

**GLOBAL
ENVIRONMENT
FACILITY**

PAMOS

Mexico
Protected Areas Program

Project Document
March 1992



THE WORLD BANK

GEF Documentation

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Reports by the Chairman - identified by a blue band - are prepared by the Office of the GEF Administrator in collaboration with the three GEF implementing agencies for the biannual Participants' Meetings.

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CURRENCY EQUIVALENTS

Currency Unit	=	Peso (MEX\$)
US\$ 1.00	=	3040 Pesos (February 7, 1992)

FISCAL YEAR

January 1 - December 31

UNITS OF WEIGHTS AND MEASURES

<u>Metric</u>		<u>British/US Equivalent</u>
1 kilogram (kg)	=	2.20 pounds (lb)
1 metric ton (m ton)	=	2,205 pounds (lb)
1 liter	=	0.26 gallons (gal)
1 meter (m)	=	3.28 feet (ft)

ACRONYMS

BANOBRAS	National Development Bank for Public Works and Service (Banco Nacional de Obras y Servicios Publicos)
OGCERN	General Directorate of Ecological Conservation of Natural Resources [SEDUE/SE] (Direccion General de Conservacion Ecologica de los Recursos Naturales)
GEF	Global Environment Facility
GET	Global Environment Trust Fund
NGO	Non-governmental Organization
PCU	Project Coordination Unit
SEDUE	Secretariat of Urban Development and Ecology (Secretaria de Desarrollo Urbano y Ecologia)
SEDUE/SE	SEDUE's Sub-Secretariat for Ecology
SHCP	Secretariat of Finance and Public Credit (Secretaria de Hacienda y Credito Publico)
SINAP	National System of Protected Natural Areas (Sistema Nacional de Areas Naturales Protegidas)
TAC	Technical Advisory Council

MEXICO
ENVIRONMENTAL PROJECT
PROTECTED AREAS PROGRAM
GRANT AND PROJECT SUMMARY

Financial Agent: Banco Nacional de Obras y Servicios Publicos - BANOBRAS

Executing Agency: Secretariat for Urban Development and Ecology -- SEDUE

Amount: SDR 21.4 million (US\$30 million equivalent)

Terms: Grant

Financing Plan: (US\$ million)

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
United Mexican States	8.6	--	8.6
GET	28.5	1.5	30.0
TOTAL	37.1	1.5	38.6

Economic Rate of Return: Not Applicable

Staff Appraisal Report: Report No. 10005-ME; dated March 9, 1992

Map: IBRD - 23536

**MEMORANDUM AND RECOMMENDATION OF THE DIRECTOR
OF THE LAC COUNTRY DEPARTMENT II
TO THE REGIONAL VICE PRESIDENT
ON A GRANT FROM THE GLOBAL ENVIRONMENT TRUST FUND
TO THE BANCO NACIONAL DE OBRAS Y SERVICIOS PUBLICOS
FOR A PROTECTED AREAS PROGRAM**

1. Country/Sector Background. Mexico faces significant challenges in managing its environmental resources, including problems of air and water pollution in urban areas and management of agricultural lands, fisheries, forests and coastal areas. High concentrations of ozone, carbon monoxide, fine particulates, sulfur dioxide and lead in the air in many cities pose a significant hazard to a wide cross-section of the population. Water is relatively scarce in much of Mexico, and many of the country's surface waters are polluted with municipal, industrial or agricultural waste. Only two-thirds of the urban population is connected to a sewer system.

2. Mexico's environmental legislation is far ahead of that of most developing countries. Article 27 of the Mexican Constitution establishes the obligation of the federal government to conserve the nation's natural resources and to preserve and restore ecological equilibrium in the public interest. Article 73 gives the Congress the authority to promulgate laws defining the respective roles of the federal, state and local levels of government in environmental protection. Exercising this constitutional authority, the Congress passed the Ley General del Equilibrio Ecologico y la Proteccion al Ambiente (General Ecology Law) which went into effect in March 1988. It contains rules which define ecological planning and zoning, environmental impact studies, restoration of degraded ecosystems, protection of natural areas and plant and animal life, sound exploitation of natural resources, and pollution prevention and control. The Law contains the framework for ensuring a more sensitive and sustainable development pattern in Mexico through improved intersectoral cooperation, increased social participation, and the creation of strong new environmental standards. The law also defines protected areas in Mexico, and provides the basis for sound management of protected areas by government in close coordination with society-at-large. Finally, the law defines clearly the respective responsibilities of the various levels of government with regard to environmental protection and natural resources management.

3. In 1982, the government created the Secretariat for Urban Development and Ecology (SEDUE), consolidating in a single agency most of the environmental protection responsibilities which had previously been dispersed in several federal agencies. SEDUE is responsible for regulating air and water quality, ensuring that public and private sector investments meet established environmental criteria, and managing federal protected areas. While SEDUE suffered the same financial and institutional problems as other federal secretariats during the fiscal contraction of the mid-1980s, by 1990 the government began to take firm measures to strengthen the agency to take on a leadership role in environmental protection and natural resources management.

4. The government's priorities for environmental policies and actions, as summarized in the 1989-94 National Development Plan, are: (i) to strengthen the legal framework to prevent deterioration of the environment, and use environmental regulation as an efficient instrument of environmental protection of the country's geographical zones and regions; (ii) to subject all economic activities and projects to strict criteria of environmental care; (iii) to design policies and take actions to prevent further deterioration of, and improve, air and water quality, prevent or slow down soil erosion, and introduce adequate treatment of solid wastes and hazardous materials; and (iv) to increase public awareness of, and participation in, environmental protection.

5. In early 1990, SEDUE published the "National Program for Environmental Protection: 1990-1994." This program is intended to orient the efforts of the federal government and social groups in environmental protection. Key emphases of the program are: (i) decentralization of environmental control authority to state and municipal levels of government; (ii) ecological planning and zoning, including appropriate designation of wildlands as natural protected areas; (iii) use of the "Polluter Pays Principle" to ensure that development decisions internalize associated environmental costs, and to help defray the cost of environmental management; and (iv) improved interagency coordination.
6. The territory of Mexico contains a significant proportion of the world's biodiversity, ranking fourth among the thirteen mega-diversity countries identified by international biodiversity specialists. This biodiversity is characterized by a wide variety of ecosystems and a high rate of endemism: the country has the largest diversity of reptiles in the world and seven of the eight species of the world's marine turtles come to Mexico's shores to lay their eggs. Mexico occupies second place in mammal diversity, and contains more endemic terrestrial vertebrates than any other country in the neotropics. Mexico's biodiversity is not confined to animal species; its flora is also very diverse, harboring over 22,600 known plant species. Moreover, 14 percent of the plant genera, and an estimated 40-50 percent of the species are endemic. Related to the richness of species in Mexico is the diversity of the country's habitats. Ranging from temperate to tropical climates, and bisected by a major mountain chain, Mexico's habitats range from deserts and snow-covered peaks to vast grasslands and wetlands, to coastal and marine ecosystems.
7. To protect its rich biological wealth, Mexico has established a national system of protected natural areas, SINAP, administered by SEDUE. By the mid-1980s, this system included over a hundred protected areas. A recent re-evaluation of the biological value of these areas recognized that many were too small to be viable over the long term, or had become too degraded, due to inadequate protection, to be sustained. Consequently, SINAP was reduced to the 66 natural protected areas of greatest importance, encompassing 5.5 million hectares or almost three percent of the national territory. SINAP is currently comprised of 44 National Parks, 8 Biosphere Reserves, 13 Special Biosphere Reserves, and one Area for the Protection of Flora and Fauna. Given resource constraints, however, SINAP's parks and reserves still lack the attention necessary to ensure their effective protection from encroachment.
8. Mexico is now seeking to strengthen its capacity to protect its biodiversity resources, taking into account its limited resources and the need to set priorities carefully. The country's strategy emphasizes the need to strike a balance between conservation and exploitation of the resources contained in its protected areas. This balance is achieved through careful planning, culminating in the preparation and implementation of a management plan for each protected area. Based on a detailed analysis of the physical and social characteristics of the protected area, the management plan specifies the specific objectives to be achieved in the area, and the regulations and programmatic activities necessary to ensure the achievement of those objectives. This approach is described in the document, "Protected Natural Areas of Mexico: Legislation and Management Plans" (translation), transmitted to the Bank by SEDUE's Under-secretary for Ecology (Annex 1).
9. Under the Protected Areas Program of the proposed Environmental Project, the government proposes to support with the proposed grant up to 17 high-priority protected areas, representative of several important ecosystems around the country. In addition, the government would use the proceeds of the proposed Bank loan for the Environmental Project to carry out: (i) a study of SINAP to identify gaps in ecosystem and species representation and propose new protected areas; (ii) a study to

identify appropriate sites and prepare regulations to establish biological corridors between protected areas; (iii) actions to control wildlife trade; and (iv) actions to protect the nesting sites of endangered marine turtles.

10. Protected Areas Program Objectives. The principal objective of the protected areas program would be to assist in the conservation of Mexico's biodiversity by supporting the management of up to 17 high-priority protected areas. The 17 areas chosen are among some 30 Mexican protected areas that are internationally recognized as most critically in need of support. Each of the 17 protected areas contains endemic or endangered species of global importance. Successful implementation of the program would demonstrate how to protect a variety of fragile ecosystems in the context of a sustainable development approach in a country where the legal and institutional framework for effective protection of protected areas is well developed. Lessons learned in the Mexican context are expected to assist other countries whose protected areas policy and legislation are less advanced, as they move to enact the laws and regulations needed to underpin an effective biodiversity protection strategy.

11. Component Description. The protected areas program would be an integral part of the proposed Bank-supported Environmental Project covering the area of biodiversity conservation. The component design employs a program approach, whereby resources would be available to finance selected activities in eligible protected areas on the basis of a detailed management plan and a corresponding operating plan for each protected area. The protected areas to be supported under the proposed program would be selected by the Bank on the basis of agreed eligibility criteria from among the following 17 protected areas (see para. 14):

- 1- Reserva de la Biosfera El Vizcaino, Baja California Sur
- 2- Reserva Especial de la Biosfera Islas del Golfo, Baja California
- 3- Parque Nacional Constitucion de 1857, Baja California
- 4- Reserva de la Biosfera Calakmul, Campeche
- 5- Parque Nacional Cascada de Bassaseachic, Chihuahua
- 6- Reserva de la Biosfera Montes Azules, Chiapas
- 7- Reserva Especial de la Biosfera Cascadas de Agua Azul, Chiapas
- 8- Parque Nacional Canon del Sumidero, Chiapas
- 9- Parque Nacional Lagunas de Montebello, Chiapas
- 10- Parque Nacional El Chico, Hidalgo
- 11- Parque Nacional Izta-Popo, Mexico, Morelos, Puebla
- 12- Reserva Especial de la Biosfera Mariposa Monarca, Mexico, Michoacan
- 13- Reserva Especial de la Biosfera Isla Isabel, Nayarit
- 14- Parque Nacional Lagunas de Chacahua, Oaxaca
- 15- Reserva de la Biosfera Sian Ka'an, Quintana Roo
- 16- Reserva Especial de la Biosfera Isla Contoy, Quintana Roo
- 17- Reserva Especial de la Biosfera Ria Lagartos, Yucatan

12. Under the protected areas program, GET and counterpart funds would finance: (i) consultant services to assist SEDUE in preparing a management plan for each of the 17 protected areas (US\$1.3 million); (ii) based on the results of the management plan, items contained in the corresponding operating plan for each protected area, including: (a) basic infrastructure investments (e.g. visitor administration headquarters, guard posts and houses, fire detection towers, fences and nature trails) (approximately US\$6.9 million for all 17 protected areas), (b) equipment and vehicles (e.g. trucks,

four-wheel drive vehicles, boats, power generators, and radio and first aid equipment) (US\$2.7 million), (c) demarcation of protected area borders and consultant services (US\$3.4 million), and (d) incremental operating expenditure for the protected areas (e.g. incremental technical staff and rangers, materials, maintenance, etc.) (US\$20.0 million); (iii) the costs of periodic meetings of local governmental and non-governmental groups (TACs -- see para. 17, below) to advise and assist the director of each protected area (US\$0.5 million); (iv) training programs for protected areas administrators and staff (US\$0.4 million); (v) preparation of an eco-tourism plan for one protected area (para. 13, below) (US\$0.2 million); (vi) participation of Mexican and non-Mexican specialists in reviewing management and operating plans, as well as progress in program implementation (US\$0.5 million); and (vii) program coordination (US\$0.6 million). These estimates are based on indicative activities in the protected areas; each area's operating plan would provide a firm estimate of the costs to be incurred under the program. During 1992, while management plans are being prepared for the 17 protected areas, the program would provide a minimum level of support to carry out emergency protection plans in 13 of the 17 areas (US\$2.1 million).¹ Under the emergency plans, financing would be provided for such items as construction of entrance posts in some protected areas; the purchase of one or two vehicles and radio, firefighting, and first aid equipment for each protected area; and the hiring of a director and between 6 and 12 rangers per area. The total cost of the protected areas program is estimated at US\$38.6 million equivalent, with a foreign exchange component of US\$1.5 million (3.9 percent). A breakdown of costs and the financing plan are shown in Schedule A. Amounts and methods of procurement and of disbursement of the proposed grant, and the disbursement schedule for the GET grant are shown in Schedule B. A timetable of key project processing events is given in Schedule C. A map of Mexico indicating the location of the 17 protected areas is also attached (IBRD - 23536).

13. Several of the 17 protected areas would also be appropriate for limited eco-tourism development that could generate resources to cover a portion of the recurrent costs of conservation activities. The protected areas program would not finance any eco-tourism investments, but would contribute to the development of an eco-tourism strategy for the SINAP by funding the preparation of an eco-tourism plan for the Special Biosphere Reserve Isla Contoy in the state of Quintana Roo in Southern Mexico which would determine: (i) the potential market for eco-tourism in the protected area; (ii) the level of tourism that the protected area could support without compromising its conservation objectives; (iii) the types and location of infrastructure that would be appropriate to serve potential tourists; and (iv) the conditions under which SEDUE should auction concessions to developers to establish and operate tourism facilities. The result of this analysis would provide the basis for developing eco-tourism plans in other protected areas.

14. While the protected areas program would be targeted to 17 protected areas, the Bank would take a final decision on the level and application of GET support for each area based on its review of the respective completed management plan and corresponding operating plan. The Bank would determine each area's eligibility for GET support on the basis of criteria agreed by the government and the Bank. These criteria (contained in Annex 2) include the existence of adequate land-use regulations, consistency of the objectives of the management plan with GEF objectives, and the quality of the management plan (and corresponding operating plan) for the protected area. Detailed monitoring and evaluation indicators would be developed in the context of each protected area's

¹The appraisal mission reviewed emergency plans for the following protected areas from the list of areas presented in para. 11: 1, 2, 3, 4, 5, 10, 11, 12, 13, 14, 15, 16 and 17.

management plan. In determining whether each protected area is in compliance with the agreed eligibility criteria, the Bank would take into account the views of two technical specialists selected from a group of thirteen Mexican and non-Mexican technical specialists who, after reviewing the corresponding documentation and visiting the protected area, would submit independent reports of their findings and recommendations to the government and the Bank. Considerable progress has already been made in preparing management plans for eight of the 17 protected areas.

15. Once the Bank has determined that the protected area meets the basic eligibility criteria for GET financing (referred to in para. 14), the Bank would evaluate the corresponding operating plan to determine the appropriate level of GET financing. The Bank would determine the level of GET support to be allocated to each protected area on the basis of the operating plans and information about other available sources of financing for the protected area. The operating plans would contain detailed budgets including both capital and recurrent cost expenditures over a four year period. In determining the allocation of GET resources to be made to each eligible protected area, the Bank would seek to maximize the diversity of issues to be addressed under the program, as well as the approaches employed to address those issues.

16. In order to prevent a substantial amount of GET resources from being tied up to support the protected areas program in the event that the government is not able to prepare in a timely manner a sufficient number of satisfactory management and operating plans, the Bank and the government have agreed to a formula for canceling a portion of the GET grant based on early implementation experience. By end-September 1992, the Bank would review the level of GET resources already committed through approved operating plans received by August 31, 1992, and would cancel from the GET grant any amount determined by applying the following formula:

$$(\text{US\$25 million}) - [(1.5) * (\text{Approved GET financing})]^2$$

In this way, progress in preparing satisfactory management and operating plans by August 31, 1992 would ensure the availability of GET resources of up to US\$25 million (i.e. the GET grant net of the resources needed to prepare management plans, to finance emergency plans, and to support the review by the independent technical specialists, etc.) for carrying out operating plans once satisfactory management and operating plans are completed for additional protected areas.

17. Program Implementation. In each of the 12 states where the protected areas are located, SEDUE would establish a Technical Advisory Council (TAC) that would periodically monitor implementation experience in the protected areas of the state. Each TAC would include representatives from local communities, scientific groups, local and state governments, SEDUE's state delegation, NGOs, and the private sector. In addition to their regular meetings, once a year each TAC would meet with officials from SEDUE's headquarters in Mexico City and with the independent technical specialists who prepared the initial reports on the protected areas corresponding to that TAC (see para. 14). That annual evaluation meeting would review progress in reaching the targets established at appraisal, and refined for each protected area in the context of preparation of that

which are the...

²For example, if US\$12 million of GET financing is approved by September 30, 1992, then the amount canceled from the grant would be:

$$(\text{US\$25 million}) - [(1.5) * (\text{US\$12 million})] = \text{US\$7 million}$$

protected area's management plan. In addition, the independent technical specialists would prepare reports of their findings and conclusions from participating in these meetings, and send them to SEDUE and the Bank.

18. Mexican law gives SEDUE the authority and responsibility to manage the country's protected areas. Within SEDUE, this responsibility is lodged in the General Directorate of Ecological Conservation of Natural Resources (DGCERN). DGCERN administers protected areas through SEDUE's state delegations, and through contractual agreements with other governmental agencies or non-governmental organizations (NGOs), including research centers or universities. The proposed protected areas program would be implemented through this same institutional structure, the effectiveness and efficiency of which is expected to improve as a result of the institutional restructuring and strengthening supported under the proposed Environmental Project. The Project Coordination Unit (PCU) would also be responsible for coordinating implementation of the protected areas program. BANOBRAS, as financial agent for the GET grant (and borrower of the proposed Bank loan) would be responsible for preparing statements of expenditure (SOEs) requesting disbursement from the GET grant, and would retain supporting documentation.

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19. Sustainability. The Mexican approach to biodiversity conservation is to allow the cautious exploitation of the resources held within its protected areas in a manner and to a degree that does not jeopardize the viability of the protected area, and at minimum public cost. The resources generated by well managed eco-tourism in some of the protected areas would help meet a portion of the recurrent costs of protecting the targeted biodiversity during and beyond the project life. The GET would finance incremental recurrent costs of the program on a declining basis so that, by the end of the program (December 1995), all of its recurrent costs (estimated at US\$6.8 million annually) would be financed from the federal budget or other sources. By that time, the government expects to be able to recover up to 75 percent of the recurrent costs of the program from receipts in the protected areas.

20. Rationale for GEF Funding. Mexico's SINAP contains species and ecosystems of global importance. Given the urgency to address critical air and water pollution problems, the government is not able to provide SINAP with the level of resources needed to ensure that this important biodiversity is protected. In light of heavy development pressures on protected areas, if management of these areas is not improved and additional resources quickly allocated to protection activities, the potential near-term losses in species, both in variety and in uniqueness, are vast. The proposed protected areas program would ensure effective protection and management of up to 17 important protected areas covering 80 percent of SINAP's land area. It would also yield lessons that could be applicable to other countries. An allocation of US\$30 million from the GET is justified because: (i) the program would allow the testing in several ecosystems of a variety of approaches to protecting biodiversity in the context of specific challenges to the viability of individual protected areas; and (ii) the approach to financing (i.e. a time-slice type operation) if found successful, could be used in other countries where the legal and institutional conditions would permit a flexible project design and allow the rapid absorption of a relatively large amount of donor resources.

21. Agreed Actions. During negotiations, agreement was confirmed on the following: (i) the eligibility criteria for GET financing of protected areas; (ii) the initial composition and terms of reference of the 13 Mexican and non-Mexican technical specialists. Also, assurances were received that the government will not change the composition and terms of reference of this group without prior agreement of the Bank; (iii) the process for preparing and reviewing management and operating plans; (iv) guidelines for the establishment and functioning of the TACs; (v) timetable for phasing out GET

financing of the program's recurrent costs; (vi) the process for review of management and operating plans and the formula for possible cancellation of part of the GET funds by September 30, 1992; (vii) the criteria and process for the annual review of implementation of the protected areas program (to be held in the context of the overall review of project implementation), including development of monitoring and evaluation indicators. Prior to effectiveness, the Loan Agreement for the proposed Bank loan to BANOBRAS would become effective. Prior to disbursements on each operating plan: (i) the protected area in question would be determined by the Bank to be eligible for GET financing; (ii) the operating plan would be satisfactory to the Bank; (iii) the corresponding TAC would have been established under arrangements acceptable to the Bank; and (iv) satisfactory contractual arrangements, as appropriate, for the collaborative management of the protected area would be in place.

22. Environmental Aspects. The management plan and corresponding operating plan would constitute an adequate environmental assessment of the activities to be permitted in the protected area. Since all activities to be carried out under the project would be consistent with the management plan, whose principal objective is to ensure the protection of the area's biodiversity, no negative environmental impacts are expected.

23. Benefits. The main benefit of the proposed program would be to protect up to 17 areas of global ecological importance. Several of the protected zones are unique in the world and contain animal species which are globally endangered and whose disappearance would be a loss for the whole world. The component would also serve to demonstrate the possibility of balancing natural resource exploitation and conservation, addressing area-specific threats in innovative ways. In addition, the program is expected to strengthen the institutional and financial capability of the government to protect its protected areas.

24. Risks. The major risks are primarily technical and managerial. The technical risk concerns SEDUE's potential inability to produce management plans deemed satisfactory to protect adequately the biodiversity contained in the selected area. This risk is mitigated by the existence of GET resources provided through the Bank to help prepare these plans, the review of these plans by independent Mexican and non-Mexican technical specialists, and the Bank's close monitoring of the whole process. This risk is further mitigated by agreement that a portion of the GET grant may be canceled following a review of implementation progress to take place in September 1992 (para. 16, above). The managerial risk refers to the potential weakness of Mexican institutions to manage effectively the protected areas. This risk is acceptable, given Mexico's firm commitment to biodiversity protection and the substantial strengthening of SEDUE, the major implementing agency, under the Environmental Project.

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and in: Hacienda's role in the loan's success?

Attachments:

- Schedules
- Technical Annexes

MEXICO

Environmental Project

Estimated Costs and Financing Plan

Estimated Project Costs

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	----- (US\$ millions) -----		
(a) Key functions component	<u>95.4</u>	<u>8.2</u>	<u>103.6</u>
i. Pollution control	30.1	5.3	35.4
ii. Environmental impact	11.9	1.1	13.0
iii. Biodiversity	53.4	1.8	55.2
(of which, protected areas program)	37.1	1.5	38.6 1/
(b) Modernization of Envir. Mgt.	<u>8.1</u>	<u>2.8</u>	<u>10.9</u>
i. Institutional strengthening	1.5	2.8	4.3
ii. Decentralization	5.5	0.0	5.5
iii. Economic instruments	1.1	0.0	1.1
(c) Legislation/regulations/standards	<u>4.1</u>	<u>0.0</u>	<u>4.1</u>
(d) Studies	<u>2.1</u>	<u>0.1</u>	<u>2.2</u>
(e) Project coordination unit	<u>1.2</u>	<u>0.1</u>	<u>1.3</u>
Base cost estimates (a-d)	<u>110.9</u>	<u>11.2</u>	<u>122.1</u>
(e) Contingencies			
i. Physical	0.6	0.3	0.9
ii. Price	3.3	0.3	3.6
PROJECT COSTS	<u>114.8</u>	<u>11.8</u>	<u>126.6</u>
(of which taxes)			13.0

NOTE:

1/ See Schedule A, page 2 for greater detail of this program.

Estimated Costs of the Protected Areas Program

	<u>Investment</u>	<u>Recurrent</u>	<u>Total</u>
	----- (US\$ millions) -----		
(a) Emergency Plans	0.8	1.3	2.1
(b) Operating Plans			
i. Parks (7 parks)	<u>7.0</u>	<u>8.0</u>	<u>15.0</u>
a. Civil Works	4.4		4.4
b. Equipment/vehicles	1.4		1.4
c. Consultant services	1.2		1.2
d. Incremental operating costs		8.0	8.0
ii. Reserves (10 reserves)	<u>6.0</u>	<u>12.0</u>	<u>18.0</u>
a. Civil Works	2.5		2.5
b. Equipment/vehicles	1.3		1.3
c. Consultant services	2.2		2.2
d. Incremental operating costs		12.0	12.0
(c) Management support (TACs, independent technical specialists, general training, preparation of management plans, eco-tourism study, program coordination, etc.)	3.5	---	3.5
 <u>COMPONENT COSTS</u>	<u>17.3</u>	<u>21.3</u>	<u>38.6</u>

Project Financing Plan:

	<u>US\$ millions</u>	<u>(%)</u>
IBRD	50.0	39 a/
GET	30.0	24
Government of Mexico	46.6	37

a/ 44% of total project costs net of taxes

MEXICO

Environmental Project

Protected Areas Program

Allocation of GET Grant Proceeds:

<u>Category</u>	<u>Amount of the Grant Allocated (Expressed in US\$ million Equivalent)</u>	<u>% of Expenditures to be Financed</u>
1. Emergency Plans	2.1	100% in 1992 only
2. Operating Plans		
(A) Civil works, equipment/furn. studies, training	13.0	100%
(B) Incremental operating expenditures	11.6	90% up to US\$6 million; thereafter, 60% up to US\$9.5 million; thereafter, 30%
3. Management Support	3.3	100%
TOTAL	30.0	---

Estimated Loan and Grant Disbursements:

Bank FY:	92	93	94	95	96
	----- in US\$ millions -----				
<u>Bank loan</u>					
Annual	8.0*	17.0	12.0	9.4	3.6
Cumulative	8.0	25.0	37.0	46.4	50.0
<u>GET grant</u>					
Annual	3.1**	6.8	9.2	9.0	1.9
Cumulative	3.1	9.9	19.1	28.1	30.0
<u>Cumulative total</u>	11.1	34.9	56.1	74.5	80.0

- * Including retroactive financing of up to US\$5 million for expenditures made after March 1, 1991, and the initial deposit of US\$5 million into the special account for the Bank loan.
- ** Including the initial deposit of US\$2.5 million into the special account for the GET grant.

MEXICO
ENVIRONMENTAL PROJECT

Timetable of Key Project Processing Events

- | | | |
|-----|--------------------------------|---|
| (a) | Time taken to prepare: | 8 months |
| (b) | Prepared by: | Government of the United Mexican States
with Bank assistance |
| (c) | First IBRD mission: | November 1990 |
| (d) | Appraisal mission departure: | June 1991 1/ |
| (e) | Negotiations: | November 1991 1/ |
| (f) | Planned Date of Effectiveness: | April 1992 |

1/ The protected areas program (proposed for GET grant financing) was appraised and negotiated in February 1992.

MEXICO

Environmental Project

Translation of the Letter from the Government of Mexico Describing
Policy Regarding Protected Natural Areas of Mexico

Secretariat of Urban Development and Ecology
Subsecretariat of Ecology

Mexico City, 2 Dec. 1991

Mr. Rainer B. Steckhan,
Director
Country Department II
Latin America and the Caribbean

I would like to draw your attention to the steps being taken under the Mexico Environmental Project; in particular, the Protected Areas Program to be financed by the Global Environmental Trust Fund (GET).

I am therefore enclosing the document entitled "Protected Natural Areas of Mexico, Legislation and Management Plans," which discusses the objectives of Mexican policy on protected natural areas, management plans as an instrument of Mexican policy on protected natural areas, and the contents of management plans.

That being all at present, I send you my sincere regards.

"SUFRAGIO EFECTIVO. NO REELECCION."
THE UNDERSECRETARY

SERGIO REYES LUJAN

- cc. Dr. Graciela de la Garza García, General Director of Ecological Conservation of Natural Resources; in person.
Dr. Edmundo de Alba, Executive Coordinator of CONADE; in person.

**SECRETARIAT OF URBAN DEVELOPMENT AND ECOLOGY
SUBSECRETARIAT OF ECOLOGY**

**PROTECTED NATURAL AREAS OF MEXICO, LEGISLATION
AND MANAGEMENT PLANS**

**GENERAL DIRECTORATE OF
ECOLOGICAL CONSERVATION OF
NATURAL RESOURCES**

DIRECTORATE OF SINAP

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AND MANAGEMENT PLANS**

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INTRODUCTION

In recent decades Mexico has been experiencing accelerated processes of economic development and settlement of its territory which have been accompanied by significant disruption of its ecosystems. Soil erosion, deforestation, and similar processes of ecological degradation, as well as the threatened or actual disappearance of wild species of flora and fauna, have created growing concern at all national levels.

In order to confront these environmental problems, the government of the Republic has directed its activities--through the National Development Plan, the National Environmental Protection Program, and the General Law for Ecological Balance and Environmental Protection--toward dealing with the country's most serious ecological imbalances.

Given the size and complexity of these ecological problems, solving them will call for well-ordered and organized participation by the three governmental levels as well as the private and social sector, supported by the institutional foundation of ecological policy.

I. MEXICAN POLICY ON PROTECTED NATURAL AREAS

One of the principal challenges of the conservation effort has been the need to integrate the aspects of protection and sustainable development of natural resources with the economic and modernization processes necessary to the country's development.

In this sense, one of the primary strategies of Mexican environmental policy is the consolidation of the National System of Protected Natural Areas (SINAP), which seeks to make conservation of the country's representative ecosystems compatible with the need for rational use of the country's natural resources, as a basis for sustained development of its communities. At the same time, each of the protected natural areas incorporated (into the national system) itself becomes a biological unit for the conservation of biodiversity, as well as an *in situ* bank of germ plasm.

The National Development Plan establishes a strategy for conservation of the country's representative ecosystems and their natural resources in the particular case of protected natural areas. This strategy calls for consolidation of the national system of protected natural areas through the expansion of programs for the conservation, development, and administration of these areas; diversification of their resource utilization, as well as rational and sustainable use of these resources through appropriate techniques and methods of reproduction, propagation, and management; and, at the same time, the creation of a system for ecological inspection and surveillance.

At the same time, the National Environmental Protection Program calls for the country's economic evolution to encompass respect for nature, conservation of resources, and preservation of the environment. One of its principal stated objectives is to ensure the recovery, protection, and conservation of natural resources and the equilibrium of ecosystems; and the principal strategy it proposes is to increase the area covered by the National System of Protected Natural Areas, and to strengthen the capacity for protection and surveillance of the System's component areas.

In March 1988 the General Law for Ecological Balance and Environmental Protection went into effect. Title 2 of this law has the purpose of legally establishing the categories, declarations, and organization of protected natural areas. This article of the Law also includes a section on the National System of Protected Natural Areas, and another on wild flora and fauna.

The important features of the above-cited Law are listed below:

The Law stipulates that the Federation, the states, and the municipalities shall establish measures to protect natural areas, in such a way as to ensure the preservation and restoration of their ecosystems, especially those that are most representative (Article 38); and it indicates that the natural areas in the national territory can come under protection as ecological reserves and be governed by restrictions imposed by the competent authorities making these areas subject to only such utilization and exploitation as are determined to be socially and nationally necessary (Article 44).

The Law considers these areas to be protected natural areas; their establishment is in the public interest, and they have the following goals (Article 45):

- I. To preserve natural settings that are representative of the different biogeographic and ecological regions, and the most fragile ecosystems, in order to protect the equilibrium and continuity of evolutionary and ecological processes.
- II. To safeguard the genetic diversity of wild species on which evolutionary continuity depends, particularly those that are endemic, endangered, or close to extinction.
- III. To ensure rational utilization of ecosystems and their components.
- IV. To provide an area conducive to scientific research and the study of ecosystems and their equilibrium.
- V. To generate information and technologies that make possible rational and sustained utilization as well as preservation of the country's resources.
- VI. To protect settlements, communication routes, industrial installations, and areas of agricultural development by establishing forest zones in mountains that are flood sources or working with the hydrological cycle in basins, or by using any other approaches that help to protect the surrounding elements which an area is ecologically linked with.
- VII. To protect the natural surroundings of areas that contain archaeological, historical, and artistic monuments and remains of importance to the national culture and identity.

In order to encompass the full range of conditions, environments, and situations, SINAP includes nine categories of protected natural areas:

1. Biosphere reserves;
2. Special biosphere reserves;
3. National parks;
4. Natural monuments;
5. National marine parks;
6. Areas for the protection of natural resources;
7. Areas for the protection of flora and fauna;
8. Urban parks;
9. Zones subject to ecological conservation.

The areas included under sections 1-7 are considered to fall within the domain of the Federation; in other words, they are to be established and administered by the federal government. Those included under items 8 and 9 are to be local in nature, as are any that are so designated according the corresponding state or municipal provisions (Article 46).

In addition, when it comes to establishing, administering, and developing protected natural areas, local communities are considered to play a fundamental role in measures to protect the ecosystems, through their participation in various programs for the protection, caretaking, and recovery of resources.

The protected natural areas that are considered to fall within federal domain as a whole make up the National System of Protected Natural Areas (SINAP), as stipulated in Article 76.

At present, the system is composed of 44 national parks, 8 biosphere reserves, 13 special biosphere reserves, 1 area for the protection of wild flora and fauna, and 1 Natural Monument.

These areas are listed below:

NAME OF THE PROTECTED NATURAL AREA	CATEGORY	STATE
1. El Vizcaino	Biosphere Reserve	Baja California Sur
2. Islands of the Gulf of California Reserve	Special Biosphere Reserve	Baja California
3. Isla Guadalupe	Special Biosphere Reserve	Baja California
4. Isla Rasa	Special Biosphere Reserve	Baja California
5. Constitución de 1857	National Park	Baja California
6. Calakmul	Biosphere Reserve	Campeche
7. Montes Azules (Selva Lacandona)	Biosphere Reserve	Chiapas
8. Cascadas de Agua Azul	Special Biosphere Reserve	Chiapas
9. Caño del Sumidero	National Park	Chiapas
10. El Triunfo Biosphere Reserve	Chiapas	Chiapas
11. Lagunas de Montebello	National Park	Chiapas
12. Palenque	National Park	Chiapas
13. Selva Del Ocote	Special Biosphere Reserve	Chiapas
14. Cascadas de Bassaseachic	National Park	Chihuahua
15. Cumbres de Majalca	National Park	Chihuahua
16. Balneario de los Novillos	National Park	Coahuila
17. Cerro de la Estrella	National Park	Federal District
18. Cumbres del Ajusco	National Park	Federal District
19. El Tepeyac National Park	Federal District	
20. La Michilia	Biosphere Reserve	Durango
21. Mapimf	Biosphere Reserve	Durango
22. El Veladero	National Park	Guerrero
23. El Chico	National Park	Hidalgo
24. Los Marmoles	National Park	Hidalgo
25. Tula	National Park	Hidalgo
26. Sierra de Manantlan	Biosphere Reserve	Jalisco
27. Nevado de Colima	National Park	Jalisco, Colima
28. Bosencheve	National Park	Mexico, Michoacan
29. Desierto del Carmen	National Park	Mexico

NAME OF THE PROTECTED NATURAL AREA	CATEGORY	STATE
30. Ins. Miguel Hidalgo	National Park	Mexico, D.F., Costilla
31. Iztaccihuatl- Popocatepetl	National Park	Mexico, Morelos, Puebla
32. Molino de Flores Netzahualcoyotl	National Park	Mexico
33. Nevado de Toluca	National Park	Mexico
34. Los Remedios	National Park	Mexico
35. Sacromonte	National Park	Mexico
36. Zoquiapan y Anexas	National Park	Mexico, Puebla
37. Mariposa Monarca	Special Biosphere Reserve	Michoacan, Mexico
38. Cerro de Garnica	National Park	Michoacan
39. Ins. José Ma. Morelos y Pavon	National Park	Michoacan
40. Lago de Camécuaro	National Park	Michoacan
41. Pico de Tancitaro	National Park	Michoacan
42. Rayon	National Park	Michoacan
43. Lagunas de Zempoala	National Park	Morelos, Mexico
44. El Tepozteco	National Park	Morelos
45. Cumbres de Monterrey	National Park	Nuevo Leon
46. Cerro de la Silla	Natural Monument	Nuevo Leon
47. Isla Isabel National Park	Nayarit	
48. El Sabinal National Park	Nuevo Leon	
49. Benito Juarez	National Park	Oaxaca
50. Lagunas de Chacahua	National Park	Oaxaca
51. Sian Ka'An	Biosphere Reserve	Quintana Roo
52. Isla Contoy	Special Biosphere Reserve	Quintana Roo
53. El Cimatario	National Park	Querétaro
54. Tulum	National Park	Quintana Roo
55. El Potosí	National Park	San Luis Potosí
56. El Gogorron	National Park	San Luis Potosí
57. Cajon del Diablo	Special Biosphere Reserve	Sonora
58. Isla Tiburon	Special Biosphere Reserve	Sonora
59. Sierra de Santa Martha	Special Biosphere Reserve	Veracruz
60. Volcán de San Martín	Special Biosphere Reserve	Veracruz
61. Cañon de Rio Blanco	National Park	Veracruz
62. Pico de Orizaba	National Park	Veracruz
63. La Malinche	National Park	Tlaxcala

NAME OF THE PROTECTED NATURAL AREA	CATEGORY	STATE
64. Ria Celestun	Special Biosphere Reserve	Yucatán
65. Ria Lagartos	Special Biosphere Reserve	Yucatán
66. Dzilbilchaltun	National Park	Yucatán

In addition, among its other objectives SINAP aims to enforce the provisions of the General Law for Ecological Balance and Environmental Protection with reference to protected natural areas in order to preserve the natural heritage of the nation, coordinate with the appropriate provisions of the federal public administration in the areas under its jurisdiction, and coordinate with social and private groups regarding specialized measures oriented around the goals which the natural areas in the national system have been established to achieve.

Articles 48, 49, 50, 51, 52, 53, 54, 55, and 56 of this same Law define and categorize protected natural areas, emphasizing the procedures and requirements they should all have with regard to biological importance, surface area, and the use and allocation of natural resources, among others.

Finally, in order to comply with the provisions and policies of the legislation in force, the management of protected areas is planned through the preparation of management plans. Such plans are categorized in the above-cited Law and serve as planning instruments that give the basic outlines of what needs to be done in order to achieve the implicit objectives behind the establishment of a natural protected area: preserving biodiversity and banks of germ plasm, and at the same time promoting comprehensive community development.

II. MANAGEMENT PLANS AS AN INSTRUMENT OF MEXICAN POLICY ON PROTECTED NATURAL AREAS

In line with the policies of the National Development Plan, the National Environmental Protection Program, and the General Law for Ecological Balance and Environmental Protection, the preparation of management plans is a fundamental stage of the planning process for protected natural areas that are part of SINAP. These plans incorporate the programming of activities directed toward the protection, conservation, and promotion of biodiversity and *in situ* banks of germ plasm; intra- and inter-institutional coordination; and integration of the public, social, and private sectors into the processes of conservation and rational utilization of the natural resources in these areas.

In this sense, management plans serve as a planning tool which uses knowledge about the problems of a protected natural area, as well as information about its natural resources and how they are used, as a basis for proposals on the organization, classification, and coordination of measures that will make it possible to achieve the objectives and targets established for that area. A management plan is thus seen as a dynamic and flexible tool which is capable of gathering feedback and adapting in accordance with the management policies and standards issued for that purpose, and which always

acknowledges the importance of fulfilling the objectives that the protected natural area was established to achieve.

In this context, Article 65 of the General Law for Ecological Balance and Environmental Protection stipulates that the agency or agencies of the federal executive branch who propose that a protected natural area be established under federal jurisdiction (in this case, SEDUE) shall prepare the management plan for that area, with the participation, as applicable, of any other competent agencies and local authorities, within the stated time period in the corresponding declaration.

In Article 68, the above-cited Law indicates that the management plan for a reserve must contain at least the following elements:

1. A description of the area's physical, biological, social, and cultural features, in the national, regional, and local context;
2. The short-, medium-, and long-term actions to be taken, and how they are linked to the National System for Democratic Planning. These actions will encompass research, resource utilization, expansion, distribution, operation, coordination, follow-up, and control;
3. The specific objectives of the reserve; and
4. The technical standards that apply, where appropriate, to the exploitation of flora and fauna, as well as to sanitary, crop-related, and domestic cuttings, or any whose aim is to prevent contamination of the soil and water.

III. THE CONTENTS OF A MANAGEMENT PLAN

The following is a description of the principal components of a management plan. It should be noted that, since national parks and reserves have distinct management objectives, the management plans for these areas will contain some differences as well. It is therefore noted in the text when differences between these two types of areas occur.

1. INTRODUCTION

1.1 Preliminary Information

The geographical location of the area is discussed in both physical and geopolitical terms, including access routes and the area it occupies. There is also a brief description of the general characteristics of the locale, which provides the rationale behind its conservation, management, and sustainable development, along with an explanation of its importance in the international, national, and regional context.

1.2 Background

This is a brief description of the area which reviews the information available, the legal aspects, previous conservation efforts, the current situation, and any general issues.

2. OBJECTIVES

The general and specific objectives of the management plan are listed.

3. ASSESSMENT

This section describes the area's physical, biotic, socioeconomic, and cultural features, as well as its problems.

3.1 Physical Characteristics

a) Physiography and topography

The area is put into context according to its physiographical region and province, based on the classification system developed by J. Rzeclowski (1983). There is also a list of such topographical features as ravines, rises, valleys, gullies, etc., in addition to the names of its main formations, with maps and charts to back up all this information.

b) Geology

The area is classified in terms of its geological roots and evolution, with emphasis on its most important characteristics (volcanic activity, faults, types of rock, etc.)

c) Edaphology

Based on the FAO soil classification system, the specific features of each area are listed, providing a profile of soil types.

d) Hydrology

The hydrological basins found in each protected area are looked at from a hydrological viewpoint, including the principal streams, rivers, bodies of water, etc.

e) Climatology

The area is classified from a climatological perspective based on Köppen's classification system, as modified by García E. (1981). Information is also included on the closest meteorological season(s), if any.

The climate data that can be classified includes average monthly temperatures, monthly rainfall, relative humidity, and the hottest and wettest months during the year.

3.2 Biotic Characteristics

a) Flora

The area is classified in terms of its prevailing types of vegetation and their most important associations, with a description of the representative species in each one, as well as any species that are endemic, close to extinction, rare, or endangered.

b) Fauna

In this section, the area is classified in terms of its fauna, with a description of the most important vertebrate or invertebrate species, how they are associated with ecological units and habitats, and which species are endemic, rare, endangered, or close to extinction.

3.3 Socioeconomic Characteristics

This aspect involves an examination of the socioeconomic conditions of the communities present in the area or its zone of influence, and of how these communities use its natural resources. Particular attention is paid to the following:

Property rights
Current soil use

Here, using supplementary information from the draft Land Tenancy Law under preparation by the Secretariat, current land uses are indicated (for agriculture, livestock raising, hunting, mining, tourism, and other purposes), along with information on land regulation.

3.4 Cultural Characteristics

The protected natural area is classified based on the presence of any archaeological remains of historic or cultural importance. This includes their state of preservation, importance, etc., as well as the historical or cultural significance of the area where they are found.

3.5 Rationale

Here the value and potential uses of both national parks and reserves are specified according to the criteria in the following paragraphs:

a) ecological importance

The biological importance of the area is described in terms of the diversity of its biological components, ecosystems, and genetic material or its genetic diversity; the representativity of its existing ecosystems; the degree of preservation of those ecosystems; the preservation of germ plasm because of the presence of species that are endemic, rare, endangered, close to extinction, or of particular interest; and the features and break-down of the area's plant substratum.

b) historical and cultural importance (if any)

c) scientific, educational, and recreational importance

In this category, the area is looked at in terms of its value as an area for research on the ecosystems and their components; for recreational purposes; and for the development of environmental education plans. At the same time, the area's social impact is pointed out with regard to the potential number of visitors, the creation of jobs, etc.

3.6 Issues

Based on the rationale and assessment, in this category the problems, limitations, and restrictions that hinder conservation in the area are described, along with any obstacles to the utilization of area resources.

4. INVESTMENT PROGRAM OR ANNUAL OPERATING PROGRAM

This category details the short-, medium-, and long-term (six-year) investment program needed in order to carry out the measures stipulated in the management plan for the protected natural area, in complete correspondence with its horizontal and vertical breakdown and subcomponents.

5. SUBCOMPONENTS OF THE MANAGEMENT PLAN FOR A PROTECTED NATURAL AREA

The following is a list of the principal subcomponents that must be included in any management plan or investment program for a protected natural area:

5.1 Conservation Component

5.1.1 Subcomponent on the prevention, control, and fighting of forest fires

Contains measures and strategies for controlling forest fires which are aimed at mitigating their negative impact on stands of trees and keeping fires from spreading, as well as taking the steps necessary to prevent outbreaks.

5.1.2 Subcomponent on the prevention, control, and fighting of forest plagues

Includes the rapid detection of forest plagues, based on the use of existing measures and strategies to prevent the loss of large tree populations and prevent the spread or development of plagues by strengthening forest stands.

5.1.3 Subcomponent on reforestation

Encompasses measures and strategies that favor the recovery of plant cover and protection of the soil in areas of erosion, and among tree populations that cannot regenerate themselves by natural means.

5.1.4 Subcomponent on soil protection and recovery

Includes the detection of high-risk areas for erosion, as well as areas that are already affected, in order to determine the techniques that need to be employed in order to recover these areas within a given time period.

5.1.5 Subcomponent on protection of cultural resources

Includes measures and strategies for preserving the cultural heritage in protected natural areas.

5.1.6 Subcomponent on management and protection of wild fauna

Involves preserving diversity in the natural area and protecting the ecologically representative wild fauna that live there, in order to maintain equilibrium in the ecosystems present in the area.

5.1.7 Subcomponent on seedbeds

Includes measures and strategies for preserving the ecological diversity of the natural area by protecting and propagating the germ plasm of the dominant and ecologically representative plant species which are adapted to the environmental conditions found there, and for maintaining a supply of the seedlings necessary for reforestation activities.

5.1.8 Subcomponent on breeding sites

Includes measures and strategies for preserving the ecological diversity of the area by improving the numbers and distribution of the ecologically representative wild fauna that live there.

5.2 Public Use and Recreation Component

5.2.1 Subcomponent on tourism

Includes strategies and measures for providing the visiting public with recreational and leisure facilities in contact with nature without affecting the different ecological components of the area.

5.2.2 Subcomponent on sign posting

Sets forth strategies and measures for providing visitors with orientation on the various services that are available, as well as any restrictions that may apply during their stay in the area.

5.2.3 Subcomponent on environmental education

Includes guidelines for providing the elements necessary to sensitize visitors to the importance of conserving the area's natural resources.

5.2.4 Subcomponent on environmental interpretation

Includes strategies and measures that make it possible to maintain installations, mechanisms, and activities that involve visitors in the conservation effort for the natural area.

5.2.5 Subcomponent on research

Sets forth strategies and measures for making available technical and scientific elements that permit rational and sustainable management of the area's natural resources.

5.2.6 Subcomponent on infrastructure

Sets forth strategies and measures for maintaining the installations necessary to adequately fulfill the objectives of conservation, protection, and development of the area's natural resources, in addition to providing recreation and attending to the needs of the visiting public.

5.3 Administrative Component

5.3.1 Subcomponent on operation

Sets forth strategies and measures for coordinating and implementing the activities, measures, programs, and projects of the natural area and the personnel who work there.

5.3.2 Subcomponent on inspection and surveillance

Sets forth strategies and measures for strengthening the protection of natural resources through activities aimed at reducing the incidence of unlawful and careless use of those resources.

5.3.3 Subcomponent on zoning

Establishes guidelines for delimiting and setting boundaries to divide the area's surface into specific zones, based on soil use and capability, where any activities carried out are subject to regulation.

5.4 Coordination Component

5.4.1 Subcomponent on inter-institutional coordination

Includes measures and strategies for making arrangements and agreements with the three governmental levels to join efforts and resources in the implementation of the management plan for the area.

5.4.2 Subcomponent on community coordination

Includes strategies and measures for promoting the effort to sensitize the communities that reside in the area and raise their level of ecological, cultural, and educational awareness, so that agreements can be drawn up for community participation in the recovery, conservation, and sustainable exploitation of the area's natural and cultural resources.

5.4.3 Subcomponent on scientific coordination

Includes measures and strategies for fostering, organizing, and promoting participation by the scientific community in the execution of research projects in the areas of evaluation, recovery, and conservation of natural resources, as well as in the conduct of socioeconomic research involving the common lands and agrarian communities located within the protected area's zone of influence.

5.4.4 Subcomponent on coordination with non-governmental organizations

Includes measures and strategies for promoting and maintaining support from the different social sectors.

5.5 Legal Framework Component

5.5.1 Subcomponent on the internal regulation of the area

Encompasses preparation of the set of measures and policies that must be complied with when any activity is carried out within the protected area.

5.5.2 Subcomponent on delimitation and marking of boundaries

Includes measures to physically define the borders of the protected area with boundary stones and monuments in order to conserve its natural resources.

5.5.3 Subcomponent on land tenancy

Encompasses the determination of regulations governing land ownership in the protected area, as well as the specification of compensation to be paid for any subsequent damages.

5.5.4 Subcomponent on concessions

Encompasses measures and strategies for licensing installations and the provision of services to the private and social sector in such a way as to ensure that these obtain benefits from providing the licensed service and bring in financial resources that make the operation of the protected area self-supporting.

6. Annexes

6.1 List of Flora

6.2 List of Fauna

6.3 Maps and Charts (scale = 1:50,000)

- Map of the region of influence, including geographical coordinates (latitude and longitude), access routes, and important nearby population centers.
- Map of the area, including boundaries, zoning, and land tenancy.
- Topographical map, including delimitation of the prevailing types of vegetation.

6.4 Bibliography, together with research and support work on the area.

Secretariat of Urban Development and Ecology
Subsecretariat of Ecology

Mexico City, 3. Feb. 1992

Mr. Rainer B. Steckhan,
Director
Country Department II
Latin America and the Caribbean
The World Bank
Washington, D.C.

I am sending you the following pages in order to clarify certain points with respect to the document "Protected Natural Areas of Mexico, Legislation and Management Plans," which was sent to you on 2 December 1992.

This letter will help to give you a better understanding of that paper discussing Mexican policy on protected natural areas.

A. LOCAL COMMUNITIES

When the management plan for each area is being prepared, the local communities will participate and be consulted during the analysis of socioeconomic and cultural concerns of importance to the plan, and will also help to identify the specific coordination strategies and measures required in order to implement the management plan for the area in question.

At this stage, it is inadvisable to establish any partial commitments with the communities residing in the area, beyond those that have already been mentioned. This is to ensure that the coordination that goes on reflects the overall perspective of the actual management plan once it has been defined, and that, at the same time, the national strategy of coordination brigades is used, as described in the policy paper under Section 5.4.2.

Once the management plan has been set up, more formal coordination can be implemented, along with any improvements that appear necessary in light of the experience gained during this coordination process. This will also help to ensure that the management plan remains a dynamic one.

B. CURRENT DELIMITATION OF PROTECTED NATURAL AREAS

Although the process of formulating management plans will yield useful information for updating the current boundaries of natural protected areas and defining their surface area, any prospective changes must result from the overall perspective of the National System of Protected Natural Areas, and must at the same time take into account the possibility of integrating biological corridors.

As a result, this aspect needs to be approached in a systematic and integrated fashion, based on national priorities and the findings of study projects incorporated into the Environmental Sectoral Credit which deal with the restructuring of SINAP and the creation of biological corridors.

C. ENVIRONMENTAL IMPACT STUDIES

Here I would like to discuss the procedure for evaluating the potential environmental impact of any basic infrastructure that might be established in Mexico's protected natural areas as part of the GEF project in Mexico--such as surveillance booths, administrative buildings, seedbeds, breeding sites, guided trails, etc.--and which is meant to be used in the management and administration of protected natural areas and the biodiversity they contain.

On this subject, I would like to point out to you that a management plan is in and of itself a national instrument for ecological organization and the evaluation of any potential environmental impact that might result from works or activities for the management, conservation, and exploitation of the natural resources that make up the biodiversity of a protected natural area.

At the same time, I would like to inform you that the General Directorate of Ecological Conservation of Natural Resources--a division of the Subsecretariat which is under my charge--is the unit responsible for evaluating management plans and the works, activities, and measures that are planned as part of them, as well as for setting technical criteria and standards aimed at mitigating their potential impact on the environment.

D. TRAINING FOR PERSONNEL IN PROTECTED NATURAL AREAS

Personnel training is unquestionably an extremely important aspect of the management of protected natural areas, and constitutes a comprehensive program for all the areas in the system. However, we feel that it is inappropriate and economically wasteful to have various, unconnected programs in the different areas. For this reason, the Subsecretariat has a general program to cover the training needs of all the areas.

In fact, this program is based on the availability of highly trained personnel, some coming from central offices and others from the delegations, who have broad experience, on the one hand, and who have in addition attended courses for refresher training provided through international programs. These include the course on reserves which has been organized each year in conjunction with US-FWS, DUMAC, the Technological Institute of Monterrey, and specialized North American organizations. There is a similar meeting on park management in which the US-NPS, WWF, and the Antonio Narro Autonomous University take part. The program has been repeated for five years. The corresponding General Directorate has 18 persons who have participated in this event. Recently specific training in fire management has been included. These trained personnel serve in turn as training monitors for the remaining staff. We do not feel that this process should be broken down area by area and incorporated into the management plans.

2. INDICATORS FOR EVALUATION

The indicators for evaluation that apply to all the areas have been reported to the Bank under separate cover.

The specific indicators for each area need to be determined in light of its definitive management plan, and based on the opinion of the technical advisory council that is associated with that specific area. They also need to be flexible so that they can be modified as part of the implementation process. The Bank already has a foundation in this area.

In the hope that the Bank finds these details useful for its purposes, I remain,

Yours Sincerely,

"SUFRAGIO EFECTIVO. NO REELECCION"

SERGIO REYES LUJAN

cc. Antonio Cervera Sandoval, Coordinator of Advisors for the Subsecretariat of International Financial Affairs, S.H.C.P. [Secretariat of Finance and Public Credit].

MEXICO

Environmental Project

Protected Areas Program

Eligibility Criteria For Supporting Protected Areas

1. Each of the 17 areas selected for biodiversity protection would have to meet all of the following criteria to be eligible for financing from the Global Environment Trust Fund (GET) under the Environmental Project:

*the 17 areas
have GET
access to
the program*

- (A) Non-availability of alternative funding for the activities proposed in the operating plan;
- (B) In accordance with Article 98 of the General Ecology Law, the management and operating plans should ensure that: (i) permitted land uses are compatible with the specific characteristics of the soils affected and should not alter the equilibrium of the protected area's ecosystems; (ii) permitted land uses should maintain the physical integrity and the productive capacity of the soils of the protected area; and (iii) permitted productive activities should avoid practices that would lead to erosion, degradation, or modification of the topographic characteristics of the protected area with consequent adverse environmental effects.
- (C) The area's management plan should have as a principal objective the protection of Mexican biological diversity of global importance, with the pursuit of sustainable development to the extent compatible with the conservation of that biological diversity.
- (D) Preparation of management plans should be consistent with the strategy and description of management plans contained in the document "Areas Naturales Protegidas de Mexico: Legislacion y Programas de Manejo" (attached to this memorandum as Annex 1).

2. If a selected area meets the criteria listed above, the Bank will evaluate the corresponding operating plan to determine the appropriate level of financing from the GET. Each operating plan would set out the specific activities or investments required to implement the programs in the management plan (including monitoring and evaluation activities). It would provide for the phasing in of physical investments and investments in required staff so as to ensure the maximum effectiveness of these staff. Each operating plan would also describe other activities financed from other sources that contribute to achieving the objectives of the management plan. Finally, the operating plan would contain cost estimates of all activities and investments to be financed under the protected areas program.