



PROJECT EXECUTIVE SUMMARY

GEF COUNCIL SUBMISSION

AGENCY'S PROJECT ID: P089171
GEFSEC PROJECT ID:
COUNTRY: Mexico
PROJECT TITLE: Environmental Services Project
GEF AGENCY: World Bank
OTHER EXECUTING AGENCY(IES):
DURATION: 4 years
GEF FOCAL AREA: Biodiversity
GEF OPERATIONAL PROGRAM: Forest Ecosystem – OP 3; and Mountain Ecosystem – OP4
GEF STRATEGIC PRIORITY: Catalyzing Sustainability of Protected Areas (SP-1), Mainstreaming Biodiversity in Production Landscapes and Sectors (SP-2)
Pipeline Entry Date: 03/24/2004
ESTIMATED STARTING DATE: July 3, 2006


FINANCING PLAN (US\$)	
GEF PROJECT/COMPONENT	
Project	15,000,000
PDF A	
PDF B	350,000
PDF C	
Sub-Total GEF	15,350,000
CO-FINANCING*	
World Bank	80,725,000
Government	53,333,000
Beneficiaries	32,734,000
<i>Sub-Total Co-financing:</i>	166,792,000
<i>Total Project Financing:</i>	182,142,000
FINANCING FOR ASSOCIATED ACTIVITIES IF ANY:	
LEVERAGED RESOURCES IF ANY:	

CONTRIBUTION TO KEY INDICATORS OF THE BUSINESS PLAN: The project will contribute to the GEF Business Plan and is consistent with two GEF Biodiversity Strategic Priorities: Catalyzing Sustainability of Protected Areas (SP-1) and Mainstreaming Biodiversity in Production Landscapes and Sectors (SP-2). It will do so by supporting development of the systemic and institutional capacities of government agencies and other stakeholders including NGOs and the private sector. Furthermore, it will help create innovative market mechanisms to promote biodiversity conservation. Through the project interventions (i) 200,000 hectares of forests and other natural ecosystems of global biodiversity significance will be placed under effective conservation (protection and sustainable management) in the buffer zones of protected areas and the corridors that connect them, including the Mexican portion of the Mesoamerican Biological Corridor; (ii) effective biodiversity conservation will be achieved in the project sites as measured by increased vegetation cover and status of indicator species of conservation interest; and (iii) long-term financing mechanisms will be put in place for biodiversity conservation.

RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT(S):

Claudia Grayeb Bayata, Director of Public Credit, Secretary of Finance and Public Credit Date: September 1, 2005

Approved on behalf of the World Bank. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for work program inclusion.

Steve Gorman 
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Date: September 2, 2005

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1. PROJECT SUMMARY

a) Project rationale, objectives, outputs/outcomes, and activities.

1. Mexico is one of the mega-biodiversity countries in the world, with first place in reptilian diversity, second in mammals, and fourth in plant diversity. Its plant diversity exceeds that of the United States and Canada combined. The total number of known species in Mexico is about 65,000, but there are thought to be at least 212,000, as many areas and many taxonomic groups have not yet been studied in detail. There are at least 6,000 known species of fungi in Mexico (9 percent of the world total). Mexico's vertebrate fauna are among the richest in the world, with over 5,000 species (almost 10 percent of the world total), of which about 1,000 (20 percent) are endemic. Invertebrate species number almost 30,000, taking into account only marine invertebrates and arthropods, of which nearly 7,000 (almost 25 percent) are endemic to Mexico. It is regarded as one of the world's most important centers of genetic diversification in plants and one of the areas where agriculture originated. Some 120 cultivated plant species belonging to 39 families originated in Mexico, including cocoa, kidney beans, maize, and tomatoes.

2. Mexico's biological wealth is extraordinary but the future is precarious. Two of the most important environmental challenges facing Mexico are water scarcity and deforestation. Aquifer overexploitation, water quality degradation, and high deforestation rates are seriously threatening critical ecosystems and globally significant biodiversity. One-third of birds and nearly 66 percent of amphibian, reptile, and mammal species are at risk. The wild species whose state and patterns of conservation are in decline are legally protected by Mexican Official Standard NOM-059-ECOL-2001; 2,582 species and subspecies are at risk (161 more than under the previous 1994 standard), of which 41 are already extinct in the wild, 1,215 are endangered or threatened with extinction, and 1,326 are subject to special protection.

3. In recent decades, Mexico has suffered one of the world's highest deforestation rates, second only to Brazil. FAO had consistently reported a loss of around 1.3 percent per year, of which 66 percent occurred in tropical forests, including areas of high biodiversity value. In 1993, Mexico had 70 million hectares of forest and tropical forest. By 2000, 3.1 million hectares had been transformed to agricultural uses and 5.1 million hectares had been converted to pasture (Velasquez et al., 2002). In contrast, only 1.7 million hectares of agricultural land, pasture, or degraded forest had experienced natural or human-assisted recovery and could once again be classified as being in a good state of conservation. Furthermore, where forests do remain standing, poor management practices have resulted in genetic quality degradation and the loss of regenerative capacity.

4. To address the daunting challenge of environmental issues in the country, the Government of Mexico (GOM) has taken a number of legislative, institutional, and budgetary actions. Two such complementary initiatives are (i) the creation and management of protected areas; and (ii) providing economic incentives to induce changes in landholder behavior to protect the environment. The GOM created the National System of Protected Natural Areas (SINAP) in 1986 to provide protection to some of its rich habitats and biological diversity. With support from GEF and the World Bank, an endowment fund was created to capitalize financial resources to provide long-term financing for protecting SINAP. Furthermore, the Mexican government has pledged to be committed to a "zero" deforestation target. In addition, the government has been piloting economic incentive mechanisms for changing landholder behaviors to promote

conservation measures at the broader landscape level. The introduction of a fiscal instrument (e.g., the water fee) and the Payments for Hydrological Environmental Services Program (PSAH) are examples of the GOM's serious commitment to conservation and sustainable use of its natural resources. To advance this agenda, the GOM has asked the World Bank and GEF to help prepare the proposed project.

5. The **project development objective** is to improve the provision of environmental services that bring both national benefits (primarily water services) and global benefits (primarily increased biodiversity conservation) by strengthening and expanding existing programs for payment of environmental services (PES) related to water (PSAH) and to carbon capture and biodiversity (CABSA) as well as supporting the establishment of new local PES mechanisms. The **global environment objective** of the project is to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems. The objectives will be achieved through (i) strengthening the capacity of CONAFOR, INE, community associations, and NGOs to increase flexibility and improve efficiency of existing service provision to support long-term development of the PSAH program in Mexico; (ii) establishing sustainable long-term financing mechanisms including an endowment fund for biodiversity conservation; (iii) establishing legal, institutional, and financial arrangements to pilot market-based mechanisms for payment for environmental services, (iv) documenting links between land use changes, water services improvements, and biodiversity conservation, and (v) defining good practices to replicate, scale up, and sustain programs based on PES markets.

6. The proposed project will ensure that only sites with globally significant biodiversity will receive GEF funds under the national or local programs, in the project area. Furthermore, all land management systems with PES support under the project (from any funding source) will be biodiversity-friendly (see the Project Brief - Annex 10 for details). As detailed in the Project Brief - Annex 17, all eight of the pilot sites where PES systems would be established, strengthened, or continued under the project were chosen to overlap with at least two of the following high-priority biodiversity conservation designations: (i) existing Natural Protected Areas; (ii) Priority Terrestrial Ecoregions established by CONABIO; (iii) Important Bird Areas that are vital to the survival of endemic species or to protecting key bird breeding, feeding, and migration areas; and (iv) Ramsar Wetlands of International Importance.

7. The project has four technical components and one project management component. Component 1 focuses on developing sustainable financing mechanisms. Component 2 activities support the development and strengthening of PES delivery mechanisms. Component 3 supports environmental service providers. The actual payments to environmental service providers are made and project operational costs tracked under component 4. Finally, component 5 undertakes project management (see the Project Brief - Annex 4 for details).

Component /Sub-component	Total		GEF		IBRD		Government		Beneficiaries	
	\$	%	\$	%	\$	%	\$	%	\$	%
	I. Developing Sustainable Financing Mechanisms	21.36	12	10.58	71	1.59	2	9.19	17	
a. Development of financing mechanisms from water users	1.95	1	0.49	3	0.95	1	0.51	1		
b. Development of financing mechanisms from biodiversity users	18.47	10	9.68	65	0.30	0.4	8.50	16		
- Local PES Program for Biodiversity	1.47	1	1.18	8	0.30	0.4				
- Development and capitalization of biodiversity endowment fund	17.00	9	8.50	57			8.50	16		
c. Development of financing mechanisms from carbon users	0.94	1	0.42	3	0.34	0.4	0.18	0.4		
II. Developing And Strengthening PES Delivery Mechanisms	3.70	2	1.20	8	1.63	2	0.88	2		
a. Strengthening of existing PES programs	2.48	1	0.75	5	1.13	1	0.61	1		
b. Support development of stand-alone local PES programs	1.10	1	0.33	2	0.50	1	0.27	1		
c. Matching Funds for Local Financing Mechanisms	0.13	0	0.13	1						
III. Supporting Environmental Services Providers	2.00	1	0.80	5	0.78	1	0.42	1		
a. Technical Assistance	1.00	1	0.40	3	0.39	0.5	0.21	0.5		
b. Organizational Assistance	1.00	1	0.40	3	0.39	0.5	0.21	0.5		
IV. Payment To Services Providers	148.60	82	1.58	11	73.29	91	40.99	77	32.73	
V. Project And Program Management	0.97	1	0.46	3	0.34	0.4	0.18	0.4		
Contingencies/unallocated	5.16	3	0.39	3	3.11	4	1.67	4	0.00	
	181.79		15.00		80.73		53.33		32.73	

Component 1: Developing Sustainable Financing Mechanisms (\$21.36 million, of which \$10.58 million from GEF)

8. The main objective of this component is to develop new, sustainable financing sources based on payments from service users, which could then be channeled either through the PSAH or through stand-alone local PES mechanisms, as appropriate. To achieve this objective, this component will help develop financial mechanisms based on the main types of environmental services: water quality and regulation, biodiversity conservation, and carbon sequestration. These financial mechanisms would be piloted in about eight promising sites identified by CONAFOR

(see Project Brief - Annex 17). Some sites might focus on a single financing mechanism while others include multiple financing mechanisms depending on the services being generated and the interests of users.

9. Key outputs from this component include (a) pilot financing mechanisms with local water services in at least seven sites, including some mechanisms that channel payments through the PSAH and others that channel payments through stand-alone local PES programs; (b) pilot financing mechanisms for local biodiversity users (primarily the tourism industry) in at least four sites; (c) development and initial capitalization of an endowment trust fund for biodiversity conservation to ensure the availability of long-term funding for cases where water-based payments would be insufficient to ensure conservation of biodiversity; (d) pilot financing mechanisms for carbon buyers in at least two sites; and (e) replication strategies to expand the use of these mechanisms beyond the pilot sites.

10. Key inputs for the success of this component include (i) providing the necessary resources for CONAFOR to implement the activities; (ii) providing adequate resources to design and implement the operational manual; and (iii) providing resources to design and capitalize the biodiversity endowment fund.

Component 2: Developing and Strengthening PES Delivery Mechanisms (\$3.70 million, of which \$1.20 million from GEF)

11. The objectives of this component are to strengthen the existing PSAH and CABSAs delivery mechanisms and to support the development of new, stand-alone delivery mechanisms for local PES markets. Having financing is not sufficient; mechanisms are needed to act as intermediaries between service users and service providers. These mechanisms must undertake functions such as determining how best to generate the services that users are paying for, identifying critical areas and land use practices to be targeted, negotiating with and contracting service providers, monitoring compliance, making payments, and monitoring impacts. CONAFOR has already created the PSAH (and on a smaller scale CABSAs) to undertake this role. However, both PSAH and CABSAs are young mechanisms that require considerable strengthening and improvement to increase their efficiency and their capacity to handle the greater and more complex demand generated through component 1 (see Annex 6 on institutional arrangements).

12. Key outputs from this component include (i) stronger capacity in CONAFOR and other national institutions, market intermediaries, community associations, and NGOs to undertake the functions necessary to implement PES programs, (ii) greater efficiency and effectiveness of the PES programs of PSAH and CABSAs, including revised rules and location-specific operational manuals to better target programs and differentiate between specific local situations, (iii) improved compliance and impact monitoring to increase the credibility and sustainability of PES programs, (iv) better promotion to foster broader support and participation in the programs, (v) development of stand-alone PES programs closely attuned to local conditions and separate from existing delivery mechanisms, (vi) a matching fund system to help local financing mechanisms get started and transition to self-sufficiency.

13. Key inputs for the success of this component include (i) financial resources and technical assistance to help existing PES mechanisms carry out the activities and capacity building

envisioned, (ii) equipment, training, resources, and technical assistance to improve compliance and impact monitoring, (iii) resources, TA, training, and study trips to help local stakeholders develop their own customized stand-alone PES mechanisms, (iv) resources to design rules and arrangements for a program of matching funds.

Component 3: Supporting Environmental Service Providers (\$2.00 million, of which \$0.80 million from GEF)

14. This component would focus on removing obstacles that may prevent communities from participating in either national PES programs or local PES mechanisms. It will especially focus on problems faced by poor communities.

15. Key outputs from this component include (i) identification and resolution of technical issues that constrain potential environmental service producers from participating in PES programs, (ii) greater capacity of service providers to fulfill contract commitments, (iii) more equitable distribution of the costs and benefits of participation in the program, and (iv) greater transparency in decisionmaking and greater participation of vulnerable and marginalized groups.

16. Key inputs include (i) consultancies to identify key technical issues and constraints to participation and to identify the organizations most capable of providing appropriate technical assistance, (ii) resources to contract the appropriate technical assistance, and (iii) funding to train and support local community technicians to work with communities in developing customized capacity building strategies and act as liaisons between communities and the project.

Component 4: Payment to Service Providers (\$148.60 million, of which \$1.58 million from GEF)

17. The objective of this component is to finance and make actual payments to environmental service providers and ensure that they are being compensated properly. This component will channel payments from the financing mechanisms developed in component 1, through the delivery mechanisms developed and strengthened under component 2, and finally to the service providers supported through component 3. While the bulk of project financing is allocated to this component, most of the activities to actually arrange, structure, and monitor this flow of financing are carried out under other project components.

18. The key output of this component is the financing of payments to environmental service providers from financing sources via the FFM or stand-alone delivery mechanisms. Key inputs include the resources generated by the full range of PES financing mechanisms and funding sources already in existence or developed under component 1, including:

- Share of water tariffs from the Ley Federal de Derechos (LFD) that are earmarked for PES.
- New financial resources from water users generated by mechanisms developed under component 1A.
- Tourism industry fees and contributions developed under component 1B.
- GEF and Biodiversity Conservation Endowment Fund resources.
- Carbon sales from programs supported under component 1C.

- World Bank resources to finance pilot PES programs and the matching fund.

Component 5: Project and Program Management (\$0.97 million, of which \$0.46 million from GEF)

19. This component focuses on project management mechanisms including planning and monitoring and evaluation (M&E). It would help new and existing entities and mechanisms in the national government conduct project coordination and supervision and strengthen the effectiveness and quality of project operations.

20. Key outputs include (i) establishment of a PCU within CONAFOR to manage the project, (ii) overall financial management and control of financial flows, (iii) project planning, and (iv) project and program monitoring and evaluation.

21. Key inputs include (i) salaries for staff of the PCU, (ii) office equipment, vehicles, and hydrological and biodiversity monitoring equipment, and (iii) resources to create and maintain performance monitoring and evaluation systems and modules.

b) Key indicators, assumptions, and risks (from Results Framework)

22. Key performance indicators related to the project development and global environment objectives are:

- At least 100,000 hectares under environmental service contracts that contribute to increasing hydrological services, biodiversity conservation, and carbon sequestration financed wholly or partially from new financing sources established under the project;
- Stand-alone local PES mechanisms designed for at least two pilot sites for contracting (buying and generating) environmental services in priority areas, including functioning M&E systems by EOP;
- 500,000 hectares under environmental service contracts that contribute to increasing hydrological services financed from existing funding sources;
- At least 15 proposals for carbon sequestration projects submitted to potential buyers;
- Institutional arrangements for facilitating PES mechanisms, management, and learning established, properly staffed, and resourced to continue beyond the EOP to replicate and scale up programs based on PES markets;
- State of the art techniques and procedures in use at CONAFOR and INE to monitor data on the implementation and impacts of both the national PES programs and local pilot PES mechanisms (i.e., vegetation cover, land use practices, ecosystems and habitats, indicator species of conservation interest, water discharge, sediment production and transport, biochemical oxygen demand, and total suspended solids.);
- Information from data monitoring used by CONAFOR and INE to evaluate and draw conclusions on (i) the links between land use changes and environmental services, (ii) buyers' responses, (iii) community acceptance of the PES mechanism, and (iv) sustainability of the mechanism measured by the ratio of payments from local buyers of environmental services and CONAFOR's operational costs;

- 200,000 hectares of forests and other natural ecosystems of global biodiversity significance placed under effective conservation (protection and sustainable management) by landowners before EOP in the buffer zones of protected areas and the corridors that connect them, including the Mexican portion of the Mesoamerican Biological Corridor;
- XX number of PES contracts to conserve forests or other natural ecosystems by EOP.
- Effective biodiversity conservation in the project sites measured by vegetation cover and indicator species of conservation interest; and
- Improved water services in pilot watersheds measured by indicators appropriate to local uses, such as seasonal mean and peak flows, reduction of sediment production and transport, biochemical oxygen demand, and total suspended solids.

23. Key risks and mitigations measures are:

<i>Risk to PDO/GEO</i>	<i>Rating</i>	<i>Risk mitigation measures</i>
Political pressure to shape the PES program to achieve non-environmental goals	L/M	This has already been observed to some degree in the current PSAH program. The move to a more targeted system based on objective targeting criteria will reduce this risk. This risk would not affect payments made with financing by local service users and GEF, as these payments would be made under rules agreed to by the users.
Unwillingness to pay for services by service users	M	A variety of experiences in Mexico and in the region show that there can be willingness to pay. The project will provide technical information to demonstrate likely benefits and establish a strong monitoring framework. The project will also provide short-term incentives for the creation of local financing mechanisms through the matching fund.
Lack of capacity in national and local institutions to support the long-term development of environmental service markets	L	Mexico has several strong national institutions that have already built up experience in PES by examining other countries and, since 2003, operating the PSAH. The project will support further capacity building in both national and local institutions.

<i>Risk to component results</i>	<i>Rating</i>	<i>Risk mitigation measures</i>
Low participation rates of land users	L	Experience to date with the PSAH shows a high willingness to participate, with applications far exceeding available funds. In areas with higher opportunity costs, the project will support the provision of higher payments. The project also includes a component to provide direct support to poor communities that might encounter difficulties in participating.
Difficulty in identifying the land uses that generate the desired environmental services	M	Mexico has already undertaken considerable efforts to compile and review available data. The project will support targeted technical studies at pilot sites to fill gaps in the data, and a strong impact monitoring system to verify that services are being generated or indicate what changes may be needed.

Willingness to pay by service users is insufficient to offer payments that induce land user participation

L If willingness to pay is too low, then PES will not proceed at that site. PES discriminates between things worth doing and those not worth doing.

Political opposition to differentiated payments by areas that would receive lower relative payments

M Differentiated payments to be introduced gradually, initially in conjunction with new financing mechanisms that provide objective reasons for the differentiation.

Overall risk rating

M

2. COUNTRY OWNERSHIP

a) COUNTRY ELIGIBILITY

24. Mexico ratified the Convention on Biological Diversity on March 11, 1993. It is also a signatory to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and the Cartagena Protocol on Biosafety. The project's objectives are fully consistent with guidance from the Conference of the Parties (COP) of the Biodiversity Convention regarding conservation and sustainable use of biological diversity. The project is consistent with the guidelines and decisions of a number of CBD Conference of the Parties, in particular, with the Addis Ababa Principles and Guidelines number 12, which was adopted by COP VII Decision 12 under Article 10. The project contributes to the Article by promoting economic incentives to generate additional benefits to indigenous and local communities and stakeholders who are involved in the management of any biodiversity. Furthermore, the project also contributes to Decision 14 (Biological Diversity and Tourism) and Decision 16 by creating appropriate mechanisms to capture the economic benefits of ecological services. In addition, the project is also consistent with COP VI Decision 15 (Incentive measures).

25. GEF support is warranted because the project would help (i) conserve globally significant biodiversity, including critically endangered endemic species, (ii) enhance the Mexico sections of the MBC, (iii) pilot PES as a sustainable, long-term conservation instrument that could be scaled up and replicated in Mexico and serve as a model for other countries, (iv) research links between land use change and environmental services; and (v) increase carbon sequestration and knowledge about biocarbon sinks. Without the GEF increment, environmental services payments might not provide sufficient incentive to adopt land uses that would yield global benefits in addition to local and national benefits.

b) COUNTRY DRIVENNESS

26. The Government of Mexico (GOM) has taken a number of legislative, institutional, and budgetary actions to address the daunting challenge of environmental issues in the country. The federal government has relatively recent laws governing water resources (December 1992, extensively modified in April 2004), forests (February 2003), and sustainable rural development (December 2001), which by definition includes "ensuring the permanent conservation of natural resources, biodiversity, and environmental services." The GOM also has an environmental strategy that is defined in its National Biodiversity Strategy published in 2000 (as part of its obligations under the CDB) and in a set of integrated five-year programs issued in 2001 for National Development (PND), Environment and Natural Resources (PNMA), Water (PNH), and Forests (PNF). The biodiversity strategy has four main lines of action: (a) protection and conservation, (b) valuation, (c) knowledge and information management, and (d) diversification and use. The strategy calls for legal, administrative, and political mechanisms to be established whereby the beneficiaries of environmental services help finance environmental and biodiversity conservation and proposes that economic analysis be conducted to value environmental services related to soil fertility and regulation of hydrological cycles.

27. The GOM created the National System of Protected Natural Areas (SINAP) in 1986 to provide protection to some of its rich habitats and biological diversity. With the support from

GEF and the World Bank, an endowment fund was created to capitalize financial resources to provide long-term financing for protecting the SINAP. Furthermore, the Mexican government has pledged to be committed to a “zero” deforestation target. In addition, the government has been piloting economic incentives mechanism for changing landholder behaviors to promote conservation measures. The introduction of fiscal instrument (e.g., water fee) and PSAH program are examples of the GOM’s serious commitment in conservation and sustainable use of its natural resources.

3. PROGRAM AND POLICY CONFORMITY

a) FIT TO GEF OPERATIONAL PROGRAM AND STRATEGIC PRIORITY

28. The proposed project supports the GEF Biodiversity Focal Area by protecting natural habitats and biological diversity through forest conservation, reversion of marginal agricultural areas to forest, and promotion of sustainable practices in agriculture. It supports Operational Programs 3 (Forest Ecosystems) and 4 (Mountain Ecosystems) by promoting conservation of biodiversity in key forest and mountain ecosystems. Within the Biodiversity Focal Area, the project particularly fits with two Strategic Priorities: Catalyzing Sustainability of Protected Areas (SP1) and Mainstreaming Biodiversity in Production Landscapes and Sectors (SP2).

29. Under SP1, the project would help ensure sustainability of the national protected areas system by providing a mechanism for long-term financing of biodiversity conservation in the buffer zones of protected areas and the corridors that connect them, including the Mexican portion of the Mesoamerican Biological Corridor.

30. Under SP2, the project will focus on two types of activities: (i) facilitating the mainstreaming of biodiversity within productive landscapes, and (ii) developing market incentive measures. Facilitating the mainstreaming of biodiversity within productive landscapes. Through this type of activity the GEF seeks to support development of the systemic and institutional capacities of government agencies and other stakeholders that would help secure biodiversity conservation. This could be achieved through enabling legislation, removing barriers to conservation, reforming or creating policies, institutional structures, and management procedures, generating relevant knowledge, and building partnerships between agencies, local communities, and the private sector. Activities of this type under Component 2 of the project include strengthening the capacity of national institutions such as CONAFOR, community associations, NGOs, and academic institutions to support development of PES markets in Mexico. Component 1 activities will help create an enabling environment for development of a PES market in Mexico and generate financial resources for the PES program.

31. Developing market incentive measures. Through this type of activity in SP2, the GEF seeks to support innovative market incentive structures (such as demand and supply side interventions, certification of suppliers, purchasing agreements, and codes of conduct) that would catalyze market forces. In doing so GEF seeks to develop partnerships with private sector stakeholders, small- and medium-size enterprises, and others to catalyze the development of innovative processes and activities that improve market efficiency and the ability to provide biodiversity and productive system gains. Activities of this type under Component 1 of the project will support the development of PES markets whereby land users will receive economic incentives for adopting and/or maintaining land use practices that generate valuable ecosystem services.

The markets will be piloted in eight priority areas that provide environmental benefits at the local, national, and global levels. These mechanisms will support land use practices such as forest conservation and management, reforestation, and sustainable agroforestry systems that improve water quality, increase base flows during the dry season, help regulate groundwater and surface flows, and maintain or enhance biodiversity both on-site and by protecting critical ecosystems.

b) SUSTAINABILITY (INCLUDING FINANCIAL SUSTAINABILITY)

32. Ensuring long-term sustainability of the PES program is a major objective of the project. Current funding is only guaranteed for five years at a time, and its future is entirely dependent on continued government support of the program. The project will pilot the development of new financing mechanisms based on demand from water users, the local tourism industry, and carbon buyers. Once established, these mechanisms have the potential for being highly sustainable, as they depend on the mutual self-interest of service users and service providers. For this to occur, it is important that the program actually generate the services desired by the service users. Thus the project devotes considerable attention to both ex ante technical studies (to ensure that payments are carefully targeted to generate the desired services) and ex post monitoring (to demonstrate that services are being generated, and make adjustments if they are not). Sustainability also requires credible and effective institutions acting as intermediaries between service users and providers, and the project supports considerable capacity building to ensure this.

33. Conserving biodiversity benefits through PES poses particular challenges. The project addresses these in part by piloting the development of financing mechanisms based on demand from the local nature-based tourism industry. It also supports the creation and capitalization of an endowment trust fund that will provide sustainable long-term financing to PES targeted at biodiversity conservation in the buffer zones of protected areas and the corridors that connect them, including the Mexican portion of the Mesoamerican Biological Corridor, thus helping to ensure the sustainability of the national protected areas system. The financing for biodiversity conservation will be in areas where payments for local water or tourism services or carbon sequestration services are insufficient. Some of the project interventions, in particular component 2 and 3 will strengthening the existing institutions and program, and build landholder capacity, which will ensure institutional sustainability. Component 1 which focuses on developing financial mechanisms will ensure financial sustainability.

c) REPLICABILITY

34. The pilot efforts to develop new financing mechanisms at pilot sites will lead to a replication strategy being developed for the development of additional such mechanisms throughout the country. The experience accumulated under the project should allow such replication to occur rapidly and on a large scale, by identifying conditions conducive to their development and potential pitfalls. It will also lead to the development of an array of standardized instruments which could easily be used in new settings with appropriate adaptations to local conditions.

35. Mexico's PSAH is only the second effort in any developing country to develop a nationwide PES program (the other being Costa Rica's PSA program). The lessons learned here, in a context

much more complex than Costa Rica, will also provide valuable lessons for the many other countries contemplating this approach. At the same time, the parallel effort to stimulate the development of stand-alone local PES mechanisms will also provide valuable lessons to countries opting for a more decentralized approach. Although a wide variety of such stand-alone local PES mechanisms has emerged spontaneously throughout the region, this is one of the first efforts to attempt to systematically encourage and support their development (the other being the recently approved El Salvador Environmental Services Project). The proposed project includes a strong replication activity. A replication strategy will be developed along with evaluation of the project and drawing of lessons at the mid-point and end of the project, which will be widely disseminated within Mexico, in the region, and globally through workshops, seminars, trainings, publications, and websites.

d) STAKEHOLDER INVOLVEMENT

36. Consultations with stakeholders and analysis of issues and risks have been carried out to help select potential sites for local PES programs, including a preliminary social assessment of five of the sites considered promising for project implementation. A full social assessment is underway and will be completed prior to project appraisal.

37. A participatory social consultation included (i) interviews with 74 *ejido* and indigenous community leaders, NGO workers, community/*ejido* technical field workers, and local managers and staff of protected areas and CONAFOR, and (ii) 20 participatory workshops with 278 participants, including three workshops specifically for women (66 indigenous, 10 nonindigenous). These consultations helped craft a project design that emphasizes strong indigenous community and *ejido* participation. Participants in the consultations made clear that they value knowledge and capacity building and that they demand regular face-to-face communication and outreach, with clear rules, on a long-term basis, with stable technical personnel who are directly accountable to them. The project design has incorporated these elements.

38. Key stakeholders and participating government agencies will receive training to facilitate coordination, increase understanding of the PES system, and help them assume their roles in the system. The PCU's functions will include processing environmental service contracts with private landowners, signing environmental services purchase agreements with the private and public sector, monitoring compliance, and preparing reports. NGOs will operate as intermediaries serving as environmental service contract promoters, providing technical assistance for Component 3, and compliance monitoring.

e) MONITORING AND EVALUATION

39. A key objective of the project is learning. PES programs are by nature country and site specific. Therefore about two percent of the project budget is dedicated to monitoring and evaluation. Monitoring and evaluation has been mainstreamed into almost all project components and will be conducted at three levels: (i) contract compliance,; (ii) impact monitoring,; and (iii) project implementation. Monitoring and evaluation costs by subcomponent are as follows:

Monitoring and Evaluation Costs (million US\$)

Component	Cost
1A. Development of financing mechanisms from water users	0.38
1B. Development of financing mechanisms from biodiversity users	0.30
1C. Development of financing mechanisms from carbon users	0.40
2A. Strengthening of existing PES programs	0.44
2B. Support development of stand-alone local PES programs	0.08
3B. Organizational Assistance	0.51
5D. Project and Program Monitoring and Evaluation	0.78
Total	2.89

40. During project implementation special quarterly reports will be prepared on the lessons learned during the previous quarter, semester, and year, and on plans for incorporating those lessons into future activities. Learning workshops are planned semiannually to coincide with Bank supervision missions. It is critical to understand for each site the causal links between specific land use changes and environmental services and the amount of change needed to produce specific quantities of those services. A critical weakness of many PES programs is that these links are poorly documented. For that reason, design of an intensive monitoring program for this project is a condition of effectiveness. In addition, site-specific indicators will be defined in each area as part of the environmental service contracts themselves. While causal linkages are site specific, the results and learning from the eight initial pilot sites will provide valuable guidance and insights for replication within Mexico and for PES programs in other countries.

41. By project effectiveness an M&E system and methodology will be put in place to track project implementation, compliance of land users with services contracts, and progress in attaining results. The system will have six modules: (i) Management Information System to track results and financial indicators and provide feedback for decision making; (ii) environmental services contract compliance; (iii) annual beneficiary assessments to report target groups' perceptions; (iv) site-specific monitoring and global biodiversity and hydrology evaluation studies to quantify land use changes/impacts and environmental services produced, with baseline assessments for each site and each contract and both midterm and final project studies; (v) data collection to better understand causal links between land use changes and environmental services; and (vi) standard auditing and supervision missions at least twice a year to review the technical, fiduciary, and safeguards aspects.

42. The PCU will be responsible for overall project monitoring, including the activities of the project (PES, PSAH, CABSA). The PCU will aggregate M&E inputs for project-level decision making and reporting. The baseline, beneficiary assessments, and impact evaluation studies will be contracted out, and the PCU will be in charge of coordination and technical supervision of the studies. CONAFOR will provide overall project oversight and World Bank staff and consultants will conduct periodic supervision missions (see Annex B for details).

4. FINANCIAL MODALITY AND COST EFFECTIVENESS

43. The proposed GEF co-financed project is fully blended with a Bank/GOM investment operation. The overall project has an estimated total cost of US\$173.29 million, with the

Government, World Bank, and others (beneficiaries and endowment fund generated interest) contributing US\$158.29 million. The requested GEF co-financing is US\$15.00 million.

Co-financing Sources				
<i>Name of Co-financier (source)</i>	<i>Classification</i>	<i>Type</i>	<i>Amount (US\$)</i>	<i>Status</i>
GOM	Government	Budgetary and in kind	53,333,000	Financial commitment in Project Aide Memoires
IBRD	IA	Loan	80,725,000	Part of CAS
Beneficiaries	Beneficiaries	PES	32,734,000	
Sub-Total Co-financing			166,792,000	

5. INSTITUTIONAL COORDINATION AND SUPPORT

a) CORE COMMITMENTS AND LINKAGES

44. The environmental objectives of the Mexican government are to increase sustainable development as a shared responsibility; facilitate decentralization of environment management and increased public participation; promote payment for environmental services program; decrease loss of temperate and tropical forests; conserve biodiversity; and increase sustainable water resource management (2001-2006 Mexico Environment and Natural Resources Program).

45. The 2005-2008 Mexico CAS addresses four core issues: (a) the reduction of poverty, (b) environment management, (c) increased competitiveness, and (d) improved governance. It builds on the positive experience of the EnvSAL (DPL) in its review of existing programs and incentive structures, to address the implicit short-term tradeoffs between social protection and environmental protection.

46. The CAS recognizes that Mexico faces tremendous pressure on its natural environment; to the degree that failure to reverse some of the most damaging trends may not only act as a brake on continued economic growth, but even contribute directly to reduced social welfare and increasing poverty. The CAS addresses the need to consolidate the regulatory and legal framework for environment issues and support implementation of measures aimed at watershed recovery, reforestation, decontamination, clean production, management of ecosystems, and biodiversity conservation. The CAS notes that vulnerability to natural disasters is closely related to rural poverty and that low productivity and high population pressures have depleted natural resources in many rural areas, caused soil erosion and land degradation, led to loss of habitat, biodiversity, and natural forests, and exacerbated problems in water management and conservation. In response, the CAS supports development of markets for environmental services and strengthening of protected areas management.

47. The project is consistent with the Bank's 2002 rural and environment strategies for Latin America. The rural strategy aims to reduce poverty and promote growth within the context of sustainable natural resources management and calls for better integration of environmental issues into rural development to build consensus around possible "win-win" opportunities. The environment strategy promotes sustainable, integrated management of natural resources and ecosystems with a focus on highly degraded and disaster-prone areas. The project would support both strategies by developing PES markets that generate win-win opportunities for poverty alleviation, economic growth, and environmental protection.

48. The project also takes into account the Bank's 2002 Forest Strategy, which is built on (a) harnessing the potential of forests to reduce poverty, (b) integrating forests in sustainable economic development, and (c) protecting global forest values. The strategy notes that addressing these three aspects together is complex and multifaceted—not merely about growing trees but rather supporting a complex interaction of policies, institutions, and incentives. It focuses on economic policies and rural strategies that embrace both sustainable use and conservation of vital environmental services, seeking to build markets and financial instruments in support of private investments in sustainable natural resource management.

49. The project would also complement the SINAP II Protected Areas Project, a GEF co-financed project to strengthen protected areas management. The project's goal is to promote the conservation and sustainable use of biodiversity in Mexico through the consolidation of the National System of Protected Areas (SINAP). Specific objectives are to (i) conserve globally important biodiversity in selected areas of SINAP; (ii) Promote the economic, social and environmental sustainability of productive activities in selected protected areas; (iii) Promote social co-responsibility for conservation; and (iv) Promote the inclusion of biodiversity conservation and sustainable use criteria in development projects and other practices affecting selected Protected Areas. The proposed project would complement the SINAP II objective by improving habitats on private lands in buffer zones and corridors around and between protected areas, thereby improving the viability and biodiversity conservation value of the protected areas themselves. Developing PES markets will also foster and strengthen partnerships between local and national government, NGOs, community organizations, and the private sector and will help promote an integrated ecosystem approach to watershed management.

B) CONSULTATION, COORDINATION AND COLLABORATION BETWEEN IAS, AND IAS AND EXAS, IF APPROPRIATE.

50. Other implementing agencies, in particular UNDP, have implemented biodiversity projects in Mexico. The lessons from these experiences have been incorporated into the design of the project. The project design was enriched by the regular seminars on payments for environmental services from forests that have been organized by CONAFOR, INE, and the World Bank since July 2004. A total of 14 seminars (plus two field trips) were organized between July 2004 and August 2005 (the next seminar is planned for September 2005). The participants included representatives from government, NGOs (e.g., ProNatura, WWF, CI, and TNC), academic institutions, foundations (e.g., Ford Foundation), bilateral donors (e.g., USAID), and multilateral organizations (e.g., FAO). UNDP and UNEP have been invited to these seminars but have not yet been able to attend. The project team will continue coordinating with stakeholders including GEF Implementing Agencies and GEF Executing Agencies during further project preparation to strengthen the project design and share lessons learned.

C) PROJECT IMPLEMENTATION ARRANGEMENTS

51. The National Forestry Commission (CONAFOR) will execute the project and have responsibility for all technical and fiduciary aspects of the project, overall management and supervision of the grant/loan, and monitoring and evaluation. Direct implementation will be provided by a Project Coordination Unit (PCU), based in Guadalajara City (CONAFOR's HQ), which will be fully integrated within Production and Productivity General Coordination Department of CONAFOR. The Project will also have liaison units in each of the States/Regions where potential "Promising Areas" are identified.

52. The financial agent for the project will be the by Nacional Financiera (NAFIN), a federal development agency responsible for managing the administration of many different projects receiving both national and external financing. NAFIN would be responsible for the overall financial management of the Project, and would manage the project's Special Accounts. NAFIN

would also be responsible for all formal correspondence concerning the Project with the Bank, including prior review for consultant and other contracts, and matters pertaining to the Loan Agreement.

53. In September 2003, an Advisory Committee for the PSAH project was formed. The committee's function is to act as a consultative and advisory body for project design and implementation of the PES project. The committee usually meets monthly. It reviews advances in achievement of the preparation objectives, the preparation schedule, current relevant PSAH and other international experiences. The committee consists of 17 individuals from government and private institutions, NGOs and academic bodies. The NGOs PRONATURA, the Nature Conservancy, and the Mexican Civil Council for Sustainable Forestry (which operated the first Smart Wood/FSC Certification Service in Mexico), bring with them their broad-based knowledge accumulated through practical experience of developing projects on environmental issues in Mexico. Academic institutions are represented by two researchers from the National University (UNAM) and the National Council of Science (CONACYT-Centro GEO). The Ford Foundation is also a member of the Advisory Committee. Additionally, there are government representatives from the National Institute of Ecology, the National Forestry Commission, and the Ministry of Finance. Other relevant players, namely representatives of local PES schemes, will also be invited to join the Advisory Committee.

54. The highest decision making body of the project will be CONAFOR's Governing Body. It is made up of representatives from several different Federal Government Ministries: National Defense, Finance and Public Credit, Social Development, Environment and Natural Resources, Economy, Agriculture, Agrarian Reform, Tourism, and the National Water Commission. This body will approve the Annual Implementation Plans and Quarterly Project Reports.

55. The PCU will include a coordinator, two subcoordinators (one each for PSAH and CABSAs), an administrative assistant, an accountant, a procurement specialist and technical staff (natural resource management specialist, agricultural economist, and hydrologist). A summary of project management activities and It will also include 80 facilitators who will be based in the state and regional CONAFOR offices. The PCU will be responsible for and directly execute all project components. Other institutional actors in the project include NGOs (acting as PES intermediaries), community associations, and universities. There are currently approximately 156 accredited professional service providers listed on the CONAFOR register (PSTyP). In addition to these service providers, additional personnel and/or consultant services for technical assistance, subprojects and independent verification tasks will be recruited.

56. A project Operational Manual will include all rules and regulations for implementation of each project component and operation of the PCU (planning, monitoring, evaluation, institutional arrangements, environmental review, reporting, communication, human resources, risk, coordination, procurement, and financial management). A specific annex of the Manual will define the operations of PES. The Operational Manual and any changes to it will require no objection from the Bank.

ANNEX A: INCREMENTAL COST ANALYSIS

Introduction

1. Two of the most important environmental challenges facing Mexico are water scarcity and deforestation. Aquifer overexploitation, water quality degradation and high deforestation rates are seriously threatening critical ecosystems and globally significant biodiversity. One-third of all Mexico's bird species and nearly two-thirds of all Mexico's amphibian, reptile, and mammal species are at risk. Although many wild species are legally protected, 2,582 species and subspecies are at risk, of which 41 are already extinct in the wild, 1,215 are endangered or threatened with extinction, and 1,326 are subject to special protection. The causes of deforestation are multiple, however, the main driving force appears to be intentional land use changes by individual or collective land owners mainly to agriculture.

2. A significant portion of Mexico's surface area is under some sort of protection, but not all the areas with relevant biodiversity are covered. The National Commission on Natural Protected Areas lists 154 federally administered natural protected areas that cover almost 19 million hectares, but only a small percentage of this area is government property. The Commission has produced a map of Priority Areas for Conservation, which includes the National System of Natural Protected Areas (SINAP), plus the areas that should be incorporated under some kind of protection, including economic incentives and legal agreements with their proprietors.

3. Any initiative to protect forests must take into account the structure of incentives embedded in the land tenure arrangements. Mexico has a special land tenure structure with ownership granted to *ejidos*, which include more individual plots, and to *comunidades agrarias*, which are mainly common property. Because the majority of forests are under common property regimes, their land tenure rules have important implications for conservation programs. Furthermore, the owners of these forest areas are among the poorest in the country. They are faced with short-term survival decisions even though their long-term livelihood depends on the protection and sustainable use of these resources.

4. To help address the environmental issues, one of the tools that the Mexican government adopted was to provide economic incentives by creating the program of Payments for Hydrological Environmental Services (PSAH) in 2003. The PSAH program has expanded rapidly, enrolling over 300,000 hectares of forest into conservation by the end of 2004, and has built experience on PES implementation. Initial evaluations, however, show substantial room for improvement. Moreover, the funding and objectives of the current program are very limited.

5. The objective of proposed project is to improve the provision of environmental services that bring both national benefits (primarily water services) and global benefits (primarily increased biodiversity conservation) by strengthening and expanding the PSAH and CABSA (Program to Develop Environmental Services Markets for Carbon Capture and Biodiversity and to Establish and Improve Agroforestry Systems) programs and establishing market-based payments for environmental services (PES) approaches. The objective will be achieved through (i) developing new, sustainable financing mechanisms for environmental services, which could be channeled either through the existing PES programs or through new, stand-alone local PES mechanisms; (ii) strengthening and improving the efficiency of existing PES programs (PSAH

and CABSA); (iii) stimulating the development of stand-alone local PES programs; and (iv) assisting local communities in service provision.

Baseline Scenario

6. Mexico is a mega-biodiversity country, ranking second in the world in reptilian diversity, third in mammal diversity, and fifth in both amphibian and plant diversity. Its plant diversity exceeds that of the United States and Canada combined. Mexico also ranks eighth in fish diversity and fifteenth in bird diversity. With 1.3 percent of the world's land area, it hosts about 12 percent of known terrestrial biota with very a high incidence of endemism. Mexico contains the five main types of Latin American and Caribbean terrestrial ecosystems listed by WWF, nine of the 11 main types of habitats in the region and 51 of the 191 identified ecoregions. Fourteen of these 51 ecoregions (covering over 40 percent of national territory) have priority at the international level regarding their biodiversity and current conservation status. There are nine large natural vegetation types in Mexico, classified according to their ecological characteristics.

7. Under the baseline scenario there are very few activities that would lead to sustainable payment for environmental services. Currently efforts are limited to disparate activities aimed at maximizing the returns in terms of water services. In the absence of this project, there would be little incentive for these efforts to orient their objectives towards biodiversity conservation and even less prospect of widespread replication of schemes to encourage payment for environmental services.

8. The consequence of this is that in the absence of this project, the baseline scenario would see very little increase in payment for environmental services and the global benefits in terms of the potential to reduce current threats to globally significant biodiversity would not be realized.

9. Total expenditures under the baseline scenario during the lifetime of the project are therefore **US\$235.956 million**.

10. The following sections give further detail on the baseline scenario for each component and what global environmental benefits they will provide. Following each explanation is a detailed breakdown of economic costs of current initiatives.

Component 1: Developing Sustainable Financing Mechanisms

11. The main objective of this component is to develop new, sustainable financing sources based on payments from service users, which could then be channeled either through the PSAH or through stand-alone local PES mechanisms, as appropriate. Under the baseline scenario, several disparate activities to create markets for water services do exist. However, these are mostly within the specific watersheds that have been targeted for their water and hydrological benefits and are not oriented towards optimizing protection of biological diversity. Indeed, in the baseline scenario, some of the most important areas of biodiversity will not be targeted, those areas that are targeted may not have any biodiversity of global significance, and even where targeted areas do contain globally significant biodiversity it may not be appropriately recognized.

12. Currently the government is spending US\$3.27 million a year to pay for environmental activities to promote water services through the PSAH. Of this amount US\$0.29 million is being

spent on activities relevant to this component. This equates to US\$1.18 million for the duration of the project. There is, however, currently no spending to pay for environmental activities that would specifically promote biodiversity services. In particular, there is no trust fund along the lines of that proposed by the alternative scenario.

13. Currently the government is spending approximately US\$0.55 million a year to pay for environmental activities to promote carbon sequestration services through the CABSA. Of this amount US\$0.12 million is being spent on activities relevant to this component. This equates to US\$0.49 million for the duration of the project.

14. The total baseline amount for this component is therefore approximately **US\$1.67 million**.

Component 2: Developing and Strengthening PES Delivery Mechanisms

15. The objectives of this component are to strengthen the existing PSAH and CABSA delivery mechanisms and support development of new, stand-alone delivery mechanisms for local PES markets. Under the baseline scenario, the PSAH (and on a smaller scale CABSA) will perform this role to a certain extent. However, both the PSAH and CABSA are young mechanisms that are directed towards providing hydrological and carbon sequestration services in limited areas. These will require considerable strengthening and improvement to increase their efficiency and their capacity to handle the increased and more complex demands that would be necessary to achieve the global environmental benefits offered by the alternative scenario.

16. The baseline scenario would therefore only achieve limited biodiversity benefits. Rather, it would concentrate on delivering water and, in the future some carbon sequestration services in a few disparate areas.

17. Subcomponent 2A will build on some baseline activities that are currently being undertaken by the PSAH and CABSA. The current cost per year for these activities is US\$0.32 million for the PSAH and US\$0.05 million for the CABSA. This equates to US\$1.48 million for the duration of the project.

18. Subcomponent 2B may use existing institutions and local service providers initially created for other purposes. It is estimated that the baseline cost of activities on which the project will build is around US\$0.14 million per year.

19. The total baseline amount for this component is therefore approximately **US\$1.62 million**.

Component 3: Supporting Environmental Service Providers

20. The only baseline funds going towards providing technical or organizational assistance come from the PSAH and the CABSA. Projected funding for this is US\$4.88 million from the PSAH and US\$0.81 million from the CABSA.

21. The total baseline amount for this component is therefore approximately **US\$5.69 million** for the lifetime of the project.

Component 4: Payment to Service Providers

22. In the absence of the GEF Alternative, it is estimated that the PSAH will continue to receive around US\$27.27 million a year from water tariffs, or US\$109.08 over the life of the project. The baseline revenue from carbon sales is estimated to be around US\$1.5 million per year, or US\$6.0 million over the life of the project.

23. Furthermore, the baseline includes the US\$73.292 million loan from the World Bank and US\$32.734 million contribution from the beneficiaries. Although some global environmental benefits will also be achieved by these contributions, they cannot be differentiated to provide the exact amount, and therefore has been included as the baseline.

24. In addition to this, under the baseline US\$1.09 million per year would be paid to perform compliance monitoring for the PSAH and US\$0.18 million per year for CABSA. This would total US\$5.09 million during the lifetime of the project.

25. The total baseline amount for this component is therefore **US\$226.206 million** over the lifetime of the project.

Component 5: Monitoring and Evaluation

26. The costs for the PCU and the functions they perform would be entirely incremental. No baseline costs for this exist.

27. Monitoring and evaluation will partly build on structures provided by the PSAH and CABSA. These would be US\$0.66 million from the PSAH and US\$0.11 million from the CABSA over the lifetime of the project.

28. The total baseline amount for this component is therefore approximately **US\$0.77 million** for the lifetime of the project.

GEF Alternative

29. The alternative scenario proposed here would leverage the current baseline activities and build on them to ensure that they contribute as much as possible to conserving Mexico's globally significant biodiversity and increasing carbon sequestration. The project would do this by (i) developing new, sustainable financing mechanisms for environmental services, which could be channeled either through the existing PES programs or through new, stand-alone local PES delivery mechanisms; (ii) strengthening and improving the efficiency of existing PES programs (PSAH and CABSA); (iii) stimulating the development of stand-alone local PES programs; and (iv) assisting local communities in service provision.

30. Sustainability would particularly be ensured through creation of an endowment fund to finance payments for activities that promote conservation of globally significant biodiversity. The project would also catalyze further replication throughout Mexico by reducing barriers to creation of new schemes. It would offer the potential for future investment both directly through the endowment fund and through new PES schemes and would serve as a benchmark for promoting such projects in other highly biodiverse countries. Both the immediate and the future

global biodiversity benefits of this project would be significant in terms of reducing species loss. In addition, the project would contribute to future carbon sequestration activities.

31. Total incremental costs of this proposed project—the difference between the baseline scenario and the GEF alternative—are therefore calculated to be **US\$31.146 million, of which \$15.00 million is being requested from the GEF.**

32. Details on the activities and global benefits that would be achieved by each component of the project and the costs associated with them are presented below.

Component 1: Developing Sustainable Financing Mechanisms

33. Component 1 of this project would produce pilot financing mechanisms for local water service users, local biodiversity users, and carbon buyers. It will also set up an endowment fund to cover continued payment for environmental activities that contribute to biodiversity conservation and will produce replication strategies to ensure that these financing mechanisms proliferate throughout Mexico.

34. The incremental costs of this component under the alternative scenario would be:

- US\$0.488 million from the GEF, US\$0.952 million from the IBRD loan, and US\$0.513 million from the Mexican government for developing financing mechanisms for water services.
- US\$1.178 million from the GEF and US\$0.295 million from the IBRD loan for developing financing mechanisms for promoting biodiversity conservation.
- US\$8.5 million from the GEF for developing and capitalizing the biodiversity endowment fund; and US\$8.5 million from the Mexican government to capitalize the biodiversity endowment fund.
- US\$0.416 million from the GEF, US\$0.338 million from the IBRD loan, and US\$0.182 million from the Mexican government for developing financing mechanisms to promote carbon sequestration.

35. The total incremental cost of this component is therefore **US\$21.362 million.**

Component 2: Developing and Strengthening PES Delivery Mechanisms

36. Component 2 of this project would strengthen the delivery mechanisms already being provided under the PSAH and the CBSA and also strengthen the capacity of CONAFOR, other national institutions, market intermediaries, community associations, and NGOs to implement stand-alone PES programs.

37. The incremental costs of this component under the alternative scenario would be:

- US\$0.745 million from the GEF, US\$1.13 million from the IBRD loan, and US\$0.609 million from the Mexican government for strengthening existing PES programs.
 - US\$0.329 million from the GEF, US\$0.498 million from the IBRD loan, and US\$0.268 million from the Mexican government for supporting stand-alone local PES programs.
 - US\$0.125 million from the GEF to provide matching funds to promote local financing mechanisms.
38. The total incremental cost of this component is therefore **US\$3.704 million.**

Component 3: Supporting Environmental Service Providers

39. The incremental costs of this component under the alternative scenario would be:
- US\$0.4 million from the GEF, US\$0.39 million from the IBRD loan, and US\$0.21 million from the Mexican government for providing technical assistance.
 - US\$0.4 million from the GEF, US\$0.39 million from the IBRD loan, and US\$0.21 million from the Mexican government for providing organizational assistance.
40. The total incremental cost of this component is therefore **US\$2.0 million.**

Component 4: Payment to Service Providers

41. The incremental costs of providing payments to service providers under the alternative scenario would be:
- US\$1.578 million from the GEF and US\$1.53 million from the government funds for payments to service providers. Although some global environmental benefits will also be achieved by the World Bank, GOM, and beneficiary contributions, they cannot be differentiated to provide the exact amount, and therefore have been included in the baseline.
42. The total incremental cost of this component is therefore **US\$3.108 million.**

Component 5: Monitoring and Evaluation

43. The incremental costs of project and program management under the alternative scenario would be:
- US\$0.456 million from the GEF, US 0.335 million from the IBRD loan, and US\$0.181 million from the Mexican government.
44. The total incremental cost of this component is therefore **US\$0.972 million.**
45. The matrix below summarizes the baseline and incremental expenditures during the project period.

	Cost Category	US\$ Million	Domestic Benefit	Global Benefit
Component I				
	Baseline	US\$1.67 million	Provision of water services	Some services of carbon sequestration. Very minor accidental conservation of globally significant biodiversity
	With GEF Alternative	US\$23.032million	Enhanced provision of water services	The global environmental consequences of this would be to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems within Mexico and to encourage and assist further conservation globally. In addition to this, the project would assist global carbon sequestration
	Incremental	US\$21.362million		
Component 2				
	Baseline	US\$1.62 million	Provision of water services	Some services of carbon sequestration. Very minor accidental conservation of globally significant biodiversity
	With GEF Alternative	US\$5.324 million	Enhanced provision of water services	The global environmental consequences of this would be to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems within Mexico and to encourage and assist further conservation globally. In addition to this, the project would assist global carbon sequestration
	Incremental	US\$ 3.704 million		
Component 3				
	Baseline	US\$5.69 million	Provision of water services	Some services of carbon sequestration. Very minor accidental conservation of globally significant biodiversity
	With GEF Alternative	US\$7.69 million	Enhanced provision of water services	The global environmental consequences of this would be to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems within Mexico and to encourage and assist further conservation globally. In addition to this, the project would assist global carbon sequestration
	Incremental	US\$2.00 million		
Component 4				
	Baseline	US\$226.206 million	Provision of water services	Some services of carbon sequestration. Very minor accidental conservation of globally significant biodiversity
	With GEF Alternative	US\$229.314 million	Enhanced provision of water services	The global environmental consequences of this would be to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems within Mexico and to

				encourage and assist further conservation globally. In addition to this, the project would assist global carbon sequestration
	<i>Incremental</i>	<i>US\$3.108 million</i>		
Component 5: Project Coordination				
	Baseline	US\$0.77 million	Provision of water services	Some services of carbon sequestration. Very minor accidental conservation of globally significant biodiversity
	With GEF	US\$1.742 million	Enhanced provision of water services	The global environmental consequences of this would be to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems within Mexico and to encourage and assist further conservation globally. In addition to this, the project would assist global carbon sequestration
	<i>Incremental</i>	<i>US\$0.971 6 million</i>		
Total Baseline: US\$235.956 million				
Total GEF Alternative: US\$267.102 million				
Total Incremental Costs: US\$31.146 million				

ANNEX B: Results Framework

PDO/Global Environment Objective	Outcome Indicators	Use of Outcome Information
<p>Project development objective is to improve the provision of environmental services that bring both national benefits (primarily water services) and global benefits (primarily increased biodiversity conservation) by strengthening and expanding the PSAH and CABSAs programs and supporting the establishment of local payments for environmental services (PES) mechanisms.</p> <p>The objective will be achieved through (i) strengthening the capacity of CONAFOR, INE, community associations, and NGOs to increase flexibility and improve efficiency of existing service provision to support long-term development of PSAH program in Mexico; (ii) establishing sustainable long-term financing mechanisms; (iii) legal, institutional, and financial arrangements to pilot market based mechanisms for payment for environmental services, (iii) document links between land use changes and water services improvements and biodiversity conservation, (iii) define good practices to replicate, scale up, and sustain PES market based programs.</p>	<p>At least 100,000 hectares under environmental service contracts that contribute to increase hydrological services, biodiversity conservation and carbon sequestration financed wholly or partially from new financing sources established under the project.</p>	<p>YR1-YR3: Low implementation levels may indicate ineffective institutional arrangements or poor selection of land uses promoted by the PES system.</p> <p>YR3-YR4 feed into strategy for replicating PES program.</p>
	<p>Stand-alone local PES mechanisms designed for at least two pilot sites for contracting (buying and generating) environmental services in priority areas, including functioning M&E systems by EOP</p> <p>500,000 ha under environmental service contracts that contribute to increase hydrological services financed from existing funding sources;</p>	<p>Develop and refine additions to the operational manual for PES on how to develop local funding mechanism. YR4 feed into strategy for replicating PES.</p> <p>YR1-YR4: Assess whether targeted milestones are being accomplished and make adjustments.</p>

	<p>At least 15 proposals for carbon sequestration projects are submitted to potential buyers.</p>	<p>YR1-YR4: Assess whether targeted milestones are being accomplished and make adjustments.</p>
	<p>Institutional arrangements for facilitating PES mechanisms management and learning established, properly staffed, and resourced to continue beyond the EOP to replicate and scale up PES market based program.</p>	<p>YR1-YR4: Assess whether institutional arrangements are sufficient to establish and maintain PES program. Make adjustments as needed.</p>
	<p>CONAFOR and INE use state of the art techniques and procedures to monitor data on implementation and impacts of both the national PES program and pilot local PES mechanisms (i.e., vegetation cover, land use practices, ecosystems and habitats, indicator species of conservation interest, water discharge, sediment production and transport, biochemical oxygen demand (BOD) and total suspended solids.)</p>	<p>YR1-YR4: Monitoring institutional capacity to design and implement methodologies to measure the impact of land use changes on environmental services. Adjust institutional strengthening activities if needed.</p>
	<p>CONAFOR and INE use the information to evaluate and draw conclusions on (i) the links between land use changes and environmental services, (ii) buyers' responses, (iii) community acceptance of the PES mechanism, and (iv) sustainability of the mechanism measured by the ratio of payments from local buyers of ES and CONAFOR's operational costs.</p>	<p>YR1-Y4 results of monitoring all indicators to feed into strategy for replicating PES program.</p>

PDO/Global Environment Objective	Outcome Indicators	Use of Outcome Information
<p>The global environment objective of the project is to enhance and protect biological diversity and preserve globally significant forest and mountain ecosystems.</p>	<p>200,000 hectares of forests and other natural ecosystems of global biodiversity significance under effective conservation (protection and sustainable management) by landowners before EOP in the buffer zones of protected areas and the corridors that connect them, including the Mexican portion of the Mesoamerican Biological Corridor.</p> <p>XX number of PES contracts to conserve forests or other natural ecosystems by EOP.</p> <p>Effective biodiversity conservation in the project sites measured by vegetation cover and indicator species of conservation interest.</p> <p>Improved water services in pilot watersheds measured by indicators appropriate to local uses, such as seasonal mean and peak flows, reduction of sediment production and transport, biochemical oxygen demand (BOD) and total suspended solids.</p>	<p>YR3-YR4: Monitoring of land use changes impact on biodiversity to assess effects.</p> <p>YR3-YR4: Monitoring of land use changes impact on biodiversity to assess effects.</p> <p>YR3-YR4: Monitoring of land use changes impact on biodiversity to assess effects.</p> <p>YR3-YR4: Monitoring of water quality impacts from land use changes. Used to adjust types of land use changes and volume of changed needed to generate increased water quality.</p>

Intermediate Results (One per Component)	Results Indicators	Use of Results Monitoring
<p>Component One: Developing Sustainable Financing Mechanisms: Financial Mechanisms for Water, Biodiversity and Carbon have been created</p>	<p>Component One : Financing mechanisms based on local demand are in place in at least six sites.</p>	<p>Component One: Develop and refine additions to the operational manual for PES on how to develop local funding mechanism. YR4 feed into strategy for replicating PES.</p>
Intermediate Results (One per Component)	Results Indicators	Use of Results Monitoring
	<p>An endowment fund for biodiversity conservation has been established to provide long term funding for biodiversity of global significance by project year 3;</p>	<p>YR1-YR2: Develop legal and institutional arrangement for the fund.</p>
	<p>A strategy has been developed for capitalizing the endowment fund by project year 3;</p>	<p>YR2-YR3: Lessons from other countries and implementation of the various PES programs in the country. A low level of capitalization amount may indicate ineffective strategy and/or its implementation.</p>
	<p>A biodiversity conservation funding window has been established within FFM by project year 2;</p>	<p>YR1-YR2: Develop legal and institutional arrangement for the fund.</p>
<p>Component Two: Developing and Strengthening PES Delivery mechanism: Existing PES Program have been strengthened, Local Stand-alone PES Programs have been established and a Matching Fund program will be operating</p>	<p>Component Two: Operating rules of PSAH and CABSA programs are enhanced by end of project year 1;</p>	<p>Component Two:</p>

program will be operating	Monitoring (compliance and impacts) systems of PSAH and CABSA programs are improved and under implementation by end of project year 1;	
	Substantial increase in the efficiency with which PSAH/CABSA funds are used: - at least 75% of area contracted in priority areas;	
Intermediate Results (One per Component)	Results Indicators	Use of Results Monitoring
	Appropriate contracting, monitoring and payment systems have been developed and under implementation in at least 2 watersheds to run the stand-alone PES Program by EOP;	
Component Three: Supporting Environmental Service Providers: Technical and Organizational Assistances	Component Three: Local facilitators with site specific knowledge have been recruited and trained to provide TAs;	Component Three:
	80% of service providers are satisfied with the timeliness and quality of TA;	
	Participation of <i>ejidos</i> in pilot sites increased by 50% over the national average;	
Component Four: Payment to Service Providers	Component Four: FFM will continue to receive at least US\$30 million a year;	Component Four:
	80% of service providers are satisfied with the PES program and payments received;	

<p>Component Five: Project and Program Management</p>	<p>Participation of <i>ejidos</i> in pilot sites increased by 50% over the national average;</p> <p>Component Five: A Project Coordination Unit (PCU) staffed, including regional facilitators, and functioning within CONAFOR at all times during the project with sufficient capacity to carry out all project activities.</p>	<p>Component Five:</p>
<p>Intermediate Results (One per Component)</p>	<p>Results Indicators</p>	<p>Use of Results Monitoring</p>
	<p>Annual performance evaluations of PCU staffed to be conducted.</p> <p>A project management information system to be installed and functioning during the life of the project.</p> <p>Quarterly physical and financial status reports prepared and submitted to the Bank.</p> <p>Semiannual documents on lessons learned and policy implications are prepared. To coincide with supervision missions.</p> <p>Planning process, as defined in the Operations Manual, to be followed which defines when and how Annual Implementation Plans (AIP), quarterly and monthly plans will be prepared based on Project Implementation Plan (PIP).</p> <p>Project communications strategy developed and implemented.</p>	

Arrangements for results monitoring

1. Monitoring and evaluation has been mainstreamed into almost all project components and will be conducted at three levels: (i) contract compliance, (ii) impact monitoring, and (iii) project implementation. Table A3.1 shows monitoring and evaluation costs by subcomponent.

Table A3.1: Monitoring and Evaluation Costs (million US\$)

Component	Cost
1A. Development of financing mechanisms from water users	0.38
1B. Development of financing mechanisms from biodiversity users	0.30
1C. Development of financing mechanisms from carbon users	0.40
2A. Strengthening of existing PES programs	0.44
2B. Support development of stand-alone local PES programs	0.08
3B. Organizational Assistance	0.51
5D. Project and Program Monitoring and Evaluation	0.78
Total	2.89

2. The project would be guided by semiannual learning reviews of project results to coincide with Bank supervision missions on which basis CONAFOR and the Bank would identify specific measures to: (i) address any areas of implementation weaknesses; and (ii) adapt project design to ensure objectives are met. These measures for improvement would be reflected in the CONAFOR quarterly learning reports and their proposal for the forthcoming year's Annual Implementation Plan including project budget. It is expected that CONAFOR and INE would involve third party, independent evaluators for environmental contract monitoring and to perform technical biodiversity, carbon sequestration, and water quality impact studies.

3. Institutional issues: Monitoring and evaluation of project outcomes/results (both intermediate and end of project) will be coordinated by the Project Coordination Unit (PCU) in CONAFOR. Trained staff from specialized agencies and NGOs will have the responsibility to collect and analyze field data, while INE, and the PCU will archive and distribute relevant and timely information to assist in effective decision making for project management.

4. The monitoring and evaluation process will function as a mechanism for assessing project impacts and as a day-to-day management tool. An M&E system will be developed to provide accountability and to strengthen the capacity of CONAFOR for planning and monitoring of overall project activities. The M&E system will also support the project supervision process by ensuring that baseline and follow-up data for the key performance indicators are collected and made available on an ongoing basis and at strategic times including project start-up (underway before project effectiveness), midterm review and project closing. A baseline study will be carried out at inception, and follow-up evaluations at both midterm and project closing. Site-specific baselines studies will be performed before work begins in the pilot areas and baseline studies will be phased in on the national PSAH and CABSA programs. Site-specific follow-up evaluations will be carried out to measure impacts of land use changes on anticipated environmental services. Specific project implementation monitoring data will be provided on agreed upon report formats, included in the operations manual, and will be required for the twice-yearly supervision missions. CONAFOR will develop the project monitoring system that

would record the planning, physical implementation, performance of local technical assistance, and development objective indicators from the project's Results Framework.

5. NAFIN will monitor financial and procurement management for the project as a whole. Financial information on inputs, outputs, budgeting, treasury, accounting, and audits would be monitored. The project will send to the Bank quarterly financial management and procurement reports. Monitoring and processing of procurement of services, goods, works, and sub-projects would be carried out by the PCU in coordination with NAFIN. The annual planning processes would be monitored with specific indicators on planning performance defined in the Results Framework. The physical implementation of the project would be monitored based on the specific outputs and monitoring indicators for the project components as defined in the Results Framework. Information from the monitoring system would be analyzed by project management and disseminated according to the project's communication strategy to appropriate stakeholders. The project would provide the Bank with progress reports every quarter and an update on legal covenants compliance every six months.

6. Data collection: The PCU will coordinate collection of component results indicators. Data for monitoring and evaluation of Component 1 will come from the geographic information and statistical reports from CONAFOR facilitators, NGOs acting as PES transaction intermediaries. These facilitators and NGOs will also monitor contract compliance from farmers in the project area watersheds and from the external annual audits.

7. Semiannual Evaluations. A key objective of the project is learning how to implement an effective PES market based program in Mexico. Semiannual learning workshops are planned to coincide with supervision missions to identify and discuss lessons learned during project implementation with project stakeholders and beneficiaries. The PCU will submit quarterly reports on lessons learned and plans for incorporating those lessons into future activities.

8. Midterm evaluation. The Bank's supervision team, together with a team of external reviewers and key stakeholders, will conduct a midterm evaluation of project execution. It will be conducted no later than three years after of the first disbursement. The external review will focus on (i) progress in achieving project outcomes, (ii) institutional arrangements for project implementation, (iii) operational manual[s] for payments for environmental services mechanisms, (iv) effectiveness and suitability of the monitoring system, and (v) review of both the project implementation plan and general project operation manual. In preparation for the MTR the PCU will prepare reports on the key elements of the PES system: (i) perceptions from key stakeholders; (ii) assessment of institutional arrangements and recommendations; (iii) scientific lessons from the links between land use and environmental services; and (iv) progress on biodiversity conservation.

9. Final Evaluation. A final evaluation will be conducted in the last semester of project execution. The key objectives of the final evaluation will be to (i) assess attainment of the expected project results, (ii) use the results to design a strategy for replication in future projects, and (iii) design a strategy for mainstreaming future PES market based programs.

Arrangements for Results Monitoring

{ The Results Monitoring Arrangement will be finalized at appraisal }

Outcome Indicators	Baseline	Target Values				Data Collection and Reporting		
		YR1	YR2	YR3	YR4	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
PES mechanisms designed for at least two sites for contracting (buying and generating) environmental services in priority areas;	None	---				Yearly project reports	MTR and Impact Evaluation Studies	Project Coordination Unit (PCU)
At least 100 hectares under environmental service contracts that provide environmental services in biodiversity conservation and/or water services.	None	---			---	Quarterly and Annual project implementation reports	Project management information system	CONAFOR/PCU
Institutional arrangements for facilitating PES mechanisms management and learning established, properly staffed and resourced to continue beyond the EOP to replicate and scale up PES market based program.	None					Quarterly and Annual project implementation reports	Project management information system	CONAFOR/PCU
CONAFOR and INE use state of the art techniques and procedures to monitor implementation and impacts of the pilot PES mechanisms: vegetation cover, land use practices, landform, ecosystems and habitats, in the dimensions						Annual project reports	Reports	CONAFOR/INE

and function, water discharge, sediment production and transport, biochemical oxygen demand, and total suspended solids.								
Effective biodiversity conservation in the project sites measured by vegetation cover and indicator species of conservation interest.	Baseline			MTR	EOP	Site specific evaluations	Specialized surveys	INE
200,000 ha of forests and other natural ecosystems of global biodiversity significance under effective conservation (protection and sustainable management) by landowners before by EOP.	Baseline	50%	80%	80%	100%	Site specific monitoring design	Continuous monitoring and Studies	INE
XX number of PES contracts to conserve forests or other natural ecosystems by EOP.	None	25%	50%	80%	100%	Site specific monitoring design	Continuous monitoring and Studies	INE
Results Indicators for Each Component								
Component One : Financial Mechanisms for Water, Biodiversity and Carbon have been created	Baseline	--	Financing mechanisms based on local demand are in place in at least one site.	Financing mechanisms based on local demand are in place in at least three sites.	Financing mechanisms based on local demand are in place in at least six sites.	Quarterly and Annual project implementation reports	Reports and Supervision missions	CONAFOR/INE
An endowment fund for	None	Legal and	Strategy developed	Fund established		Quarterly and	Repots and	CONAFOR/INE

has been established to provide long term funding for biodiversity of global significance by project year 3;		analysis				implementation reports	mission reports	
A biodiversity conservation funding window has been established within FFM by project year 2;	None	Legal and institutional arrangement	Funding window established			Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/FFM
Component Two : Developing and Strengthening PES Delivery mechanism	Baseline	Operating rules of PSAH and CABSA programs are enhanced				Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE
Improved monitoring system in place	Baseline	Monitoring (compliance and impacts) systems of PSAH and CABSA programs are improved and under implementation				Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE
Substantial increase in the efficiency with which PSAH/CABSA funds are used: - at least 75% of area contracted in priority areas;	Baseline	Lessons learned drawn;	Training provided;	Substantial increase in efficiency in at least 25% of the areas	Substantial increase in efficiency in at least 75% of the areas	Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE
Stand-alone PES Program under implementation in at least 2 watersheds.	None	Appropriate contracting, monitoring and	Appropriate contracting, monitoring and	Stand-alone PES Program developed in at	Stand-alone PES Program under	Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE

		systems have been designed	systems have been implemented	watersheds.	in at least 2 watersheds.			
Component Three: Technical and Organizational Supporting Environmental Service Providers	Baseline	Local facilitators with site specific knowledge have been recruited and trained to provide TAs	Local facilitators provide TAs; Participation of <i>ejidos</i> in pilot sites increased by 15% over the national average	Local facilitators provide TAs; At least 50% of service providers are satisfied with the timeliness and quality of TA; Participation of <i>ejidos</i> in pilot sites increased by 30% over the national average	Local facilitators provide TAs; At least 80% of service providers are satisfied with the timeliness and quality of TA; Participation of <i>ejidos</i> in pilot sites increased by 50% over the national average	Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE
Component Four : Payment to Service Providers	FM will continue to receive at least US\$30 million a year; Baseline	FFM will continue to receive at least US\$30 million a year; Demand for participation in the PES Program is high.	FM will continue to receive at least US\$30 million a year; 15% of service providers are satisfied with payments received	FM will continue to receive at least US\$30 million a year; 50% of service providers are satisfied with payments received	FM will continue to receive at least US\$30 million a year; 80% of service providers are satisfied with payments received	Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE
Component Five : Project and Program Management	None	PCU established and staffed; Resources for PCU to carry out its activities budgeted;	PCU established and staffed; Resources for PCU to carry out its activities budgeted;	PCU established and staffed; Resources for PCU to carry out its activities budgeted;	PCU established and staffed; Resources for PCU to carry out its activities budgeted; Project	Quarterly and Annual project implementation reports	Repots and supervision mission reports	CONAFOR/INE

		communication strategy developed	communication strategy implemented	communication strategy implemented	strategy implemented			
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ANNEX C: RESPONSE TO PROJECT REVIEWS

a) Convention Secretariat comments and IA/ExA response

{No comments have been received that need to be responded at this time}

b) STAP expert review and IA/ExA response

STAP REVIEW FOR:

**MEXICO: ENVIRONMENTAL SERVICES OF THE FOREST
(World Bank-GEF)**

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Overall Appraisal

This is a well designed project aimed at Payments for Ecosystem Services (PES) in Mexico. The project will strengthen existing PES (water-related) and create new ones (biodiversity, carbon). The design builds upon lessons learned from similar initiatives in Mexico and in the rest of the continent. By having ecosystem users pay for benefits obtained from ecosystem maintenance, the project incorporates privates and especially local indigenous land owners into the conservation effort, a welcome initiative from the overall perspective of the CBD and the GEF.

The project will help protect globally significant biodiversity in Mexico and thus also help contribute to the maintenance of the Mesoamerican Biological corridor. Emphasis will be on forested areas with biodiversity of global significance. The proposed payment for conservation services by the tourist sector is very innovative. Biodiversity concerns will be mainstreamed into tourism, forestry, agriculture environment, and water sectors. There are a few queries that if solved during the remaining preparation time, will improve the project and make it a replicable model in other areas on high biodiversity.

World Bank Response:

Thank you. The project design includes a replication strategy and the lessons will be disseminated widely.

1. Scientific and Technical Soundness

The project is basically sound and well constructed. Perhaps the most important issue is the existence or non-existence of site-specific reliable evidence that ecosystem services (water supply and biodiversity) are in fact closely connected with the degree of conservation of their flora and fauna. It is known that water services are not always closely connected with the biodiversity in the ecosystems, and users of biodiversity (for example birdwatchers) may be interested only on in some taxa. If true that linkages between services used and ecosystem attributes are weak, it may lead to reluctance to pay for ecosystem maintenance. Good models, surveys and other empirical evidence relevant to each one of the sites would be needed.

The problem is that obtaining this evidence may take several years and without it, users may not be willing to pay and thus the whole sustainability may be jeopardized. The text is not sufficiently clear regarding how much of this evidence is available at this point.

Unfortunately, the problem may be augmented because so far there have been no specific consultations with ecosystem users at the various sites about their willingness to pay, and the reader is left with the impression of a weak link in the whole argument. Willingness to pay by the tourism sector is particularly intriguing. (Proponents make plausible arguments, however, for why providers would be willing to participate in the scheme).

Both of the issues just raised are included in the list of good practices listed in the project, but so far have not been included in the design.

World Bank Response:

We agree that there is much yet to be learned about the hydrological impacts of land use changes at different sites. For this reason, the project will support additional applied, site-specific technical studies to fill gaps in available knowledge of links between land use and water services and biodiversity (through Component 1A and 1B). However, enough is known about the hydrological impacts of land use changes at different sites to serve as a basis for action, as evidenced by the existing Mexican PES programs (PSAH and CABSA), which the project would strengthen and improve upon. The project also supports the establishment and operation of a robust impact monitoring system to verify that the desired services are in fact being generated, or allow mid-course corrections to be made.

There are already incipient PES proposals at several of the pilot sites, indicating a strong interest among at least some service users to pursue this approach. That there are service users actually making payments for conservation – in Mexico and elsewhere in the region – demonstrates that establishing such financing mechanisms is possible. There have been few efforts to extend the approach to the tourism industry to date, so there is much that will have to be learned in doing so, but many of the lessons learned in developing financing from water users is likely to be applicable.

2. Global Benefits

Mexico is a Megadiversity country, rich in ecosystem types, species and within-species diversity. The eight demonstration areas correspond to earlier identified sites of globally significant biodiversity. The project would help stop forest conversion and thus contribute to biodiversity conservation. It will also restore damaged ecosystems in otherwise high biodiversity areas.

The connection made between global/domestic benefits and incremental costs deserves special mention. The project aims at water services (local benefits), biodiversity and carbon services (global benefits). It is unclear from the project to what extent improving conditions for water services (domestic benefit) at any one site will actually serve protecting biodiversity. Effects may be marginal, particularly as water services are more related to plant cover and are not closely related to plant or faunal composition. The incremental costs analysis, however, does not seem to reflect this situation. The GEF seems to be asked to support some activities with mostly local benefits as well as those with clear global benefits. Clarifications may be needed.

World Bank Response:

This project would promote, through PES contracts, the conservation of existing natural forests, their restoration through reforestation with native species, or the improvement of agro-forestry systems so that they more closely resemble the original native forest in structure, species composition, and ecological function. Based on the scientific evidence available to date, these land use interventions are highly positive for both the conservation of Mexican biodiversity (since so many endemic Mexican animal and plant species depend upon natural forests for their survival) and for improving water flows--in terms of seasonal peak flows, groundwater recharge, water quality, reduced sedimentation and flood intensity, and (at least in the case of cloud forests) added flows through water harvesting from clouds. Under the project, some locally-based new PES systems might possibly focus on improving hydrological services in areas of lesser biodiversity priority (but not with GEF funds). Conversely, PES contracts in some areas (including natural grasslands and wetlands) might be driven by the desire to conserve biodiversity (such as for eco-tourism) rather than water supply concerns. The Cancun pilot site, for example, was selected almost entirely for its biodiversity conservation benefits. However, the project would not support any PES systems that would encourage land use changes harmful to biodiversity (or to environmental protection in general), as is explained in Annex 10. The project recognizes that the overlap between preserving hydrological services and preserving biodiversity, although considerable, is not 100%. This is illustrated by the impact indicators, for example, in which only a part of the total area to be enrolled under the project is expected to be "of global biodiversity significance." This is also recognized through the creation and capitalization of the Biodiversity Endowment Trust Fund, which will provide sustainable long-term payments in areas where financing from water users or the local tourism industry is either absent or insufficient to preserve biodiversity of global significance.

3. Innovativeness

There are several innovative aspects in the proposal.

- The most innovative aspect is the inclusion of the tourist sector as a biodiversity user, eventually paying to maintain them.
- The flexible approach allowing for small independent, larger arrangements covering several watersheds and one or more ecosystem services is also innovative.
- The trust fund to complement PES in biodiversity is also an innovative instrument.
- Connections between a GEF-supported project and support from the Clean Development Mechanism are also an innovative aspect.

4. GEF and Convention Fit

The project is consistent with CBD guidance and with GEF policies under SP2, OP3 and OP 4. The proposal is consistent with COP guidance referring to incentive measures, ecosystem services, tourism, and sustainable uses, particularly by indigenous communities.

The proposal is also consistent with GEF policies regarding conservation and sustainable uses of forested (OP3) and mountain ecosystems (OP4) and, by helping mainstream conservation into production sectors of the economy, with SP2.

5. Consultations and Participation

There have been social surveys and consultations but participation of the key actors may still be a weak point in this proposal. Proponents have consulted with government agencies, NGOs, academics, private institutions. But so far a key link in the whole argument, namely willingness to participate of users of services at the specific demonstrations sites has not been secured. This may be a critical area for the coming months of project preparation.

World Bank Response:

Additional consultation with stakeholders, including determination of the “willingness to pay” of environmental service users, will take place during project preparation and as part of Component 1. As noted, several of the pilot sites have incipient PES proposals (this was one of the selection criteria), indicating a strong interest among at least some service users to pursue this approach.

6. Capacity-Building

The project will strengthen capacities at CONAFOR, market intermediaries, community associations, and NGOs. It will create the enabling environment allowing for a very flexible PES system in the country. The project will help generate new legislation, remove barriers to conservation, change policies, and build partnerships. All these capacities will allow for replication within Mexico. In turn the approach chosen to build capacities could be later replicated in other countries.

7. Sustainability and Replicability

It is a big question at this point to what degree the whole effort will be sustainable. Proponents suggest that sustainability will be largely secured by the self interest of suppliers and users of ecosystem services, and the project will trigger the process by providing capacities and substantive resources (nearly \$ 150M) to start paying providers. However, the system of PES will be sustainable if this fund is replenished with contributions from beneficiaries of the services. At present we do not know to what extent private beneficiaries will want to pay for the services claimed. As mentioned, unless there is solid evidence for the linkages between ecosystems attributes and services, users may not be interested in PES. Unfortunately, so far there have been no specific consultations on this issue and scientific evidence for close linkages between ecosystem services and biodiversity is unclear from reading the document.

It would also help to see more on how CONAFOR will strengthen and later maintain its capacities to secure long-term sustainability of these efforts.

The project should be replicable both in approaches, types of services as well as specific mechanisms (such as the trust fund) within Mexico and elsewhere. The proposal has several important activities addressing replicability of its components.

World Bank Response:

The existing PSAH water fee is evidence of considerable willingness to pay for environmental services by water users. Project sustainability will be enhanced through the project's promotion of additional schemes where environmental service users in specific areas provide funding for

PES in their upstream watersheds. The planned biodiversity trust fund and linkages to carbon finance mechanisms will also enhance the project's long-term sustainability.

8. Miscellaneous

- The reviewer suggests that in drawing baselines for indicators, testing areas as well as nearby areas without project be used. These would serve as “controls”.

World Bank Response:

Agreed, since measuring significant changes in environmental services through improved land use at a given site will often take longer than the time available for project implementation.

c) GEF Secretariat' comments and The World Bank responses
GEFSEC Comments at the time of GEF Work Program Entry

GEFSEC Comments:

1. The project is submitted under BD SP2. However, besides biodiversity conservation, the project has to do with increasing hydrological services (IW) and carbon sequestration (CC). In addition, subcomponent 1.b) development and capitalization of a BD endowment fund, can not be considered under SP2 because demonstrating and implementing sustainable and innovative financial mechanism is identified as a priority under SP1, which focuses activities within Protected Areas. As explained above, the GEF can support endowment funds under SP1 but not under SP2; for that reason the project sites supported under this subcomponent should be Protected Areas.

World Bank response:

The project would help ensure the sustainability of the national protected areas system by providing sustainable long-term financing of biodiversity conservation in the buffer zones of protected areas and the corridors that connect them, including the Mexican portion of the Mesoamerican Biological Corridor. The GEF co-financing would provide support to land holders, *ejidos*, indigenous and private reserves in the buffer zones and corridors for the conservation and sustainable management of protected areas systems. The project also complements ongoing initiatives, including SINAP II, without duplicating the activities. As such, the project is also consistent with SP1 and the project documents have been updated accordingly. A set of criteria has been used in selecting the project sites (see Project Brief - Annex 17).

GEFSEC Comments:

2. Global significance of BD in the project sites, according with the selection criteria cited in annex 17, is not demonstrated in all the cases. Therefore selection criteria should be improved in order to achieve a 100% of overlap between preserving hydrological services and preserving biodiversity.

World Bank response:

Criteria are being clarified to improve overlapping.

GEFSEC Comments:

3. GEF contribution to component 5, project and program management, is high and not justified.

World Bank response:

Although the GEF contribution to component 5 appears large in proportion to the component's total costs, it is minimal in absolute terms. Most of the project's robust monitoring and evaluation system (including impact and compliance monitoring) is actually mainstreamed within other components and is financed mainly by government and Bank contributions. As a whole, the contribution from GEF is only about 35 percent of the total cost of the M&E system. The project documents have been updated accordingly.

GEFSEC Comments:

4. The replicability potential of the project is high, and a replication strategy would be developed along with evaluation of the project at the mid-point and end of the project.

World Bank response:

The provision of developing a replication strategy has been included in the project design with a significant budget. See Section 2.C (para 34) and the description of Component 1 in the Annex 4 of the Project Brief.

GEFSEC Comments:

5. Log-frame with clear results and outcome orientation, as well as indicators and monitoring processes to track them provided. There should be indicators to track financial streams, how these get directed back to conservation, and improved biodiversity on the ground. Indicators in the Results Framework should be adapted in line with the comments made above.

World Bank response:

Done. The project incorporates a strong emphasis on monitoring of compliance and impacts, an area to which many PES programs have not given sufficient weight. The results of the monitoring are expected to support the underlying argument for the PES approach, strengthen confidence and participation in existing and future programs, and help draw valuable lessons that will be incorporated in the replication strategy (see Annex on Results Framework).

GEFSEC Comments:

6. Indicative total cost of M&E has to be reflected in total project cost.

World Bank response:

Done. Please see 3.e of the Executive Summary.

GEFSEC Comments:

7. SP1 and SP2 Tracking Tools should be attached to the proposal. Please, provide them.

World Bank response:

SP1 has been attached. SP2 will be developed during project implementation.

GEFSEC Comments:

8. Interests from the Trust Fund are not considered cofinancing according with GEF definitions. Please correct.

World Bank response:

It has been corrected.