, already mentioned in the preceding section. The method of study of the characteristic species is similar to that described previously, i.e. field trips will be made to places reported in herbaria or collections of fauna species to be studied in order to compare the existence of the same, and sites with similar environmental characteristics to determine whether the species is found in other sites. Having identified the places of establishment and the number of existing populations, the delimitation of general biotic and abiotic conditions will be done for each site. A representative sample of individuals for each population will be taken and each one mapped and measured. Reproducive data will be taken in accordance with the characteristics of each species.

To analyze the population dynamics a transition matrix will be developed for each year and population according to the model proposed by Caswell (1986, 2001). For each population two types of transition matrices (annual and average) will be developed. Transition matrices will be used to determine the net rates of population growth. With this information the Risk Assessment Method (SRM) will be carried out, based on the specifications given in normative annex II of NOM-059-SEMARNAT-2001 (Method for assessing plant extinction risk in Mexico) (SEMARNAT, 2008).

These data will provide the basis to increase the number of locations where characteristic species are recorded, propose and execute interventions to increase the number of specimens and areas of occupation by characteristic species, an increment in population growth rates, which may help identify the first zero extinction site in the Mixteca for mammals and birds (which generally constitute the principal characteristic species), according to the Zero Extinction Alliance.

Assess the number of invasive species in ecosystems. This will be carried out via censi and inventories, to determine the number, location and main population data for the main invasive species. The methods are similar to those described in the preceding paragraph, which is, field trips will be made to places reported in herbaria or collections of fauna species to be studied in order to compare the existence of the same, and sites with similar environmental characteristics to determine whether the species is found in other sites.

Having identified the places of establishment and the number of existing populations, the delimitation of its general conditions will be undertaken. For the biotic aspect: vegetation type, main target species, vegetation sampling for qualitative estimate of the coverage of tree species and shrubs and density of the species studied will be recorded, while for the abiotic aspect it will be the altitude, slope, aspect and soil data of the sites (pH, texture, percentage of nitrogen and / or organic matter) whilst the records of local weather stations will also be consulted. If there is more than one population of a given species in the study area, two populations should be selected that have adequate numbers of individuals for the study, are representative and also have the largest qualitative difference regarding the degree of disruption of site occupation.

As in the previous case, t o analyze the population dynamics a transition matrix will be developed for each year and population according to the model proposed by Caswell (1986, 2001), as well as the Risk Assessment Method (SRM) based on the specifications given in normative annex II of NOM-059-SEMARNAT-2001 (Method of assessing risk of extinction of plants in Mexico) (SEMARNAT, 2008).

This line of action is important because invasive species are a major cause of biodiversity loss, to compete directly with native species for habitat use and resources, which may cause the extinction of local native species as it has already done in the past.

Create a baseline of biotic information on priority areas for the establishment of ecosystem services and conservation studies. To this end a review of documents, databases and distribution maps of species and ecosystems will be undertaken, as well as the inventory and monitoring of available information and studies to determine important information gaps. It is not feasible to assess ecosystem services, management alternatives, conservation and sustainable use of resources, without the support of a scientific basis, and with limited capacities of researchers and agencies to publish their findings, as well as partnerships that enable these actions.

Determine the effect of land use change in ecosystem services. To achieve this, a study of the current extent of ecosystems will be necessary, through the support of aerial photographs, Geographic Information Systems (GIS) (semiannual or annual comparative data) as well as inventory and monitoring of the annual loss or recovery of area occupied by ecosystems, and its relation to ecosystem services. This involves comparative analyses between different years of information from INEGI's databases of land use and vegetation, using Geographic Information Systems. In areas where verification is deemed convenient to verify the information field visits must be undertaken.

This action is important because it is expected that large areas of primary ecosystems will host a greater number of native wild species and animal and plant populations remain viable. The relative proportions of patch occupancy and species richness of each one are fundamental data for adequate conservation or restoration strategies.

Determine the status of ecosystem fragmentation. To this end, biological indices of heterogeneity, connectivity, density, diversity, censi and inventories, similarity coefficients, alpha and beta diversity indices, as well as a comparative analysis of the degree of annual fragmentation and the surface covered by each fragment of the ecosystems must be evaluated. Prior to the determination of these community variables (each with its own method depending on the formula selected) a comparative SIG analysis must be undertaken. This involves comparative analyses between different years of information from INEGI's databases of land use and vegetation, using Geographic Information Systems. Field visits will be added as necessary for verification purposes.

This line of action is important because the above data may indicate the degree of modification of indirect ecosystem services based on the changes undergone by the primary ecosystems as well as to determine the degree of annual fragmentation year and the area covered by each ecosystem fragment.

15.2 GEF-4 Tracking Tool for GEF Biodiversity Focal Area Strategic Objective Two: Mainstreaming Biodiversity Conservation in Production Landscapes/Seascapes and Sectors

I. Project General Information

1. Project Name: Integratinging tradeoffs between supply of ecosystem services and land use options into poverty alleviation efforts and development planning in the Mixteca
2. Project Type: FSP
3. Project ID (GEF):
4. Project ID (IA):
5. Implementing Agency: UNEP
6. Country: Mexico

Name of reviewers completing tracking tool and completion dates:

	Name	Title	Agency
Work Program Inclusion	David Ortega Gustavo Sanchez	PPG coordinator PPG coordinator	WWF CONANP
Project Mid-term			
Final Evaluation/project completion			

7. Project duration: ***Planned*** 5 years ***Actual***

8. Lead Project Executing Agencies: WWF. Other lead partners: CONANP, CONAFOR

9. GEF Strategic Program: Strengthening the policy and regulatory framework for mainstreaming biodiversity (SP 4)

10. Production sectors and/or ecosystem services directly targeted by project:

10. a. Please identify the main production sectors involved in the project. Please put "**P**" for sectors that are primarily and directly targeted by the project, and "**S**" for those that are secondary or incidentally affected by the project.

Agriculture_____P____
Fisheries_____
Forestry_____P____
Tourism_____P____
Mining_____
Oil_____
Transportation_____
Other (please specify): Natural Non-Timber Products __S_____Palma de sombrero __

II. Project Landscape/Seascape Coverage

11. a. What is the extent (in hectares) of the landscape or seascape where the project will directly or indirectly contribute to biodiversity conservation or sustainable use of its components? An example is provided in the table below.

Targets and Timeframe Project Coverage	Foreseen at project start	Achievement at Mid-term Evaluation of Project	Achievement at Final Evaluation of Project
Landscape/seascape[2] area directly[3] covered by the project (ha)	567,308		
Landscape/seascape area indirectly[4] covered by the project (ha)	910,862		

Explanation for indirect coverage numbers: Integrated management of natural resources and the maintenance or restoration of biodiversity connectivity in the project intervention area will contribute to biodiversity conservation and/or the maintenance of ecosystem services in areas other than those of direct intervention, including the Tehuacan-Cuicatlan Biosphere Reserve, the Sierras Triqui-Mixteca RTP, 57,920 hectares of the Tlaxiaco AICA, and 57,655 hectares of the Cerros Negro-Yucaño RTP principally through improved habitat connectivity.

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11. b. Are there Protected Areas within the landscape/seascape covered by the project? If so, names these PAs, their IUCN or national PA category, and their extent in hectares.

	Name of Protected Areas	IUCN and/or national category of PA	Extent in hectares of PA
1.	Boquerón de Tonalá	Area of Protection of Flora and Fauna	3,912
2.	Valley of Tehuacan-Cuicatlan	Biosphere Reserve	490,187
3.	Tlaxiaco	Priority Bird Conservation Area	149,907
4.	Sierras Triqui-Mixteca	Priority Terrestrial Region	305,100
5.	Cerros Negro-Yucaño	Priority Terrestrial Region	127,400

Note: These areas surround and/or show significant overlap with the project intervention area. Only the first two are official protected areas managed by CONANP. The others are designated by CONABIO for their importance to biodiversity conservation. The purpose of Priority Bird Conservation Areas is to establish a network for the conservation of avian species that serve as tools to help guide decision-makers in prioritizing resource allocations supporting conservation in these areas. The RTPS are terrestrial units that are biodiversity hot spots harboring unique ecosystemic richness with high numbers of endemic species, as well as significant biological integrity and potentially high likelihood of successful conservation efforts.

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[2] For projects working in seascapes (large marine ecosystems, fisheries etc.) please provide coverage figures and include explanatory text as necessary if reporting in hectares is not applicable or feasible.

[3] Direct coverage refers to the area that is targeted by the project's site intervention. For example, a project may be mainstreaming biodiversity into floodplain management in a pilot area of 1,000 hectares that is part of a much larger floodplain of 10,000 hectares.

[4] Using the example in footnote 5 above, the same project may, for example, "indirectly" cover or influence the remaining 9,000 hectares of the floodplain through promoting learning exchanges and training at the project site as part of an awareness raising and capacity building strategy for the rest of the floodplain. Please explain the basis for extrapolation of indirect coverage when completing this part of the table.

11. c. Within the landscape/seascape covered by the project, is the project implementing payment for environmental service schemes? If so, please complete the table below. An example is provided.

Targets and Timeframe	Foreseen at Project Start		Achievement at Mid-term Evaluation of Project		Achievement at Final Evaluation of Project	
Coverage **Environmental Service**	**Extent in hectares**	**Payments[5] generated (US$)**	**Extent in hectares**	**Payments generated (US$)**	**Extent in hectares**	**Payments generated (US$)**

III. Management Practices Applied

12.a. Within the scope and objectives of the project, please identify in the table below the management practices employed by project beneficiaries that integrate biodiversity considerations and the area of coverage of these management practices. Please also note if a certification system is being applied and identify the certification system being used. Note: this could range from farmers applying organic agricultural practices, forest management agencies managing forests per Forest Stewardship Council (FSC) guidelines or other forest certification schemes, artisanal fisherfolk practicing sustainable fisheries management, or industries satisfying other similar agreed international standards, etc. An example is provided in the table below.

Specific management practices that integrate BD	Outcome (Indicator) under which the practice is included (monitored)	Name of certification system being used (insert NA if no certification system is being applied)	Area of coverage foreseen at start of project	Achievement at Mid-term Evaluation of Project	Achievement at Final Evaluation of Project
1. Good agricultural practices (GAP)	3.1 (2) 3.1 (3)	CERTIMEX MAYACERT	Not available; Will gather as part of baseline data during first year of project.		
2. Sustainable livestock practices	3.1 (2)		0 hectares		

[5] Project funds will not be used for ES payments but will be building capacity and helping to increase access by land users to ES payments by government programs and private markets.

3. GNRMP in forestry (wood products)	3.1 (2)		0 hectares		
4. GNRMP for land rehabilitation	3.2 (1) 3.1 (4)		0 hectares		
5. GNRMP for non-timber forestry products	3.1 (2)		0 hectares		
6. Alternative tourism	3.1 (2)	NA	0 hectares		

IV. Market Transformation

13. **For those projects that have identified market transformation as a project objective**, please describe the project's ability to integrate biodiversity considerations into the mainstream economy by measuring the market changes to which the project contributed.

The sectors and subsectors and measures of impact in the table below **are illustrative examples, only**. Please complete per the objectives and specifics of the project.

Name of the market that the project seeks to affect (sector and sub-sector)	Unit of measure of market impact	Market condition at the start of the project	Market condition at midterm evaluation of project	Market condition at final evaluation of the project

V. Policy and Regulatory frameworks

For those projects that have identified addressing policy, legislation, regulations, and their implementation as project objectives, please complete the following series of questions*:* 14a, 14b, 14c.

An example for a project that focused on the agriculture sector is provided in 14 a, b, and c.

14. a. Please complete this table at **CEO endorsement for each sector** that is a primary or a secondary focus of the project.
Please answer YES or NO to each statement under the sectors that are a focus of the project.

Sector Statement: Please answer YES or NO for each sector that is a focus of the project	Agriculture	Fisheries	Forestry	Tourism	Natural Non Timber Products
Biodiversity considerations are mentioned in sector policy	YES		YES	YES	YES
Biodiversity considerations are mentioned in sector policy through specific legislation	N/D		N/D	N/D	N/D
Regulations are in place to implement the legislation	NO		NO	NO	NO
The regulations are under implementation	NO		NO	NO	NO
The implementation of regulations is enforced	NO		NO	NO	NO
Enforcement of regulations is monitored	NO		NO	NO	NO

14. b . Please complete this table at **the project mid-term for each sector** that is a primary or a secondary focus of the project.
Please answer YES or NO to each statement under the sectors that are a focus of the project.

Sector Statement: Please answer YES or NO for each sector that is a focus of the project	Agriculture	Fisheries	Forestry	Tourism	Natural Non Timber Products
Biodiversity considerations are mentioned in sector policy					
Biodiversity considerations are mentioned in sector policy through specific legislation					
Regulations are in place to implement the legislation					
The regulations are under implementation					
The implementation of regulations is enforced					
Enforcement of regulations is monitored					

14. c. Please complete this table at **project closure for each sector** that is a primary or a secondary focus of the project.
Please answer YES or NO to each statement under the sectors that are a focus of the project.

Sector **Statement: Please answer YES or NO for each sector that is a focus of the project**	**Agriculture**	**Fisheries**	**Forestry**	**Tourism**	**Natural Non Timber Products**
Biodiversity considerations are mentioned in sector policy					
Biodiversity considerations are mentioned in sector policy through specific legislation					
Regulations are in place to implement the legislation					
The regulations are under implementation					
The implementation of regulations is enforced					
Enforcement of regulations is monitored					

All projects please complete this question at the project mid-term evaluation and at the final evaluation, if relevant:

14. d. Within the scope and objectives of the project, has the private sector undertaken voluntary measures to incorporate biodiversity considerations in production? If yes, please provide brief explanation and specifically mention the sectors involved.

An *example* of this could be a mining company minimizing the impacts on biodiversity by using low-impact exploration techniques and by developing plans for restoration of biodiversity after exploration as part of the site management plan.

_____
_____
_____
_____
_____

VI. Other Impacts

16. Please briefly summarize other impacts that the project has had on mainstreaming biodiversity that have not been recorded above.

_____
_____
_____
_____
_____

Appendix 16: Description of Stakeholder Organization Functions

Actor	Description of functions	
Public sector		Current impact in project area
CDI (National Commission for the Development of Indigenous Peoples)	Decentralized organization with the objective of promoting and supporting integrated and sustainable development of indigenous communities.	High
CEA (State Water Commission)	The general objective of the CEA is to administrate the State's hydrology resources through integrated watershed management. The premise is that only through proper watershed management can water availability be guaranteed to meet future demands.	Low
CNA (National Water Commission)	The mission of CNA consists in administrating and preserving national waters, with the participation of society, in order to achieve sustainable use of this natural resource.	Low
COINBIO (Indigenous and Community Biodiversity Project)	This is an initiative in favour of indigenous communities supported since 2001 by the Government of Mexico with the financial support of GEF through the World Bank. The objective of the programme is to preserve areas high in biodiversity in indigenous communities through the strengthening and promotion of community initiatives for the conservation and sustainable use of biological resources within a group of priority zones in Oaxaca. To the end of achieving the conservation and sustainable use of biological resources, the COINBIO programme tries to build on positive cultural values and traditional forms of management of natural resources that these communities have developed.	High
CONABIO (National Biodiversity Commission)	The mission of CONABIO is to promote, coordinate, support and undertake activities on biodiversity knowledge such as conservation and sustainable use for the benefit of society. It was conceived as an applied research organization and promoter of basic research, which compiles and generates information on biodiversity, develops capacity in biodiversity information processing and is a public source of information and knowledge accessible to all of society.	Low
CONACULTA (National Council for Culture and the Arts), General Direction of Popular Cultures	The General Direction of Popular Cultures is a unit of COACULTA with more tan 30 years of experience in promoting the study, conservation, dissemination and development of the popular and indigenous cultures of Mexico. Its fundamental mission is to contribute to the creation of conditions and the development of instruments for facilitating respectful and harmonious inter-cultural dialogue, which permits the expression of the cultural richness and diversity of the country. Its objectives are to foment the preservation and dissemination of urban, rural and indigenous popular manifestations.	Undetermined
CONAFOR (National Forestry Commission)	CONAFOR is a decentralized organization of SEMARNAT whose mission is to achieve good management and appropriate use of natural resources, generate economic development based on conservation and sustainable use of natural resources, drive forestry planning and organization and increase the production and productivity of forest resources through their conservation, restoration, protection and transformation.	High
CONANP (National	Decentralized organization of SEMARNAT with the objective of promoting the conservation of ecosystems and their biodiversity in protected areas and	High

Actor	Description of functions	
Commission of Protected Natural Areas)	other forms of conservation through sustainable development of natural resources, alternative production practices and the strengthening of local management capacities favouring conservation and sustainable development.	
CONAZA (National Commission for Arid Zones)	Is a specialized technical body in the planning, regulation, directing and deign of policies and programmes oriented to control desertification through the use, management and conservation of soils, water and the vegetative cover of fragile lands, with a preventive and productive focus.	High
COPLADE (State Committee for Development Planning)	Contributes to the formulation, updating, implementation and evaluation of the State Development Plan, reconciling the efforts undertaken by federal, state and municipal governments, both in the processes of planning, programming, evaluation and information as in the implementation of projects and the delivery of public services, creating collaboration among the different sectors of society. Its mission is to coordinate the formulation and implementation of development and public investment plans and programmes and statistical and geographic information services that aim to achieve national well-being averages in the State of Oaxaca, focusing on sustainability, gender equality and multiculturalism.	High
DIF (Integrated Family Development)	Is a decentralized public organization charged with the coordination of public and private social assistance activities. It seeks to be the promoter of actions for supporting those sectors of the population, particularly families, which for different circumstances are disadvantaged. To this end, it works in coordination with municipalities, state and federal dependencies, corporations and national and international NGOs.	Undetermined
FIRCO (Endowment for Shared Risks)	The Endowment for Shared Risks is a para-state body created by presidential decree under the SAGARPA sector to promote agro-businesses and rural development of micro-watersheds and to undertake functions of technical agent for programmes in the agricultural and fishing sectors.	Undetermined
IEEO (State Institution of Ecology of Oaxaca)	Decentralized public organization of the state government with normative, implementing and coordination faculties in environmental matters. It manages, monitors, protects and regulates the use and responsible management of the natural heritage of Oaxacan society. Compliance of the Law of Ecological Equilibrium of the State of Oaxaca is deposited in IEEO.	Low
INAH (National Institute of Anthropology and History)	Is the federal state body, founded in 1939, for promoting and guaranteeing research, conservation, protection and dissemination of the prehistoric, archaeological, anthropological, historical and paleontological heritage of Mexico.	Medium
INEGI (National Institute of Statistics and Geography)	Provides country geographic and statistical information services.	Low
Municipalities	Local political and administrative units.	High
PROFEPA (Attorney General of Environmental Protection)	Federal government institution, a dependency of SEMARNAT, charged with inspection and monitoring in the protection, use and exploitation of natural resources.	Low
SAGARPA (Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food)	Secretariat of the federal government that has as its objective the promotion of the implementation of a policy of support that permits better production, optimization of the comparative advantages of the agricultural sector, integration of rural activities in the chain of production of the rest of the economy, and stimulation of collaboration among producers organizations with its programmes and projects, as well as with the proposed goals and objectives for the agricultural sector contained in the National Development	High

Actor	Description of functions	
	Plan.	
SECTUR (Secretariat of Tourism)	Is responsible for promoting tourism activities.	Low
SEDER (Secretariat of Rural Development)	Secretariat of Rural Development of the state government whose mission is to generate and promote sustainable development processes in rural zones of the State of Oaxaca through the implementation of policies, programmes and actions of inter-institutional coordination, organization and capacity building of producers, integration of chains of production, management of economic resources, transformation and commercialization, follow-up and evaluation, which lead to nutritional self-sufficiency and improved production, productivity and competitiveness of rural stakeholders, resulting in more employment, income and social well-being.	High
SEDESOL (Secretariat of Social Development)	Secretariat of the federal government whose principal objective is to combat extreme poverty.	High
SEGOB (Secretariat of Government)	Is responsible for follow-up to the political agenda of the state government.	High
SEMARNAT (Secretariat of the Environment and Natural Resources)	Is the dependency of the federal government that has as its fundamental purpose the promotion of protection, restoration and conservation of ecosystems and natural resources, and environmental goods and services, with the goal of achieving sustainable development and use.	High
SRA (Secretariat of Agrarian Reform)	The Secretariat of Agrarian Reform is charged with providing juridical certainty in land tenancy for the target population through the promotion of land use plans and the regulation of rural property, as well as through the elaboration of public policies that foment access to justice and integrated agrarian development.	High
Tehuacán-Cuicatlán Biosphere Reserve	Is a natural protected area under the direction of CONANP and represents one of the largest Regional Priority Areas for Conservation (RPC) in the country, with approximately 50 municipalities of the States of Puebla and Oaxaca.	Low
Priority Region for the Conservation of the Montaña de Guerrero	Is a priority region for CONANP within the Central Region and Neo-volcanic Axis. Important work has been undertaken in areas of conservation and ecosystem management by MIE-CONANP.	Nil
Academic and research institutions, including NGOs		Potential impact
CIESAS (Center of Research and Higher Studies in Social Anthropology, Oaxaca center)	Founded in 1987 through a coordination agreement between CIESAS and the state government, the Oaxaca center is the youngest in CIESAS, undertaking research on indigenous peoples of the region. The principles for its research remain valid, but it is necessary to broaden its scope in terms of regional requirements related to anthropology and social sciences.	Low

Actor	Description of functions	
CIIDIR (Inter-disciplinary Research Center for Regional Integrated Development of Oaxaca)	As part of policies to promote decentralization of research, technology development and postgraduate education in regions strategic for their potential and shortcomings, the Inter-disciplinary Research Centers for Regional Integrated Development were created, including CIIDIR Oaxaca in 1983. These centers are committed to: contribute through educational processes to the transformation of society in a democratic sense and through social progress; undertake scientific and technological research with a view to advancing knowledge, the development of education in technologies and better social use of natural resources and materials; promote in its students and graduates democratic and solidarity attitudes that reaffirm Mexico's economic independence; and guarantee and broaden access by students of limited economic resources to the teaching provided by the Center.	High
Ethnobotanic Garden of Oaxaca	The Ethnobotanic Garden contains hundreds of living plants that are natives of Oaxaca. They were first planted in 1998. They come from different parts of Oaxaca, including from arid and humid climates and from lower tropical zones to temperate and cold mountainous areas. The Garden represents the great variety of climates, geological formations and types of vegetation that characterize Oaxaca. In addition to collecting, planting, caring and propagating Oaxacan plants, the Ethnobotanic Garden carries out activities in research, education and floral conservation. It has a nursery, a seed bank, a herbarium and a specialized library where the public can access information on flora, vegetation, ecology, natural history and ethnobiology.	Medium
Higher Technological Institute of Teposcolula	The Institute is proposing a degree in community development engineering. The purpose would be to form highly qualified professionals capable of contributing to the transformation of the social reality, with a theoretical and methodological foundation for promoting sustainable use of resources and elevating the quality of life of he inhabitants.	Medium
Higher Technological Institute of San Miguel El Grande	Was created for the purpose of providing education to the youth of remote communities and at the same time meet the needs of the region for development based on scientific research. Its mission is to promote the integral formation of creative and innovative humanistic professionals capable of contributing to sustainable development at the regional and national levels through research, respect to the principles of multiculturalism and natural diversity.	Medium
INIFAP (National Institute of Forestry and Agropastoral Research)	Contribute to sustainable, equitable, competitive and productive development of the agricultural and forestry chains through the generation and adaptation of scientific knowledge and technological innovations and the formation of human resources, for tending to the demands and needs in benefit of the sector and society within the framework of institutional cooperation with public and private organizations.	High
ITVO (Technological Institute of the Oaxaca Valley)	Public institution that provides higher and post-graduate education, which undertakes research and linkages, forming quality professionals for contributing to social development.	Medium
ITO (Technological Institute of Oaxaca)	Provides technology education at the higher and post-graduate levels for forming technical professionals in the social service and industrial areas. Encourages the establishment of its graduates in their areas of origin, thus promoting participation in regional development. Has programmes in continuing education and adult education.	Medium
Mexican Cactus Society	The Mexican Cactus Society is a non-profit NGO whose members are enthusiasts and scientists. It has members that are renowned researchers	

Actor	Description of functions	
	specialized in cacti and succulents, as well as enthusiasts from all over the world. The Society has the following objectives: the study of succulent plants, principally Mexican species; their conservation and propagation; and the promotion of their appreciation. Since 1955 it has published a trimestral periodical entitled *Cactáceas y Suculentas Mexicanas*.	
UNAM (National Autonomous University of Mexico)		
UABJO ("Benito Juarez" Autonomous University of Oaxaca)		
UTM (Technological University of the Mixteca)	The Technological University of the Mixteca is a decentralized public organization of the State of Oaxaca, founded through state executive decree in June of 1990. Its multi-faceted purpose is to offer opportunities for relevant and quality scientific and technological formation to those seeking higher education, to discourage the emigration of young Oaxaqueños, to contribute to projects that stimulate the economy and create employment, as well as to create cultural opportunities that help spread the benefits of knowledge to the general population.	High
Welte Institute	The library of the **Welte Institute** houses the most comprehensive and accessible bibliographic collection in Oaxaca on Oaxaca. The collection of over 10,000 titles in English, Spanish, and other languages includes almost everything written in the past 40 years on Oaxacan architectural history, archaeology, economy, ethnology, geography, history, linguistics, humanities, political science, sociology, and more. The library also possesses an extensive collection of maps and historical documents, some of them extremely rare. The library is free and open to the public.	
Civic groups		Potential impact
Binational Oaxacan Indigenous Committee		
Committee of the Rio Mixteco Watershed	The geographic surface covered by this committee involves a major part of the project area and it is of vital importance that the committee carries out its work expeditiously and efficiently.	Critical
Communal (*ejido*) Assemblies	The communal or ejidal assembly is recognized throughout the region as the maximum body for the deliberation and taking of decisions over the use and fate of its territory.	Critical
CORRENAC (Comité Regional de Recursos Naturales de la zona Centro de Huajuapan de Leon)	Constituted eight years ago, the Committee brings together representatives of the Bienes Comunales, municipal authorities and civil society organizations. It is an organism of management and transparency of government action in the northern zone of the region.	Critical

Actor	Description of functions	
Regional Natural Resources Committee of the Mixteca Tlaxiaco-Putla-Juxtlahuaca, A.C.	One of the oldest committee in the State of Oaxaca with approximately 11 years of uninterrupted work. It is an organism of management and transparency of government action in the southern zone of the region.	Critical

Appendix 17 – Alternative Tourism for the Oaxacan Mixteca

To conduct biodiversity friendly programmes in the areas of interest – nature tourism projects that will lead to improving the standard of living and the conservation of traditional communities in affected areas.

Background

Ecotourism in Mexico

Interest in eco- and nature tourism has grown to such an extent that the Secretary for Tourism called for a strategic study to be carried out into the viability of ecotourism in Mexico *(Estudio Estratégico de Viabilidad del Segmento de Ecoturismo en México).*The study showed that in 2001 the estimated annual value of nature tourism activities was more than US$58.5 million – of which 64.2% or US$37.6 million was generated by international visitors and 35.8% or US$20.9 million by national tourists.

With regard to financial support for nature tourism projects in Mexico, in 2005 US$26.9 million was invested of which 65% came from federal government funds and 35% from other sources, according to the Tourism Secretary. Ninety-three percent of these funds were destined for infrastructure and equipment with just 7% being invested in training, publicity, studies and technical assistance.

Although investment to date has been modest it must be pointed out that every year more resources are destined for tourism activities, as the following table shows:

Year	Allocation (million US$)	Amount provided by state, municipalities and NGOs	Total amount invested (million US$)
2005	18.24	9.40	27.64
2004	13.41	4.00	17.41
2003	10.00	2.47	12.47
2002	13.62	4.39	18.01
2001	3.84	2.52	6.36

Información al 21 de febrero de 2006
Fuente: SEMARNAT, CONANP, CONAFOR, CDI, SAGARPA, SEDESOL, SRA, SE, FONATUR, CPTM, FONAES, Financiera Rural

By the end of 2006 a total of 1,239 nature tourism projects were being developed of which 73.7% (914) were of a communal character and the rest were being developed privately. Seventy percent of these projects are now operational.

Institutional and Legal Framework

The Umbrella Programme for Ecotourism, Rural Tourism, Adventure Tourism and Other Nature Tourism Activities 2005-2015 was set up in response to the government's National Tourism Programme 2001-2006, specifically with regard to Sectoral Objective 15 which calls for:

- The Development of Competitive Tourist Products as a strategy to reach specific market segments and the compromise established in the Agreement of the General Convention on Inter-Institutional Collaboration for the Development of Eco- and Rural Tourism.

Within the National Tourism Programme the importance of nature tourism is recognized as much for its contribution to balanced development as for its attraction to the global travel industry. The programme points out the need for coordinated efforts that favor the streamlining of criteria, programmes, consensus and cooperation in planning, development, operation, promotion and commercialisation of eco-, rural and adventure tourism activities.

No formal study has been undertaken to show the overall funding of community tourism initiatives, nor have criteria been established that could serve to generate performance indicators. Some international resources have been employed to set up community tourism projects in the region. However, most support has come from federal government sources such as the Commission for Natural Protected Areas (CONANP) and the Commission for the Development of Indigenous Peoples (CDI). CONANP has worked mainly through PET and PROCODES and the CDI through the Alternative Tourism Programme in Indigenous Zones (PTAZI).

The General Convention on Inter-Institutional Collaboration for the development of Nature Tourism in Mexico 2007-2012 is still in effect. This agreement was signed by 14 federal government institutions and outlines 14 strategies that are based on the Strategic Programme for Nature Tourism. Two of the 14 strategies are strongly linked to the UN Millennium Goals concerning the eradication of poverty, environmental conservation, and increasing access to new technologies. In particular, the Convention calls for:

- The designing of sustainable development models for nature tourism in specific regions, taking into account the characteristics of the indigenous people and their local communities.

- The promotion of businesses dedicated to nature tourism, incorporating criteria for propagating environmental considerations such as the efficient use and management of water resources as well as the treatment and recycling of waste water; actions to protect vegetative cover and wildlife species of flora and fauna; the use of alternative sources of energy and the design of bioclimatically-friendly infrastructure, the minimization and adequate management of garbage, including effective recycling and disposal measures; as well as measures to protect and conserve the cultural, archaeological and historical patrimony of the areas.

Tourism in Mexico's Protected Areas

Nature tourism in Mexico's 69 Protected Natural Areas (ANPs) has increased significantly in recent years. Between 2002 and 2005 almost 20 million visitors were registered, generating an influx of approximately US$400 million, according to data provided by the National Commission on Natural Protected Areas. ANPs are fundamental to the development of nature tourism, particularly since their management is already upheld by public policies and national legislation to protect, regulate

and set up norms for the sustainable use of their natural resources which guarantees their protection in the long-term. With more effort and innovation ANPs could reap further benefits from ecotourism, particularly if this sector could be solidly organized and developed as a niche market that attracts a wide sector of society.

Tourism in the Oaxacan Mixteca

The rich history, culture and diverse environment of the Oaxacan Mixteca has great potential for tourism and could be a significant source of work and income for indigenous inhabitants of the region. However, there is a distinct lack of information about tourism in the Oaxacan Mixteca because there has been little or no effort to commercialise such activities, particularly with regard to long distance tourists. Most visitors to date are from within the region and they largely focus on historical tourist sites. In addition, there is a significant community of visitors who come to research or study the region although they make little contribution to the economies of the communities that receive them and there are practically no indicators to show the impact of their visits on the communities in question. The main tourist centres are the cities of Oaxaca and Huajuapan de León with most hotels and lodgings located in and around the latter. Tour operators are scarce and located only in Oaxaca, which shows the currently low profile of this type of economic activity. In all, only around 15 organisations offer nature tourism services on a regular basis and these are dispersed throughout the entire region.

Eco- or nature tourism

Suggestions to develop nature tourism activities in the Oaxacan Mixteca have already been put forward in the region's Sustainable Development Plan which recognises that state tourism represents historically and effectively one of the best alternatives to promote economic and social development, improve individual incomes, generate employment, raise earnings and boost the local economy. Conservation mechanisms, the consolidation of practices that affect the standard of living and quality of life of the affected communities and, to some degree, the incorporation and access to new technologies are all contemplated within the general framework of the planned project. The Sustainable Development Plan specifically mentions the Dominica Trail of Oaxaca – Yanhuitlán – Teposcolula – Coixtlahuaca which is the most successful tourism initiative so far and which it highlights as one of the most important starting points for nature tourism developments in the region. Overall, though, there have been few real efforts to exploit the commercial potential of ecotourism locations in the region and, in general, ecotourism activities based on natural ecosystems in the Oaxacan Mixteca are still in their fledgling stages. Some institutions have started to develop infrastructure and consolidate the activities of some community groups but these efforts still have a long way to go before they can be considered as true commercial ventures.

Yet without a doubt, Mixteca ecosystems have great potential for nature tourism activities because they represent biodiversity hot spots that harbor unique ecosystemic richness, significant biological integrity and maintain an important degree of endemism. The Mixteca Alta has approximately 1,600 species of flora, 163 (10.5%) of them endemic, 97 restricted in habitat, and 15 protected by Mexican law. The pine-oak forests of Mexico contain the largest amount of the world's species of pine trees, with more than 50% of the earth's total. They are also the Western Hemisphere's principal ecosystem containing oak species, accounting for 33% of the total number of all species in the world (Styles 1993, Nixon 1993, Challenger 1998). There are four endemism zones in the Mixteca Alta: Hondo river zone (28 taxa), Tamazulapan, Teposcolula, Chilapa and Coixtlahuaca town zones (9 taxa), Mixtepec river zone (6 taxa) and the Sedas Mountains (7 taxa).

As indicated in the FSP, this GEF project has designated four priority project intervention areas in the Oaxacan Mixteca. These four zones covering approximately 567,308 hectares or one third of the Oaxacan Mixteca comprise an irregular, mountainous terrain that could function as biological corridors to connect already protected reserves located along their boundaries. These reserves include to the northeast the Valley of Tehuacan-Cuicatlan Biosphere Reserve which occupies 490,187 hectares and contains almost 3,000 species of vascular plants, of which one-third are endemic.

Other protected areas and specially designated conservation management areas include the Priority Terrestrial Regions of the Sierras Triqui-Mixteca (305,100 ha) in the southwest part of Oaxaca and Cerros Negro Yuncaño (127,400 ha); and the Boquerón de Tonalá Area of Protection of Flora and Fauna (3,912 ha). In addition, the Tlaxiaco Priority Bird Conservation Area (AICA) covers an area of 117,342 hectares to the south of the Oaxacan Mixteca. Together this creates an overall area that could potentially be developed as an ecotourism destination.

Potential of Oaxacan Mixteca Protected Areas for Ecotourism

So far, one of the most consolidated municipalities for tourism in the Oaxacan Mixteca is Santo Domingo Tonalá where the 3,912 hectare Boquerón de Tonalá Area of Protection of Flora and Fauna was designated as a Wildlife Management Zone (Unidad de Manejo de Vida Silvestre) in 2008. Inventories of flora and fauna in Tonalá show the presence of 54 mammals, 334 birds and 42 reptiles of which 11 are endemic. Biodiversity species of significance include the agaves, which have a high level of diversification in this part of the Mixteca, several rare and endemic plants, including cicadas of the genus *Dion* in the Blasas depression, *Beaucamea* sp., *Milla magnifica*, *Fouqueria ochtereane*, *Mammillaria tonalensis*, *Brusera* sp., *Orquideas* sp., and others, and fauna such as the puma and white tailed deer. Other towns with similar well-preserved biological richness include San Marcos Arteaga, San Jorge Nuchita, Tezoatlán de Segura y Luna, Yodohino and Dinicuití.

The Tlaxiaco Priority Bird Conservation Area (AICA) to the south of the Oaxacan Mixteca covers an area of 117,342 hectares and is characterized by the highest altitudes in the region and representative ecosystems of pine and pine-oak forests. These forests provide a habitat for, and the eastern most nesting site of, the golden eagle (*Aquila chrysaetos*), which is an emblematic symbol on Mexico's shield and flag and is in danger of extinction (NOM 59). This region also provides habitat for the endangered white-tailed hummingbird (*Eupherusa poliocerca)*, according to Birdlife's Red Book. This species can be found only in two specific locations, one in Guerrero and the other in Oaxaca. Another two species of rare hummingbird, (*Phaethornis superciliosus* and *Amazilia viridifrons*) and the small toucan (*Aulachorhynchus prasinus*) can also be found here although they have a restricted range. In addition, the National Institute of Anthropology and History is studying archaeological sites within the Tlaxiaco Bird Sanctuary connected to areas covered with well-conserved vegetation.

Despite being difficult to access, there is clearly great potential here for the development of sustainable nature tourism activities such as specialised bird and animal watching, archaeological excavations, cloud forest trails, nature hikes, etc, as well as scientific and technical visits, that could bring substantial economic benefits for the local populace in this area. There is already one eco-tourism project linked to the conservation of ecosystems in and around San Augustin Cuevas and

the Tlaxiaco sanctuary is also the site of projects by CDI, SEMARNAT and CONANP. In addition, CONAFOR and civil society organizations have a strong presence in this area.

Other sites with potential for tourism development include the Yosocuta Reservoir which supplies water to Huajuapan de Leon and other towns in the district. There are already a limited number of visitors to this site but mostly connected with drinking water issues. Wider tourism activities that could exploit the area's scenic potential and simultaneously highlight water conservation efforts have not yet been developed.

Similarly the 10-year old soil conservation and reforestation and nursery projects in Santiago Tilantongo could be linked into local tourism excursions that would demonstrate the benefit of such conservation efforts over time and help to raise environmental consciousness. Likewise, traditional medicine centres could play a part in the nature tourism circuits that have the potential to be established in this area.

The way ahead

Before projects get underway, an integrated analysis is needed of the kind of tourist products envisaged in the first phases of project intervention in areas where tourist infrastructure is to be developed. Numbers of tourists, the length of time they stay, where they come from and go on to and the kind of activities they can participate in need to be analysed. An investigation is needed into how tourism infrastructure can be equipped with environmentally friendly technologies that promote conservation practices.

More information is also needed on the likely impacts of nature tourism activities on ecosystem services, though it is generally accepted that, if properly managed, impacts are mostly positive and ecotourism could become an effective mechanism to achieve sustainable development and promote environmental awareness. For example, the Sustainable Development Plan recognises that the contamination of rivers, beaches and streams has become one of the major threats to the sustainability and growth of the tourism sector, particularly since there is also a lack of environmental clean-up and sanitary infrastructure plans. Any development activity that brings about a diminution in pollution and an increase in environmental clean up will clearly have positive effects on the ecosystem as a whole, even if the impetus for initiating such activities is economic, rather than for purely environmental reasons. Clearly any kind of ecotourism intervention in this area will be able to add to the knowledge base on the likely impacts of ecotourism as a whole.

Logical Framework

The logical framework for developing nature tourism as an industry in the Oaxacan Mixteca involves such issues as developing tourism products, defining focal towns (hubs) and equipping them with the necessary type of infrastructure to serve as a base for tourists, and the conceptualisation and operation of commercial activities.

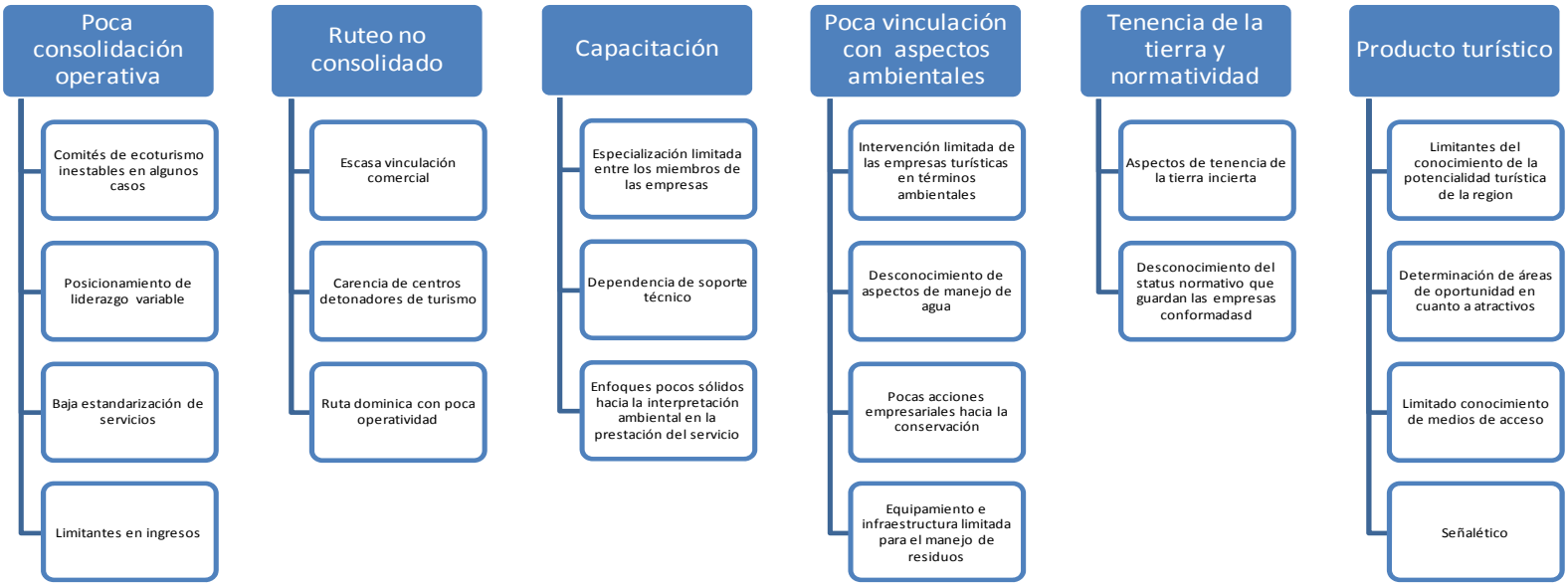
Possible Interventions

There are two potential lines of intervention for developing nature tourism activities in the Oaxacan Mixteca: the first is based on strengthening the performance of those already involved in the industry; the second involves seeking to introduce and enable other participants to play a role in the ecotourism sector.

Institutional stakeholders tend to favor the first idea of consolidating all existing community businesses that have already received funding to include ecotourism initiatives within their workplans. In this way existing community leaders who already play an active role in their communities could become involved in the short term in a pilot ecotourism project that could later be replicated in other potential ecotourism zones. Such pilot projects could involve, for example:

1. Management of ecotechnologies in the installations of community nature tourism businesses.
2. The distribution and promotion of knowledge about conservation through positive interactions with tourists.
3. A more diversified and mixed local economy based on community conservation and sustainable production practices that generate income from the tourist sector.
4. Biodiversity conservation by the community nature tourism business.
5. Correct and sustainable management of freshwater resources and waste and residual waters.
6. Setting norms and standards for the allocation and use of land for community nature tourism businesses in the Oaxacan Mixteca.

More details of these six potential interventions are specifed in the attached spreadsheet.



Thematic mapping of issues involved in developing ecotourism activities in the Oaxacan Mixteca.