

LAO PDR

WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

GRANT AND PROJECT SUMMARY

Source of Grant: Global Environment Trust Fund
Grant Recipient: Lao PDR
Amount: SDR3.7 million (US\$5.0 million equivalent)

Terms: Grant

Objectives: To protect biological diversity through human resource development and institutional strengthening, the designation, establishment and management of priority protected areas and protection of associated wildlife, and the planning and implementation of community participating programs in and around protected areas.

Financing Plan:

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	-----	US\$ million	-----
Government	0.2	0.0	0.2
GET	1.2	3.8	5.0
TOTAL	<u>1.4</u>	<u>3.8</u>	<u>5.2</u>

Economic Rate of Return: Not applicable

Poverty Category: Program of Targeted Interventions

Maps: IBRD 23388, 23534

CURRENCY EQUIVALENTS

(as of November 1, 1993)

Currency Unit	=	Kips
Kip 1.00	=	US\$0.0014
US\$1.00	=	Kips 715

WEIGHTS AND MEASURES

1 kilogram (kg)	=	2.20 lbs
1 kilometer (km)	=	0.62 mile
1 hectare (ha)	=	2.47 acres

ABBREVIATIONS AND ACRONYMS

DOF	-	Department of Forestry
FINNIDA	-	Finnish International Development Agency
FRCP	-	Forest Resources Conservation Project
GEF	-	Global Environment Facility
GET	-	Global Environment Trust Fund
ICB	-	International Competitive Bidding
LCB	-	Local Competitive Bidding
MAF	-	Ministry of Agriculture and Forestry
SIDA	-	Swedish International Development Authority
TFAP	-	Tropical Forestry Action Plan

FISCAL YEAR

October 1 - September 30

MEMORANDUM AND RECOMMENDATION OF THE DIRECTOR
COUNTRY DEPARTMENT I
TO THE REGIONAL VICE PRESIDENT, EAST ASIA AND PACIFIC REGION

Country/Sector Background

1. The Lao economy is among the least developed in the world, with an average per capita income of about US\$200 (1990). With a population of about 4.2 million people for a total area of 236,000 sq km, the country has a low population density of 17 persons per sq km, but population is growing at 2.9% per year. About 89% of the people live in some 11,000 rural villages. Up to 75% of the land area is hilly to mountainous, predominantly in the north and east, and due to the shortage of lowlands, is under increasing pressure from forest encroachment.
2. The Forest Resource. Lao PDR is heavily dependent on its natural resource base to provide a livelihood for the bulk of its population and to earn foreign exchange. In 1991, wood products accounted for up to 54% of official exports, while the share of forestry in the Gross Domestic Product was estimated at about 15%. Moreover, some 80% of domestic energy consumption is wood-based, while the forests also provide a host of minor products, foodstuffs and medicine which are also exported. However, the forest cover of Lao PDR is declining steadily. From 1940 to 1981, the national forest area fell from 16 million ha (70% of the country) to 11 million ha (48%), corresponding to an average annual loss of 120,000 ha, or about 1% of total forest area per annum. The Tropical Forestry Action Plan (TFAP) for Lao PDR, which was completed in 1990 with multi-donor support, reported that of the 300,000 ha annually under shifting cultivation, about 100,000 ha involved clearing of forest land while another 100,000 ha were degraded by forest fires. Illicit logging was estimated at about 50% of authorized logging, and unsustainable commercial exploitation using destructive logging practices also significantly contributed to forest degradation. Other factors included the marginalization of forest communities, distortions in pricing and taxation policy which encouraged malfeasance and transfer pricing, and inefficient domestic processing.
3. Forestry Sector Reforms. In the past two years, Government has been developing a forestry reform program. The main features are the improvement of forest inventory and management planning, change of emphasis from forest extraction to forest protection, provision of incentives to resource users for sustainable forest management, re-establishment of central jurisdiction over forest management, and elimination of distortions in resource pricing and taxation. To support this reform program, Government issued in November 1993 Prime Minister's Decree No. 169 on the Management and Use of Forests and Forest Land (the Forestry Decree).
4. Biodiversity in Lao PDR. The country's extensive areas of relatively undisturbed forest contain a rich diversity of ecosystems and species under increasing threat (Annex 3), which make it a high priority country for conservation efforts. The biological resource comprises about 10,000 species of mammals, reptiles, amphibians, birds, freshwater fishes, swallowtail butterflies, and vascular plants, and includes about 1,200 animal species. Government policy on forest and biological conservation is based on the establishment of protected areas and on the application of conservation practices in forest management. The Swedish International Development Authority (SIDA) is supporting Government's protected areas program under a Forest Resources Conservation Project (FRCP), which is moving from planning to implementation by the World Conservation Union (IUCN). A total of 69 potential protected areas have been identified for further field surveys, and management plans are being developed and implemented for selected sites. Priority has been given to areas having original vegetative cover of at least 50,000 ha, considered to be the critical size necessary to prevent species' extinction in the richest habitats (Annex 3, para. 10). The issuance of Prime Minister's Decree No. 164 in October 1993, establishing 18

National Biodiversity Conservation Areas, put under legal protection a total area of 2,825,000 ha, or about 12% of the total area of the country.

Project Objectives

5. The GET-assisted Wildlife and Protected Areas Conservation Project is designed to support the protected area and associated buffer zone development component of the IDA-assisted project. The specific objectives for the GET-assisted project would be to protect biological diversity through human resource development and institutional strengthening, the designation, establishment and management of priority protected areas and protection of associated wildlife, and the planning and implementation of community participatory programs in and around protected areas. The other components of the IDA-assisted project would focus on the implementation of programs for forest inventory and planning, and for sustainable forest management and protection, including the establishment of a Forest Management Fund.

Project Description

6. The proposed five-year GET-assisted project at a total cost of US\$5.2 million would include: (a) protected area system development and management, including buffer zone development; (b) technical assistance and conservation training; (c) environmental monitoring and evaluation; and (d) design and establishment of a Conservation Trust Fund. GET would finance civil works, including offices, housing, small scale agriculture and infrastructure development in the buffer zones, vehicles and equipment, fuel and materials, salaries and allowances, technical assistance and training.

7. Protected Area Development. The project would support the establishment and management of at least four protected areas selected on the basis of criteria such as size, completeness of forest cover, representativeness, regional priorities and degree of threat. They would be selected from six priority sites under Decree 164, including Nakai Plateau/Nam Theun, Phou Xang He, Nam Ma, Phou Xiang Thong, Phou Dene Din and Dong Amphane (Annex 7). The preliminary management plan for the first protected area, Nakai Plateau/Nam Theun, was completed in September 1993. The project would finance surveys and inventories, preparation of management plans, infrastructure development, vehicles and equipment, fuel and materials, and salaries and allowances. GET would finance incremental operating costs on a declining basis.

8. Communities living within or around the selected protected areas would be mobilized to participate in the planning and management of forest resource use and buffer zone development. Their traditional access to forest resources would be protected, while buffer zones would be established around the protected areas. Depending on the opportunities offered by each location, the project would finance activities designed to demonstrate alternative land use and livelihood schemes to replace unsustainable forest exploitation, but would not support resettlement activities. Development activities would include crop, livestock, aquaculture, agro-forestry, and other agriculture and village infrastructure projects. The project would provide US\$1.3 million to finance village development activities. In order to provide for community needs for timber, fuelwood and other non-forest timber products, specific areas would be demarcated as village forest and set aside for community management under long term agreements with the forestry service. The project would support the design and implementation of village agreements, according to the principles of community participation and environmental protection.

9. Technical Assistance and Conservation Training. The project would provide 9 person years of long term external technical assistance for the establishment and management of the protected areas and implementation of the community development programs, and 54 person months of short term assistance for resource inventory, environmental monitoring and evaluation, socio-economic and other environmental studies, and design and establishment of a Conservation Trust Fund. Emphasis would be placed on the recruitment of Non-Government

Organizations (NGOs) for the technical assistance for the community mobilization program.

10. The project would support a major expansion of conservation management training through the development of a training and operations program in protected area management for field staff, upgrading of the in-country training programs at Dong Dok Superior Forestry Technical School, and advanced level training for professional conservation staff at foreign universities. The first two approaches are designed to meet the project's immediate need for field managers with training in ecology and wildlife conservation. In addition, the project would implement grass roots level training in sustainable forest management and conservation (Annex 3, para. 22).

11. Environmental Monitoring and Evaluation. The project would support the design and implementation of an environmental monitoring and evaluation program (Annex 4, paras. 10-13). Short term technical assistance would be provided under the project for the design of the program, which would cover a range of parameters including changes in land use, forest cover, wildlife populations, and socio-economic conditions and socio-cultural aspects of forest communities. The effectiveness of project design and management plans in achieving project objectives would be monitored and evaluated. An annual Consultative Forum will assist in monitoring the project as well, and provide an opportunity for disseminating monitoring results and adjusting project activities (para. 14). The project would allocate and train staff in monitoring and evaluation.

12. Establishment of a Conservation Trust Fund. In order to identify and secure sources of longer term financing for the operation of the protected areas to be established under the project, the project would provide technical assistance to design and establish a Conservation Trust Fund from external funds and contributions from the Forest Management Fund and other sources.

Project Implementation

13. The project would be implemented by the Department of Forestry (DOF), or more specifically, the National Office for Nature Conservation and Watershed Management of DOF under the overall responsibility of the Project Director who would be the Director of Forestry, or one of the two Deputy Directors. Under the new resource management system, this National Office already has national jurisdiction for the implementation of the protected areas program and would post staff to the protected areas. Annual donor coordination meetings would be held to review project progress and related donor activities in the forestry sector. Annual reviews of project progress would provide information for an advisory Consultative Forum (established for the overall Forest Management and Conservation Project), consisting of government officials, and representatives of NGOs, grassroots organizations, and donor agencies, which would monitor project progress.

Project Sustainability

14. The sustainability of the project is dependent on continued Government commitment to the new resource management system, based on the provision of adequate incentives to forest users and effective field capability for regulation and control of forest resource use. In addition to the implementation of the regulatory framework, the project design includes the protection of traditional access of users to the forest resources and limited buffer zone development to reduce unsustainable forest exploitation through forest conservation measures for community and private forest users. Public agencies would be compensated for reduced dependence on forest products from the Forest Management Fund to be constituted and resourced with tax revenue and other sources. This Fund would be managed by DOF and used to fund its activities, including the operation of the protected areas system. The establishment of a Conservation Trust Fund under the GET-assisted project is aimed at securing additional longer term financing for the operation of the protected areas.

Lessons Learned from Previous IDA Operations

15. The first four agricultural projects supported by IDA were implemented under a centrally-planned economy. They were constrained by a weak institutional framework, unclear or inappropriate sectoral policies, and lack of production incentives. For sustainable resource management, a system based on adequate resource planning and management, and on adequate incentives to all resource users needs to be established and sustained. The project is designed to achieve these objectives.

Rationale for GET Funding

16. Among the poorest countries in the world, Lao PDR is the least well-protected country in Asia as it does not yet have a protected areas system, yet it ranks among the richest in the region in biological resources of exceptional and global importance. The richness of its biological resources along with the extensive areas of contiguous forest cover, both within the country and along its borders with its neighbors whose forests are mainly depleted, makes it a high priority country for regional conservation efforts. Moreover, Lao forests are under increasing pressure from a growing population, commercial exploitation and increasing regional demands for timber. If the pace of forest degradation and destruction continues and efforts to conserve biological diversity lag, many high priority areas worthy of protection will be severely impacted before viable conservation measures are established. Due to severe resource constraints and other development priorities, the Lao PDR Government cannot mobilize the resources domestically for conservation of biodiversity, nor can it justify borrowing even on IDA terms for this purpose. GET grant support within the framework of the overall IDA project will assist in its efforts to implement the necessary sector reforms to protect and manage Laos' internationally significant biological heritage.

Environmental Aspects

17. The environmental impact would be positive due to improvements in sustainable resource management and conservation. The strengthening of the resource data base and management planning, the implementation of sustainable forest management and conservation practices, the enforcement of a regulatory system, and the establishment of protected areas would reduce deforestation and the destruction of wildlife habitats, biodiversity, and watershed integrity. Environmentally sound village development activities would assist in reducing unsustainable exploitation of forest resources, and would improve incomes of forest communities, among the poorest people in Lao PDR.

Project Benefits

18. Although not quantified, the benefits of biodiversity conservation from the four protected areas to be established and from sustainable forest management and conservation practices to be implemented throughout the project area are likely to be substantial. If the project is not implemented, pressure on the forest from population growth and forest exploitation is certain to lead to continued and extensive forest degradation, loss of wildlife habitats and further extinction of plant and animal species.

Risks

19. The achievement of the biodiversity conservation objective is subject to risks of delays and inadequate implementation of the regulatory framework, including only partial acceptance of the national program approach by the provincial governments, slow adoption of community mobilization for resource management and conservation, poor application of regulation and control activities, failure to establish and apply the Forest Management Fund appropriately, and administrative weaknesses. The provision of adequate incentives to managers and users of the forest resources for sustainable forest

management and conservation is designed to minimize these risks. For the protected areas, shortage of budgetary funds for longer term recurrent cost financing may affect the sustainability of the system. The establishment of both the Forest Management Fund and the Conservation Trust Fund under the project is aimed at addressing the issue of long-term financing of DOF operations.

Attachments

Washington, D.C.
February 23, 1994

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WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Estimated Costs and Financing Plan
(US\$5.2 million)

	Local	Foreign	Total
<u>Estimated Project Cost /a</u>			
Protected Areas Establishment	0.6	2.0	2.6
Human Resource Development	0.2	0.4	0.6
Technical Assistance	0.0	1.4	1.4
<u>Base Cost</u>	<u>0.8</u>	<u>3.8</u>	<u>4.6</u>
Physical contingencies	0.0	0.0	0.0
Price contingencies	<u>0.1</u>	<u>0.5</u>	<u>0.6</u>
<u>Total Project Cost</u>	<u>0.9</u>	<u>4.3</u>	<u>5.2</u>
<u>Financing Plan</u>			
Government	0.2	0.0	0.2
GET	0.7	4.3	5.0
<u>Total</u>	<u>0.9</u>	<u>4.3</u>	<u>5.2 /b</u>

/a Excluding taxes and duties.

/b Figures have been rounded.

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Procurement
(US\$ million)

Project Element	Procurement Method				Total Costs
	ICB	LCB	Other	NGF	
1. Civil Works	-	0.4	1.0	-	1.4
	-	(0.4)	(1.0)	-	(1.4)
2. Vehicles and Equipment	0.8	0.3	-	-	1.1
	(0.8)	(0.3)	-	-	(1.1)
3. Fuel and Materials	-	0.2	-	-	0.2
	-	(0.2)	-	-	(0.2)
4. Salaries and Allowances	-	-	0.3	-	0.3
	-	-	(0.1)	-	(0.1)
5. Human Resource Development	-	-	0.6	-	0.6
	-	-	(0.6)	-	(0.6)
6. Technical Assistance	1.6	-	-	-	1.6
	(1.6)	-	-	-	(1.6)
TOTAL	2.4	0.9	1.9	-	5.2
(GET-)	(2.4)	(0.9)	(1.7)	-	(5.0)

Other = Not subject to procurement, or by direct negotiation

NGF = Non GET-financed; figures in parentheses are the amounts financed by GET

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Disbursements

Category of Expenditure	<u>Amount</u> (US\$ million)	<u>% of Expenditures to</u> be Financed
1. Civil Works	1.20	100%
2. Vehicles and Equipment	1.10	100% of foreign expenditures for directly imported items, 100% of local expenditures (ex-factory cost) and 80% of local expenditures for other items procured locally.
3. Fuel and Materials	0.20	100% up to September 30, 1997, and 50% thereafter
4. Salaries and Allowances	0.10	100% up to September 30, 1997, and 50% thereafter
5. Human Resource Development	0.50	100%
6. Technical Assistance	1.40	100%
7. Unallocated	0.50	---
<u>TOTAL</u>	<u>5.00</u>	

Estimated GET Disbursements

<u>FY</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>
	----- (US\$ million) -----				
Annual	0.5	0.6	1.7	0.9	1.3
Cumulative	0.5	1.1	2.8	3.7	5.0

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WILDLIFE AND PROTECTED AREA CONSERVATION PROJECT

Timetable of Key Project Processing Events

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- (a) Time taken to prepare the project: 30 months
- (b) Prepared by: Government with IDA/GEF Assistance
- (c) First IDA/GEF mission: June 1990
- (d) Appraisal mission departure: 11/91
- (e) Negotiations: 02/93; 01/94
- (f) Planned date of effectiveness: 07/94
- (g) List of relevant PCRs and PPARs:

<u>Credit/Loan No.</u>	<u>Project</u>	<u>PCR/PPAR No. (Date)</u>
760-LA	Agricultural Rehabilitation and Development Project	PCR No. 7250 (May 16, 1988)
924-LA	Second Agricultural Rehabilitation and Development Project	PPAR NO. 90-1007 (July 27, 1990)
1021-LA	Third Agricultural Rehabilitation and Development Project	PCR No. 9858 (August 26, 1991)
1395-LA	Agricultural Production Support Project	PCR No. 9857 (August 22, 1991)

This report is based on the findings of an IDA appraisal mission which visited Lao PDR in November 1991, and updated by IDA/FINNIDA post-appraisal missions in April and December 1992, respectively. The appraisal mission comprised Messrs. Y. Wong (Mission Leader), J. Blakeney (Forestry Specialist), and D. Hulse (Forest Conservation Specialist, Consultant). Messrs. E. Hurtig (Program Officer), H. Rissanen (Forestry Adviser), and T. Oksanen (Forestry Adviser) of FINNIDA, and Mr. R. Salter (Forest Conservation Specialist, Consultant) participated in the post-appraisal missions. Peer reviewers were Messrs. H. Wagner (AGRNR) and C. Rees (ENVLW). The document was cleared by Ms. Pamela Cox (Chief, EA1AN) and Mr. C.E. Madavo (Director, EA1).

TECHNICAL ANNEXES

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WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Forest Management and Conservation Project

1. The overall IDA-assisted Forest Management and Conservation Project, of which the GET-assisted Wildlife and Protected Areas Conservation Project, is a component, aims at assisting Government to implement a new resource management system in Lao PDR to better achieve the sustainable management and conservation of the country's forest resources. The integrated project would support efforts to complete ongoing forestry sector reforms, develop the Department of Forestry's operational capability, and implement improved programs in forest inventory and planning, management and protection. Project activities in production forest and its buffer zone village forest areas would be assisted by IDA, while the establishment of protected areas for biodiversity conservation and buffer zone development would be funded by GET. The Finnish International Development Agency (FINNIDA) would fund technical assistance and human resource development for production and village forest areas, and GET for the protected areas. The overall project is described below.

2. The project would cover an estimated total forest area of about 500,000 ha, to be zoned and delineated into village, protection, conservation and production forests, and placed under improved forest management and protection. The project areas are located mostly in the central and southern regions, which still have a large proportion of relatively intact forest resources and which include several proposed protected areas for biodiversity conservation.

3. In particular, the five-year project would support:

- (a) implementation of an appropriate institutional framework and formulation of the necessary regulatory framework for the forestry sector;
- (b) field implementation of three programs: (i) forest resource inventory and planning; (ii) sustainable forest management and protection; and (iii) establishment and management of forest protected areas;
- (c) human resource development; and
- (d) technical assistance.

Detailed Features

4. Implementation of Forestry Policy Reforms. An important objective of the project would be to assist Government in implementing ongoing reforms of the forestry sector. Institutional reform, particularly of the Department of Forestry, is underway. However, the legal framework to underpin the reforms, which emphasize resource use sustainability, the provision of incentives, including the protection of traditional access rights to resource users for sustainable management, establishment of a unified structure and national jurisdiction for resource management, and land use zoning, has only just been established through issuance of the Forestry Decree. Government recognizes that the Decree is only an interim

arrangement to enable the project to commence and operate, and will need to be replaced by the necessary land and forest laws as experience is gained from its performance.

5. The project would support, through the Decree, the establishment of an incentive system for sustainable resource use. The protection of traditional access to forest land by users in areas traditionally controlled by the village would be a significant incentive for proper resource use. While providing protection from increasing uncontrolled excision by outsiders, it would reduce the accelerated depletion of forest resources as communities would be required to engage in improved management practices under community agreements. Another incentive would be the village development schemes to be supported under the project as part of the community agreements. It aims at replacing unsustainable forest resource use by more stable practices, such as permanent agriculture, agro-forestry and forest plantation development. Incentives for DOF and the provincial Governments would be the provision of adequate levels of operating funds from the Forest Management Fund to be established from resource taxes, which would enable them to carry out their mandate more effectively. The establishment of border parity pricing for the domestic and the export markets would be an incentive to export valuable logs rather than to subject them to inefficient domestic processing. Finally, the implementation of forest management contracts, including payment for sustained yield and conservation practices, would be an incentive to sustainable forest management, while the award of these contracts by competitive bidding would maximize capture of rents by Government.

6. Field Programs Implementation. The project would establish two Project Offices in Vientiane and Savannakhet to coordinate and supervise the implementation of project activities in forest inventory, planning, management and protection in the central and southern areas of the country. These would be established by upgrading and strengthening the present forestry services of these two provinces. Each project office would consist of two units: (a) the Inventory and Planning Unit, and (b) the Management and Protection Unit, to implement programs in these areas. The establishment of protected areas would be implemented directly from the National Office of Nature Conservation in Vientiane.

7. The forest inventory and management planning program would be implemented by the Inventory and Planning Unit, which would be built up from the existing field staff and facilities of the National Office of Inventory and Planning in Vientiane and Savannakhet. As needed, additional numbers of staff would be assigned to the project by DOF from the provincial and district forest services in the project area. Some minor expansion of physical facilities would be supported under the project. The Unit would have two sections, one for forest inventory and the other for forest management planning. Both the inventory and the forest management planning sections would include five field survey teams, consisting of a leader, a technician and four laborers. IDA would fund civil works, aerial photography, vehicles, equipment, materials, development costs and a portion of the recurrent operating costs for the project offices, while FINNIDA would support external technical assistance and human resource development under parallel cofinancing arrangements.

8. The main task of the Unit would be to carry out land use and forest resource zoning and forest inventory, and prepare management plans for a designated

forest area.^{1/} The sequence of actions would include: (i) map delineation of areas; (ii) demarcation and zoning of planning areas, together with village communities; and (iii) production of management plans for sustainable development of production forests, and assisting village representatives to prepare sustainable development plans for villages located within or bordering the production forests. Depending on land use practices, management plans for production forest areas (or ranges), covering a total area of about 300,000 ha, would specify management and conservation requirements, annual allowable cuts, limits on clear-cutting, measures for riparian and watershed protection, appropriate silvicultural practices, and other post-harvest requirements. Training and operational guidance on the use of the management plans would be provided to users, and close supervision would be provided by the National Office for Forest Inventory and Planning.

9. The management and protection program would include two sub-programs: (a) village forest development, through provincial and district forest services; and (b) forest regulation and control, in production and protection forest areas.

10. The village forestry development sub-program is aimed at giving communities living in or near protected and production forest areas the necessary incentives and opportunities to participate in the improvement of natural resource management. In addition to the protection of traditional access of users to forest resources, buffer zones around production forest and protected areas would be established. Depending on the opportunities offered by each location, the project would finance activities designed to demonstrate alternative land use and livelihood schemes to replace unsustainable forest exploitation. The project would provide a total amount of US\$4.5 million of IDA funds for village development schemes. Community mobilization approaches are still being tested by Government and aid agencies with encouraging results. Community organizers (COs), located at province and district level, would be trained to act as catalysts in the process of mobilizing local communities to identify specific needs in relation to the availability of funds. Much of the initial identification would take place during the village study and land use planning process, while the CO may continue a longer involvement with the village after the land use plan has been completed, in order to carry identified projects to completion. Local village representatives who were identified during the village study and land use planning process would continue to work with the CO on these projects. Initial information regarding the new resource management system would be presented to the communities by the district forest technicians and COs during the land use planning process, additional information would be provided over time.

11. An agreement between the village elected authority on behalf of the community, and DOF on behalf of the Government, would be developed with the active participation of all sectors of the community as mobilized by the project forestry staff and COs. It would be based on land use allocation and forest management plans

^{1/} The Forestry Decree's Article 11 proposes the zoning of five forest categories: (i) protection forests, for protection of watershed catchment areas; (ii) conservation forests, (protected areas) worthy of conserving for biological diversity or other subjects of environmental, scientific or cultural value; (iii) production forests for sustainable supply of timber and other non wood products; (iv) rehabilitation forests, for regeneration into production or other forest types; and (v) degraded forests, which are no longer capable of yielding forest products but can be alienated for productive purposes, such as agriculture.

prepared by the community assisted by these project office staff, and compliance would be monitored by the community as well as by regulation and control staff at project office and district level. These agreements would include enough land and would protect the community's rights of access to it to satisfy local needs for construction and commercial timber, fuelwood, and other non-wood forest products in specific forest areas on a sustainable basis.

12. The forest management and protection sub-program would consist of regulation and control of forestry operations for both production and protection forest areas. Project staff would provide support to DOF's forestry police system which is to be established at central and local level to enforce forestry regulations^{2/}. Regulatory and control functions would include a combination of permanent and mobile surveillance of forest management, logging, transport, handling, grading and scaling, processing, and trading operations. Mobile surveillance would cover log supply and trading routes as an important back-up for operations audits and permanent surveillance. The project would provide technical assistance, training, vehicles, equipment, materials, and funds for field operations.

13. This sub-program would also support, under IDA financing, forest conservation activities outside the protected area system (para 2.15), including identifying environmentally sensitive areas and placing them under protection as part of the formal agreements with communities. These areas, which would not be subject to Government gazettelement, would include corridors of forest along streams, steep slopes or biologically rich areas with particular features, to be excluded from logging and conversion to agriculture. Conservation practices would be designed in management plans to minimize damage to residual forest and soil in logging and road construction areas and to stimulate forest regrowth in silvicultural activities.

14. The protected areas program under GET funding would support the establishment and management of four protected areas, environmental monitoring and evaluation, the design and establishment of a Conservation Trust Fund, and technical assistance and training. The plan for the first site, Nakai/Nam Theun, was completed in September 1993 and is being discussed with Khammouane province and district authorities. The remaining three sites would be selected from the list in Table 1 below as additional inventory data become available during 1993-94. These sites are included in the list of 18 National Biodiversity Conservation Areas established under Decree No. 164. The management system would be described in preliminary management plans to be prepared under FRCP. Staff of the National Office for Nature Conservation and Watershed Management assigned to the project would, with technical support provided by GET, develop these plans further through detailed field surveys and consultations with local communities. GET would provide an amount of US\$5.0 million for the establishment and management of the protected areas, survey and inventory, ecological studies, management planning, civil works, equipment and materials, including an amount of US\$1.3 million to be allocated as a grant to community development activities (para. 2.11) in the buffer zones of the protected areas.

^{2/} Ministerial Decree Number 728, October 4, 1991, Jurisdiction of the Forestry Police, provides for the establishment of a national service of forest police that are responsible for control and policing of forest industry operations.

15. Environmental monitoring and evaluation would cover a range of key parameters for environmental and socio-cultural change. It would be an integral part of monitoring and evaluation for the whole project (para. 3.10), and about the fourth year of project implementation, the effectiveness of project design and management plans for the protected areas in achieving project objectives would be evaluated. In order to sustain conservation management, GET would provide funds for external technical assistance to design and establish a Conservation Trust Fund. This fund would provide longer term funding for the network of protected areas, community based mobilization activities, and conservation training. Human resource development and technical assistance activities under GET funding are presented in paras. 2.18, 2.19 and 2.21.

16. Human Resource Development. The IDA-assisted project would support, under FINNIDA financing, training programs to assist the process of transformation of the forestry service and to upgrade skills of forestry staff for the implementation of the various field programs. Training would cover both forest production and protection management, including wildlife and protected area management, and emphasize on-the-job training as well as courses to be held in existing training institutions. The training programs would be implemented through the project offices and would fully integrate with SIDA-supported training activities, including short courses in specialist subjects and in English which are being conducted at the Forestry Training Office at Houei Nhang near Vientiane for the central and northern provinces, and at Savannakhet or Xeponé in the south.

Technical Assistance

17. Long term technical assistance for the management of the IDA-assisted project for offices, silviculture, regulation and control, strategic planning, community forestry, harvesting control, and training would amount to 26 person years. Short term technical assistance, mainly in the fields of management and operational planning, harvesting, silviculture, village forestry, forestry regulation, inventory and design and other technical areas as required, is estimated at 60 person months. Both these technical assistance inputs would be financed under a grant from FINNIDA.

LAO PDR

WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

New Resource Management System

1. The project aims at establishing a new national resource management system that directly addresses the causes of deforestation and is itself sustainable and replicable. The system is built around the following elements:

- (a) land use and forest resource zoning, based on the forest management areas as the core unit of forest management throughout the country;
- (b) reorganization of the Department of Forestry to implement central jurisdiction and establish a unified structure for forest management;
- (c) provision of incentives, including protection of traditional access of users to forest resources;
- (d) development of an operational capacity for the administration and delivery of the six national forestry programs, including rural development activities in forest areas; and
- (e) reform of the concession system of forest management, and of the marketing, pricing and taxation of logs and wood products.

Incentives Framework

2. One of the core elements of the new resource management system is the reliance on an incentives framework as a means of managing resource use in a sustainable manner. Incentives would apply to all resource users and regulators: communities, contractors, provincial governments and the national Department.

3. Communities would be given incentives through the protection of their rights to improve management of the forests and agricultural land in areas under their traditional control within a management area. These areas would be excised from the forest management areas as a first step in the zoning process and set aside for each community's exclusive long term use. The main incentive would include the provision by Government of a formal and enforceable charter to use these land and forest resources in accordance with a defined management plan. Traditional access of local communities to forest resources would be protected against outside encroachment which, in most cases, would trigger accelerated deforestation by impinging on areas traditionally under their control. The purpose of the management agreement is to make communities accountable for improved management practices in exchange for this protection. This approach has a major element of persuasion rather than control by Government, as its key feature. The second incentive would be grant financing, under the agreement, of village development activities aimed at income generation and enhancement of village lifestyle to reduce unsustainable dependence on forest resources. The design of these activities would be a fully participative process between the local communities and the project agency.

4. Contractors. Present Government policy is to favor conservation and sustainable management rather than maximizing log production, by changing the terms and conditions of concession management and by improving the regulation and control of forest management to ensure compliance. The incentive for contractors

would be to receive payment based on performance of sustainable yield and post-harvest management in accordance with plans, or face penalties. In the medium term the Government plans to fully replace the concession system by introducing a system of contract logging, state ownership of logs and an auction system.

5. Provincial Governments. The transformation of the national system of economic and fiscal management under Decrees 68 and 69 together with the privatization of state enterprises proposed under Decree 70 means that provincial governments will have no further direct dependence on provincial forest enterprises and consequent deforestation activities as a source of revenue. Under the new system, provincial governments would rely on a system of special purpose grants from the national Government for budget purposes. This would reduce dependence on the forest resource and pressure on forest destruction.

6. The Department of Forestry. DOF would require financial and institutional arrangements that would ensure effective production and conservation management to be sustained. Under the Forestry Decree, a Forest Management Fund would be established from tax revenues and other sources, and retained by DOF to finance its operations at all levels. This will provide a direct incentive to manage resource and conservation programs effectively.

Reorganization of DOF

7. The new organizational structure of DOF reflects its national jurisdiction on management of the country's national resources by the absorption of provincial and district forestry services within its structure. DOF's main task would be to implement six core national programs.

8. The main elements of the new organization are:

- (a) establishment of clear and direct lines of command from Department to province, district and village;
- (b) rationalization of Department activities, emphasizing policy and strategy development and overall supervision and monitoring;
- (c) decentralization of staff;
- (d) establishment of an independent national monitoring unit; and
- (e) reform of the concession system.

9. Director's Office. The Department would, as at present, be headed by a Director in charge of policy development, legislation, overall planning, budgeting, supervision, monitoring, and personnel and payroll. Detailed planning and supervision would be handled by a number of national technical offices, organized along functional lines, as follows:

- (a) Shifting Cultivation Programs
- (b) N.O. for Management and Protection
- (c) N.O. for Inventory and Planning
- (d) N.O. for Nature Conservation and Watershed Management
- (e) Forest Plantation Programs
- (f) Forestry Industry Programs

10. Technical Offices. The Shifting Cultivation Programs Office would execute upland development projects and programs, with emphasis on sustainable upland farming systems and the stabilization of shifting cultivation. The N.O. for Management and Protection would be in charge of field implementation of

regulation and control programs, in close liaison with the Forestry Police, and village forestry programs. The N.O. for Inventory and Planning would implement the National Forest Inventory and prepare forest management plans for resource management areas and protected areas. The Forest Plantation Programs Office would undertake silviculture research and extension, while the N.O. for Nature Conservation and Watershed Management would be responsible for monitoring of the environment and wildlife and for preparing plans for the management of protected areas. The Forestry Training Office would supervise the Forestry College at Dong Dok, the three Forest Technician Schools and the Vientiane Forestry Training Center, and arrange training courses in selected subjects as requested by the other offices of the Department.

Forest Management Areas

11. The field implementation of the national programs would be through Forest Management Areas which would be the planning units of the new natural resource management system. The management area would be the smallest administrative unit of forest land for forest management and control. It would vary between 20,000 and 50,000 ha, being larger in areas of low population pressure, poor access, and predominance of protection and conservation forest in which case several FMAs could be combined. While several FMAs could be found within one district, they should preferably have natural boundaries, such as those of a sub watershed. The boundaries should be aligned with existing district and customary village boundaries to simplify the determination of management responsibilities. The delineation of a first group of 50 FMAs by the Forest Inventory Division is well-advanced and is expected to be completed shortly for the start of detailed zoning of priority management areas.

Program Implementation Structure

12. Two project offices would be established in Vientiane and Savannakhet to cover the central and southern regions, respectively, and coordinate the implementation of project activities. The office in Vientiane would serve the provinces of Vientiane, Borikhamsay and Khammouane, while that in Savannakhet the provinces of Savannakhet, Champassak, Saravane and Attopeu. At a latter stage of project implementation, a third project office would be established at an appropriate location in the north to cover the provinces of Oudomxay, Bokeo and Sayaboury. The protected areas component, however, would be implemented directly from Vientiane by the National Office for Nature Conservation and Watershed Management. The main responsibilities of the offices would include:

- (a) implementing the forest management area system;
- (b) supervising preparation of land use and forest management plans, and demarcation of forest land and protected areas;
- (c) development and application of methods and procedures for forest inventory and management planning, silviculture, reforestation, regulation and control of harvesting operations and community based users;
- (d) development of a protected area management system;
- (e) provision of staff training; and
- (f) establishment and operation of a forest management information system and an independent monitoring and control unit under the Department.

LAO PDR

WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Protected Areas Establishment and Management

1. A primary project objective is to promote biodiversity conservation throughout the project area through a new system of conservation management to be introduced and implemented in the Forest Management Areas to be set up under the project. While most FMAs would include an integrated array of activities including production forestry, watershed protection and various community land uses, those in biologically rich areas would be included wholly or in part within the protected area system now being planned by FRCP. Project activities for these FMAs would include formal protected area establishment and management, and buffer zone development and would be funded separately by GEF under a Wildlife and Protected Areas Conservation Project, which is an integral component of the Forest Management and Conservation Project to be funded by IDA, FINNIDA and GOL. The four protected areas to be established under the project would be put under protection by Government decree. The National Office of Nature Conservation and Watershed Management at DOF headquarters in Vientiane would be responsible for implementing this component together with local staff.

2. Biodiversity conservation objectives would also be achieved under the project in areas designated for production or community forestry through proper zoning to ensure that biologically rich areas are designated for protection, through development and implementation of appropriate controls on harvesting methods, and through support to local communities in community forestry and buffer zone development. Since these activities would be fully integrated with other project activities in production forest, it would difficult to isolate them for GET funding and they would, therefore, be funded by IDA.

3. The Protected Areas component would have the following activities:

- (a) Biodiversity conservation, through the design and management of legally established protected areas and associated buffer zones;
- (b) Community participation in integrated forest management, including community mobilization programs aimed at giving local people living within or adjacent to the protected areas the necessary incentives and opportunities for sustainable utilization of the forest (community participation under the project is described in Annex 4);
- (c) Institutional development, including the creation and implementation of an environmental monitoring and evaluation program, and establishment of a secure long-term financing mechanism to sustain operations of the conservation management activities described in this component; and
- (d) Conservation training, focusing on on-the-job training in conservation management, limited specialized training for key DOF personnel in overseas graduate institutions to enhance professional skills in conservation management and environmental monitoring, and grassroots

training of forest communities in conservation management (project activities in conservation training are described in paras. 17-22).

Background

4. Lao PDR forms part of four distinct biogeographic subunits: Annam in mountainous eastern Laos; Central Indochina in western, central and southern Laos along the plains of the Mekong River; Northern Indochina in upland northern Laos; and Indochina Transition Zone in Phongsaly Province. Each is characterized by specific flora and fauna, some of which are endemic to the biogeographic region. The Lao terrain varies from flat plains along the Mekong River, which flows nearly 500 km along the western boundary of the country, to mountain peaks of 2,700 m in height along the eastern border with Vietnam. The biological isolation created by this positioning between rugged mountains and the wide Mekong River has resulted in a variety of endemic species.

5. With one of the highest proportions (47%) of relatively intact forest in Asia, Lao PDR also ranks as one of the most biologically rich countries in the Indo-Malayan and Oceanic realms and compares favorably in species diversity with other nations in the region. China and India, which are many times larger in size than Lao PDR, have total numbers of mammal species of 394 and 350, respectively, as compared to 186 resident mammal species for Lao PDR. In terms of birds, Lao PDR with 623 species outranks biologically rich Papua New Guinea (592), Vietnam (586), and the Philippines (541). The richness of the biological resources along with the extensive contiguous forest cover makes Lao PDR a high priority country for conservation efforts.

6. The relatively high percentage of primary and secondary forest cover remaining in Lao PDR should not be viewed as justification for a relaxed timetable for conservation action. Forest cover varies greatly among regions, falling below 20% in some parts of the north, but remaining around 50% in the mountainous border region with Vietnam and in the lightly populated southern border region. However, these forests are under increasing pressure from commercial exploitation, growing population and increased regional demand for Lao wood products as a result of the ban on logging in Thailand. If the pace of forest degradation continues and efforts to conserve biological diversity are not stepped up, many high priority sites worthy of protection will be severely impacted before viable conservation measures can be established.

7. Development of effective conservation measures within Lao PDR is still at a very early stage. Major impediments to conservation management are the lack of conservation legislation, the dependence of the national budget and export revenues on forest revenues, weak institutional capacity and lack of local expertise in conservation management. Few government officials have received tertiary level training in biology and natural resource management, and the number of graduate degree holders in the conservation sciences in the country is less than 10.

Biodiversity Conservation

8. Recognizing the need to manage its forests sustainably and at the same time to set aside representative areas for conservation, Government has issued Decree No. 164 to provide the legal basis for establishing a protected area system. External aid agencies such as SIDA and conservation groups, such as IUCN and WWF are already involved in conservation activities in Lao PDR through the

Forest Resources Conservation Project (FRCP) of the Lao-Swedish Forestry Program being implemented by IUCN, and the Kouprey Action Plan and the Asian Elephant Action Plan developed and being supported by IUCN/WWF. Decree No. 164 has brought about 2.8 million hectares (slightly over 12% of the total land area) under legal protection. FRCP has identified 69 potential protected areas of which 29 have already undergone preliminary survey, two (totalling 200,800 ha) are under management plan implementation, and eight are designated for management planning during 1991-95. Taken together the 8 forest areas included or proposed for immediate inclusion in the protected area system cover 4.9% of the land area of Laos, or nearly half of Government's target.

9. The project would support the establishment of at least four protected areas. No new institutions or concepts would be introduced under the project, as it would complement and operate under the FRCP planning framework which has developed a strategy for planning and establishment of a representative national protected area system, including identification of potential sites, evaluation and selection of sites to be included, and development of preliminary management plans for individual areas. These plans provide a biophysical description of the area, and set out objectives, a management strategy, activities and anticipated outputs, which are further elaborated in annual work plans and area-specific development plans. Following agreement on the final selection of protected areas, the project would use the preliminary management plans prepared by FRCP for further elaboration and implementation. Under its present program, FRCP will prepare eight protected area management plans and implement four of them. The other four, or additional areas yet to be surveyed, will be available for implementation under the proposed project:

Plan Preparation and Implementation by FRCP (1991-1995)

<u>Name</u>	<u>Province</u>	<u>Area (ha)</u>
Xe Piane	Champassak	146,000
Xe Bang Nouane	Saravane	146,400
Nam Poui	Sayaboury	170,000
Nam Kading	Borikhamsay	169,200

Probable Sites for Plan Preparation by FRCP (1991-1995)

Nam Ma	Luang Namtha	144,800
Nakai Plateau/Nam Theun	Khammouane	405,600
Phou Xang He	Savannakhet	69,200
Phou Xiang Thong	Saravane	116,400
Dong Amphane	Attopeu	163,000
Phou Dene Din	Phongsaly	222,900

10. Subject to confirmation from further field reconnaissance surveys, at least four of the last six sites described above will be subject to preliminary management plan preparation by FRCP and to elaboration and implementation under the project. The criteria used for protected area site selection under FRCP are the following:

- (a) area of at least 50,000 hectares,^{3/} and preferably over 100,000 ha;
- (b) biogeographic representation;
- (c) regional priorities (based on McKinnon and McKinnon, 1986 classification of priority habitats for protection in the Indo-Malayan Realm); and
- (d) degree of threat.

11. In addition to the above criteria, consideration would be given to areas with potential of becoming transnational protected areas and for those that contain important populations of flagship species.

12. Preliminary management plans prepared by FRCP would be further developed under the project by a unit of the National Office for Nature Conservation and Watershed Management in Vientiane to be supported under the project, with technical input and guidance from external technical assistance. Rapid ecological surveys for vegetation and habitat evaluation, key species determination and population dynamics and other relevant parameters would precede plan elaboration. This is expected to be sub-contracted to an appropriate research institution or university.

13. As biodiversity cannot be fully maintained only by localized protection of selected areas, another objective (under IDA financing) is to introduce biodiversity conservation measures into all types of forest management activities. The management regimes to be applied to forest lands outside of the formal protected area system will probably significantly determine the extent to which biological diversity can be adequately conserved in Lao PDR. Conservation measures will be included at planning, when zoning work identifies areas of protection forest required for the maintenance of watershed integrity and values, and areas of particular biological interest or sensitivity. These areas will be demarcated in the land use plans for each FMA and management measures for these areas specified in the forest management plans. These would include controls on hunting practices, tree felling, use of forest products and fire, and other nature protection measures, for which provision is made in the Forestry Land Use Management Decree. Field measures would include information campaigns aimed at the rural population and logging personnel, design and implementation of measures to minimize damage to residual forest and soil in logging and road construction work, and silvicultural work to stimulate forest regrowth.

14. The project would provide conservation management expertise, physical facilities, vehicles and equipment, fuel and materials, and training. It would support flora and fauna survey work, including the establishment of a herbarium, and protected area establishment and buffer zone development activities. Costs per protected area will vary depending upon the management system designated for each particular protected area. The specific management system to be used would be based on internationally accepted criteria as described by IUCN's Commission on National Parks and Protected Areas and specific plans of action will be determined using data collected during field surveys, inventories, and from community inputs. The project would support village development activities in buffer zone areas.

^{3/} Minimum size considered to be necessary to prevent species extinctions in the richest habitats (MacKinnon, J. and MacKinnon, K., Review of the Protected Areas System of the Indo-Malayan Realm, IUCN, 1986).

Institutional Development

15. Environmental Monitoring and Evaluation. The National Office for Nature Conservation would be responsible for administering and monitoring environmental conservation in Lao PDR. The absence of an ecological monitoring unit in DOF has resulted in poor monitoring of environmental impacts, especially from logging. An environmental monitoring capability of 6 staff in that office would be established by financing one technical assistance specialist for a total period of one year. The staff would be appointed by DOF and trained by the project in specialized fields of conservation biology, tropical forest biology, natural forest management, and sustainable forestry practices. All staff would require training in monitoring and evaluation techniques. The unit would concentrate on monitoring and evaluation of forestry operations, agriculture activities, natural forest management and biodiversity conservation, and sustainable use of natural resources in FMAs.

16. Conservation Trust Fund. Ongoing operating funds for all DOF activities would be supplemented from the Forest Management Fund to be established under the IDA-assisted project. In addition, the project would provide short technical assistance to design and establish a Conservation Trust Fund which would provide earnings specifically for the funding of recurrent costs of protected areas management and operation.

Conservation Training

17. The project would support a major expansion of conservation management training through the development of a training and operations program in protected area management for field staff and training of forest communities in sustainable forest management and conservation. The approach is based on meeting the project's immediate need for field managers with training in ecology and wildlife conservation. At the beginning of the project, emphasis would be placed on on-the-job training of provincial and district level staff, due to the need to keep these staff in place to get the project started and to benefit from their intimate knowledge of local forest areas and conditions.

18. The Lao Protected Area Management Training Program would provide trainees with a basic understanding of the principles of conservation, protected area and wildlife management. The program would consist of three modules:

- (a) Preparation Module at the Dong Dok Forestry School. The module would offer trainees the opportunity to update the knowledge required to subsequently follow applied courses in protected area and wildlife management. Trainees from a variety of educational and professional backgrounds would be able to enter this training. Candidates who successfully complete the preparatory module would be able to continue with the intensive course or may be considered for long term training.
- (b) Intensive Conservation Management Module at Kasetsart University, Bangkok (or some other appropriate regional university). This module would consist of a six month long applied course in protected area and wildlife management, designed with the input of TA consultants.

- (c) Field Training Module. This third module would be carried out in a forest reserve such as the Nong Lam-Dong Natat Reserve and would consist of an eight-week long field training course in wildlife survey and inventory techniques. Upon completion, the students would receive a certificate and be posted in the field.
19. Graduate and Post-Graduate Training. The project would provide for four fellowships for undergraduate and graduate level training in conservation management and related areas at a university in the region or elsewhere abroad.
20. Field Training for Protected Area Staff. Field training for staff working in the protected areas would be provided through specialized short term course in protected area management and subsequent field training in the areas where staff have been assigned. Provision has been made for 410 person months of training under this program.
21. Study Tours. Provision has been made for 50 person months of study tours to protected areas and conservation management programs in the region.
22. Community Training. The new system of resource management to be introduced under the project implies radical changes in the roles, rights and authority of Government and the private sector on land and forest resource access and use. To assure effective implementation of the new management system, a public awareness campaign on the objectives, mechanisms and legal aspects of the new system will need to be carried out. As part of the project activities, project staff will be trained by the Ministry of Justice on the new legal framework and implementation of the regulations. As part of the community mobilization process for resource management, trained staff will educate villagers in the project area regarding the new resource management system, and particularly how the system will affect their rights to use of forest resources. Aspects of land tenure, zoning, legal framework and sustainable forest resource management will also be explained. Forestry staff should emphasize that the Land Use Plans which will be developed in the community mobilization process are based on this new legal framework, and should improve the security of village access to traditional forest resources.

WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Project Implementation

Project Organization and Staffing

1. The project would be implemented directly from Department of Forestry headquarters in Vientiane by the National Office for Nature Conservation and Watershed Management, under the overall coordination of the Project Director for the Forest Management and Conservation Project, but would rely heavily on provincial and district level forestry service staff for field operations. Each protected area would operate as a single management unit headed by a manager, two deputy managers, three to five park rangers (each stationed at a ranger station), and 20-30 park guards. The manager would be responsible for overall administration and management. One deputy manager would handle resource management, research and monitoring, and the other deputy manager community development, public liaison and training.
2. Forestry service staff at provincial and district would provide the main body of staff for each protected area, complemented by a small number of key personnel from headquarters. Local forestry staff from the protected areas and regionally-recruited forestry staff would be trained under the guidance of external technical assistance. This emphasis on local staff would enhance the retention of protected area staff after training and project completion.

Infrastructure Development

3. Physical facilities at each protected area would include, as needed, a headquarters building, a laboratory, guest quarters, and housing with water and electricity supply for about 8-10 staff families, 3-5 ranger stations at important sites within the protected area, and basic internal road and trail networks. The facilities would be equipped with office, radio and other telecommunications equipment.

Field Operations

4. Protected Area Activities. These would include resource inventory and management planning, and protected area development and management. As part of the land use planning and forest zoning of resource management areas, the preliminary management plans to be prepared under FRCP would be further elaborated through additional resource surveys and inventories. The project would provide vehicles, equipment, fuel and materials, and finance incremental operating costs on a declining basis.
5. Community Based Resource Management. The establishment of buffer zones, which would also be subject to conservation management, outside the protected areas and in the rest of the project area related to forest management activities, is a central element of conservation strategy. Communities in these buffer zones and also inside the protected areas would be fully involved in all aspects of sustainable forest management and conservation. New immigration into protected areas would be restricted, leaving those areas to those communities

that are already established. Communities in buffer zones will, however, continue to have access to specific village forest areas under agreements with DOF.

6. The objective is to involve communities in forest areas in resource conservation by giving them the main responsibility for management of forest protection and village forestry activities. The management objectives, activities, and procedures for each area would be specified in Land Use Management Plans. The basic principle of the system is the contracting of agreements, based on Land Use and Forest Management Plans, with communities concerned. Under these agreements, the traditional access of villages to forest resources is protected, and in return the villages undertake to refrain from destructive activities such as uncontrolled use of fires, protect defined areas and report on violations by outsiders, and manage and make use of assigned areas of production forest and buffer zones on a sustainable basis. The long term objective is to slow down encroachment into the high forest and improve living conditions in the villages. Degraded forests would be protected to allow the natural regeneration of vegetative cover.

7. The forest technicians attached to the district would carry out preliminary forest and land use survey for the planned areas and a preliminary resource valuation. They would then prepare a preliminary consensus Land Use Plan together with the local community, which would be reviewed by the district and province to ensure balanced land use. The Land Use Plan would set aside areas for long fallow shifting cultivation. Final discussion with communities regarding their management responsibilities would lead to formulation of land use contracts between DOF and communities and/or individuals within the planning area. These contracts would specify the rights and responsibilities of the land user. Based on the Land Use Plan, a Forest Management Plan would be prepared, outlining management objectives for each parcel of land and the scope of community development works. As different types of forest and land use would occur within the same area, the management plan may include recommended land uses for production of timber and other commercial forest products, supply of forest products needed by villagers, shifting cultivation, permanent agriculture and grazing, conservation, or protection and maintenance of forest cover in watershed management areas.

8. A key element of the project is to promote better alternatives of livelihood to unsustainable shifting cultivation. The project would provide funds on a grant basis to village communities for agriculture (small scale irrigation, etc.) development to reduce dependence on unsustainable resource use. Local communities would be fully involved in planning, as part of the Land Use Plan process, under the leadership of COs and with the active cooperation of NGOs to be identified at the start of project implementation. The village development activities would be coordinated with other rural development projects. The nature and scope of civil works would be detailed in specific agreements between the village administrative committees/districts and DOF. The value of each agreement per village would depend upon the size of the communities and the nature of the works. Each village would provide volunteer labor to carry out the works.

9. The overall project has a broad community development focus and impacts on the whole rural population who are dependent to various degrees on forest resources for their livelihood. In the more remote forest areas, there may be a higher proportion of ethnic minorities. Village studies carried out

during project preparation indicated that the common generalization of the 50-odd ethnic groups into three main groups according to altitudinal location masked important socio-economic and cultural differences between members of the same group and risked encouraging simplistic policies towards them. The commonly called "Lao Theung" group, who make up a large percentage of the upland Lao population and include many ethnic minorities, are internally very diverse. The study also concluded that the ethnic map was even more complicated than it seemed. Thus, the project approach is to enable each village to be fully involved in its own natural resource management and village development planning; this will ensure that the final plan is tailored to the village's specific conditions and needs. The project will not involve any resettlement activities, and customary rights of access to forest resources will be safeguarded by the delineation of shifting cultivation land and village forests for community use for indefinite periods under agreements enforceable under the Forestry Land Use Management Decree.

Environmental Monitoring and Evaluation

10. The official guidelines for the monitoring and evaluation of GEF biodiversity projects will be used as a framework for the design of the monitoring and evaluation activities for both the overall project and the protected areas component. These objectives will focus on three aspects: (a) biological; (b) sociological/community participation; and (c) legal/institutional. Short term technical assistance will be provided at project start-up for the design of the M&E program, and baseline surveys will be conducted immediately after design.

11. The biological aspect relates to biodiversity protection and protected area management, for which ecological and biological conservation indicators will be monitored at three hierarchical levels: the regional landscape, the ecosystem, and the species or population levels. These indicators will include critical processes and species, identified and monitored over time and space against control areas, for which an appropriate database will be set up.

12. The socio-economic aspects of resource use will also be monitored, as forest communities are called upon to play an important role in biodiversity and forest resource conservation under the project. The M&E program will monitor social indicators at different hierarchical levels; these will include, inter alia, family livelihood, forest resource allocation and use, and involuntary resettlement.

13. Changes in forestry and land legislation, informal forest usufruct rights, roles and responsibilities of forestry institutions will also be monitored.

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WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Community Mobilization and Training Program

Draft Terms of Reference

Introduction

1. One of the purposes of this project is to provide rural villages with secure land tenure and increase their participation as groups in forestry management and conservation. To this end, a decree is being promulgated which provides for the zoning of the country's forests into Forest Management Area (FMAs) and the development of village land use management plans. DOF will sign special agreements with villages or other identified communities which will define their rights and responsibilities to carry out these land use plans.
2. To implement this social forestry program, DOF will be training groups of Resource Management Technicians (RMTs) and Community Organizers (COs) to work with district administrations and local villages to design the land use plans and secure agreements between the villages and the districts regarding their implementation. While the RMTs and COs will receive specialized training in forest management as well as community organizing, it is expected that they will have limited knowledge and experience in grassroots community organization, upland cultivation systems, and the analysis of village cultures and social systems. In addition, DOF itself has little past experience in developing cooperative relationships with villages regarding forest management. Therefore independent Community Mobilization and Training Teams (CMTTs) are being contracted to assist the DOF in the initial pilot stage of its social forestry program.

Community Mobilization and Training Teams

3. DOF is seeking bids from international NGOs to field the CMTTs. The contracting NGO should have substantial experience in grassroots rural development and conservation activities in Laos or other neighboring countries in Southeast Asia. They should be prepared to commit at least three years and provide expertise and program guidance to the RMTs, COs and other DOF officials in such areas as:

- (a) social and community survey methods;
- (b) design of village and multi-village resource management plans;
- (c) conflict resolution and mediation;
- (d) development of alternative livelihood activities;
- (e) participatory monitoring and evaluation; and
- (f) organizational and administrative capacity building for local DOF officials.

4. Each CMTT will consist of three specialists: (a) a social scientist with training and experience in participatory community diagnosis techniques; (b) a resource management specialist with experience in upland cultivation systems; and (d) a women-in-development specialist with experience in rural training, capacity building and dissemination skills. All members of the CMTTs should be competent in Lao or Thai, and be prepared to become fluent in Lao in a short time. Knowledge of minority languages would be a distinct asset. A different NGO may be selected to supply each team, or a single NGO may supply all (both) teams. If two or more NGOs are contracted, it will be necessary for them to implement the program using a common methodology and goals. Either the social scientist or resource management specialist will serve as the coordinator for each team. One team will be assigned to each province where the pilot program is being implemented, and will be expected to develop its activities in intimate collaboration with provincial and district DOF officials and techniques.

Program Components and Implementation Schedule

5. The overall Community Mobilization and Training Program will prepare and implement consensus land use plans under the project. Because there is presently little detailed and appropriate information regarding the social and living conditions and customary land use practices of the villages and ethnic groups affected, the program will be carried out in two phases, a preliminary phase and an implementation phase. The activities will be the same in both phases, but the preliminary phase will proceed at a substantially slower pace in order to develop an adequate information base regarding the variety of village situations and a detailed methodology for implementing the land use planning and development project components of the program.

6. The preliminary mobilization and study phase should last about one year, during which time detailed village studies and land use plans are completed in 30 to 40 villages. Each CMTT will work closely with sub-teams composed of one RMT and 2 COs each, in order to carry out the community mobilization and planning work. These joint field teams will be referred to as outreach teams. All members of the CMTTs are expected to have experience in and to adopt participatory approaches to the community studies and development planning, and to train and motivate their RMT/CO-workers in the same methodologies. CMTT specialists will normally work in the field at all times with the RMT/CO teams, but each specialist will rotate working with the sub-teams depending on the tasks to be carried out in the involved communities. As additional RMTs and COs are recruited and trained, the CMTT specialists will also be involved in their orientation and supervision in the field setting, perhaps by integrating them into existing outreach teams.

7. The objective of the preliminary phase of the program is to develop detailed profiles of typical communities, and their patterns of land allocation and resource use, as well as to develop a methodology by which the program will be implemented in additional villages, and to train the RMTs and COs in its use. The other components of the program will be integrated with the information collection process:

- (a) providing information to the communities regarding the new government policy on resource management;
- (b) identifying village representatives to assist in the land use planning process;

- (c) developing a land use plan with each community in the context of a group of community plans and negotiating agreement on the plans with the DOF and the district administration;
- (d) identifying the development priorities of the community and relating them to the use of the village development fund available through the program; and
- (e) developing a community-based monitoring and evaluation system to track compliance with and effectiveness of the community land use plan.

8. To this end, regular meetings involving all the outreach teams are necessary to share information and identify regularities and variations among the social organization and resource management practices found in the communities which have been studied in different regions. The CMTTs will be responsible for developing a means of organizing the data collected which will facilitate this information sharing and analysis. At the end of the preliminary phase, the CMTT will prepare two reports, one summarizing the findings of the village studies, and one describing in detail the participatory methodology to be followed during the implementation phase of the CMTP. The various components of the program must be implemented together in a unified program of information dissemination, data collection, and cooperative land use and development planning, and are described more fully now.

Information Dissemination

9. The initial contact of the outreach teams with a village will be to inform the village administration of the new national resource management system, and of the intent to develop a resource management plan for the village which guarantees their future rights to forest and other resources in the context of similar land use plans for a region or watershed area. After explanation to the village administrative committee, a meeting of the entire village should be convened in which the outreach team explains the program and the process of developing a village land use plan which will involve compiling detailed background information about the village, and outlines the goal of identifying village development priorities which can be supported by project development funds. Simple portable charts and graphics which are not language dependent should be developed for these presentations.

Village Surveys and Consultations

10. During the preliminary phase of the program, detailed studies will be performed in enough villages to encompass the range and breadth of ethnic groups to be affected by the community mobilization and land use planning process. Thirty studies would be a minimally acceptable number, and each ethnic group should be represented by at least two villages in order to help ascertain whether differences between villages are likely to be related to ethnicity or other factors. Normally land use plans will be developed jointly with several adjacent villages, as discussed in paras. 18-22 below. If areas selected for study and planning during the preliminary phase are ethnically or ecologically homogeneous, not all villages need to be the object of detailed studies, and some detailed studies will have to be initiated in other ethnically or ecologically contrasting areas in order to develop information on the full range of variation in community organization and resource management patterns. In these latter villages and

their neighbors, the land use planning process may be postponed until the second year of the program.

11. One outcome of the preliminary studies will be specification of the information which must be collected about each community during the implementation phase. It is expected that the implementation studies will be considerably less detailed, and oriented toward identifying how well a village fits one of the social and resource use patterns identified during the preliminary phase. Should the village be significantly different from others previously studied, a more detailed investigation must be carried out.

12. The village studies should provide a historical as well as contemporary picture of village life, social organization, and the means of securing a livelihood. Changes in population, location, residence patterns, farming systems, agricultural self sufficiency, patterns of land use and land allocation, labor requirement and allocation, gender relationships and norms, and relationships with neighboring communities or outside actors are all critical factor in understanding the community's present situation and the possibilities of developing a sustainable land use system for the future. The village studies should be carried out in a participatory manner in order to enable community members to arrive at a conscious understanding of the main development issues and problems facing their community, and to identify action priorities which could be considered for support by the village development fund. The village studies should be seen as a means of arriving at a proposed land use plan which is congruent with present and anticipated future village needs, and which can be implemented within the constraints of village organizational resources. The studies should also lead logically to development plans for the village, and to identifying criteria or parameters which the village can monitor to assess its progress in implementing the land use and development plans. More detailed specification of the topics to be included in the village studies is provided in Appendix 1.

13. One outcome of the study of village organizational patterns should be identification of persons in each village who can assist the outreach team with mobilization and training activities, and who can adequately represent the village or other community to the outreach team and district or province officials. Male and female village conveners (who may not necessarily be part of the official village administrative committee) will be necessary to help elicit the ideas of different segments of the village regarding necessary components of the land use plan and priorities for development activities to be supported through the village development fund. Consideration should be given to developing brief local training programs for these village conveners in community organization and resource management.

14. A second issue to be addressed is the choice of units for social mobilization, training, and resource management. Ethnographic information on some Lao minorities suggests that the village may not necessarily be the most appropriate social unit, but that groups based on kinship, or settlement history for example, or even multi-village groups may be more appropriate for the mobilization and resource management activities included in these projects. The migration of villages over time must also be addressed in the study, particularly with regard to the question of whether and how a village can manage land-based resources if the village itself is not permanently sited. Particularly if all land in a region is eventually allocated among land use categories, any groups

or households seeking to move into an area may find they no longer have access to unclaimed land.

15. In minority villages where a substantial percentage of the population does not speak Lao well, the dissemination and collection of information requires accurate translation which is sensitive to the cultural and attitudinal background of the community members. Identifying community members who speak Lao and can serve as interpreters is probably the best approach, as these translators would be known and trusted by the village, and their allegiance would likely be to the village rather than to the government, and thus would not be tempted to gloss over uncertainties or potential points of conflict either in exchange of information or the development of land use plans. RMTs and COs who are members of the ethnic group involved, or who speak the language, and who understand the importance of participatory development of land use plans, would be a second choice for interpreters. In any village, the bulk of the communication must take place in a language understood by all members, whether Lao or a minority language, in order for everyone to participate in the information and idea interchange which is essential to this process, and in order that the outside mobilizers do not dominate or control (whether intentionally or inadvertently) the content, direction, or speed of the exchange by relying on translation.

16. At the end of the preliminary phase of the program, the outreach teams, guided by the CMTT, should design a standard data collection instrument which includes the information found in the preliminary village studies to be most relevant in understanding the village situation. This instrument will be used in the villages during the implementation phase for more rapid data collection and analysis. The availability of a standard instrument does not imply that data will be collected by simple interviews, however. Participatory methods, including group meetings, joint preparation of maps or inventories and field verification must be used. The study team should also design a standard procedure for charting land-use practices (mapping the present situation as well as changes over time).

Village Management Plans

17. As part of the village study, a detailed map should be prepared which shows current land use practices by the community, including house sites, permanent farm land, temporary swidden fields and the area which is in rotational fallow, communal lands and other geographically defined resources (water sources, locations of spirit shrines, firewood plantations, grazing areas, etc). In addition, the land area necessary for self sufficient farm production for each household should be determined, and aggregated to the community level with appropriate provision for anticipated population growth. This combination of private, usufruct, rotational and communal lands becomes the starting point for the land use planning process.

18. A unified land use plan should be developed for entire watersheds or other large natural units. Several different communities may be given rights and responsibilities over specific zones in the planning unit, with different parcels of each community's management zone allocation to different use. But strong efforts should be made to ensure that parcels with similar land use classifications which are managed by different communities are contiguous, so that management units are not fragmented. Rights and obligations of one community vis-a-vis other communities, logging companies and other actors must be specified in the plan.

19. Identification of either the permanent or temporary holdings of individual households should not be specified in the land use plan, but left up to the village to manage in its customary manner, which, however, should be defined in the plan. Permanent title to paddy land or house sites, for example, need not be a component of this program but wait for the eventual implementation of a national land survey and titling process. Where there are disputes over land rights within the community, or between neighboring communities, the outreach plans and district administration will need to play a mediating role to encourage the resolution of these conflicts before the plan is finalized.

20. Preparation of the plan should rely on the community representatives identified by the village study, but these representatives should be encouraged to consult with village members, and the planning process should proceed slowly enough to allow this consultation to occur. The outreach team should develop with the village representatives procedures for consulting with all village members, because all sectors of the village, including women, elders, and traditional authorities need to agree on the plan and the maps describing it before it is submitted to the government. A meeting between the outreach team and village representatives should be followed by two or three weeks to allow for the village to consult informally among its members and if necessary to have a meeting of its own with no outsiders present to formulate a consensus regarding the land use plan. The outreach team will also organize meeting between representatives of neighboring communities in order to develop a joint resource use plan encompassing the several village forest zones. It may require several such iterations before agreement is reached within the community and between the community and the outreach team. The team should offer technical advice to the community regarding means of insuring that the land use plan proposed is sustainable and should propose modifications in management or farming techniques which would increase the productivity of the land resource without compromising sustainability.

21. Normally, several villages in the same vicinity will be in the process of developing land use plans at the same time. The outreach team involved should therefore assist in identifying a joint management area based on natural geographical or ecological boundaries, together with resolution of boundaries between individual village resource zones within the area. It may be more appropriate for separate plans to be developed for each village, but each plan should contain similar provisions and resource management should be coordinated throughout the joint management area as well as the larger forest range. For example, village forest areas zoned for watershed protection and gathering of non-wood forest products should, where possible, be contiguous from one village zone to another.

22. Once community agreement has been obtained, the outreach team and village representatives will submit the plan to the government for approval. If the government has any objection to components of the community land use plan, the outreach team will facilitate negotiations between the village(s) and the government. Once all plans have been designed, a joint meeting between the government and representatives of all villages should be held. Its objective is for each village to be aware of the provisions in the plans of its neighbors, and to instill confidence that all villages, as well as all other actors with rights to other zones in the forest, are operating with the same rights and under the same constraints.

Livelihood Activities and the Village Development Fund

23. During the village study and development of the land use plan, the outreach team should also encourage the community to identify problems or ideas which affect its quality of life and agricultural productivity. The CMTT resource management specialist will play an important role at this stage, especially in suggesting changes in cropping and animal husbandry practices or in other livelihood activities, which may improve the standard of living of the community and be consistent with sustainable management of the forest and other resources identified in the land use plan.

24. The CMTT should be prepared to assist the village in identifying priority projects which could be supported with funds earmarked for village development activities. These projects should benefit the entire community, rather than just one segment of it, whether by construction of a community resource such as an irrigation system or potable water supply or by provision of equal grants for development of new crops to each household.

25. It is important to recognize the extreme shortage of technical assistance and other resources needed for most village development projects, however. Even small irrigation projects require substantial survey and design efforts and supervision of the construction; most provinces have the capacity to implement no more than 3 small projects a year. Substantial changes in agricultural practices may require extension resources which are beyond the ability of a district. The program should, therefore, investigate means of identifying village development activities which are suitable for support by the village development fund, and which do not require extensive outside technical advice, or which can be implemented using farmer-to-farmer information exchange methods. The outreach team should also assist a community in contacting other agencies which can provide technical assistance beyond the rather limited capacity of the RMTs and COs.

Monitoring and Evaluation

26. During the development of the land use plan in a community, the outreach team should raise the question of what indicators of progress or environmental stability can be monitored by the village to track the results of the plan. Criteria such as area of old fallow cleared, average rice yields, wildlife seen, deaths of domestic animals, etc might all be indicators of whether the village is fulfilling its goals. As with other aspects of the program, these criteria or indicators should be identified interactively, and be things which villagers are used to observing and/or know how to measure.

27. Each village should identify a small committee with the responsibility for monitoring the indicators selected. At least yearly, the committee should report to the rest of the community, and also send a report to the district forestry technicians or forest ranger detailing the monitoring information as well as successes or problems encountered over the last year in implementing the plan. Depending on the provisions of national land use decrees and legislation, modifications in a community land use plan may be proposed by the village if the monitoring process indicates that objectives of the plan are not being met or that the provisions of the initial plan are unworkable.

28. A critical element of the overall land use planning process is giving villagers permanent and secure rights over the natural resources necessary for

an adequate livelihood. Protection of village resources against encroachment by outsiders is essential to this goal. While the community must be prepared to manage and sanction the behavior of its members, they may as well be given authority to control the actions of non-community members on their land. When the village is unable effectively to control the behavior of violators, there should be a means of notifying district authorities, as worked out in the land use planning process. The district needs to guarantee a timely and appropriate response to any such violations.

Dissemination and Reporting

29. Finally, the NGO(s) contracted to carry out the program will be expected at periodic intervals to report upon and disseminate the lessons learned from its participation in the program to DOF and other government officials, to other NGOs and to the international donor community. This will include the writing of reports which outline progress made in introducing the program in different social and ecological settings. It should also include the production of audio-visual materials (e.g. videos or photographic exhibits) which show the process and problems encountered in designing and implementing the social forestry program. The program will also be actively involved in the formal training of each new generation of RMTs and COs, and where appropriate in the orientation of other DOF staff to the goals and procedures of the social forestry program. In other words, it is expected that an overall dissemination and reporting strategy will be developed to ensure the maximum diffusion of the lessons learned from the pilot phase experience to other areas of Laos where the social forestry program will be introduced.

Content of Detailed Community Studies

1. In the detailed community studies carried out during the preliminary phase of the program, information should be collected regarding the following issues:
2. Present demographic situation: changes over time, mortality, birth rate, and migration patterns of individual households as well as the overall village. In what settings (social and geographical) do people prefer to live?
3. Ethnicity: self identification and relationship to other known ethnic groups; similarity or contrast with other neighboring communities.
4. Village social organizations: presence of clans, kin groupings or other principles of group membership; relationship of village administration to official Lao government system and informal leadership patterns. How was the village administrative committee selected and who do they represent? What is the basis for respect or status of traditional leaders (age, religious background, shamanistic prowess, etc)? Is the village factionalized or solidary? Is the village a natural social grouping, or are there sub-groups (or groups of several villages) which would be more appropriate for communal resource planning and management? What kinds of conflicts have occurred in the past, and how were they resolved?
5. Decision making: How are village decisions made? Do some groups or classes of people (age, gender, clan, etc) have more influence than others? What objective and/or social factors limit the participation of "disadvantaged" groups in village decisions?
6. Village social resources: (schools, religious building or organizations, reputation for proficiency in any activity, etc). What kinds of cooperation have taken place in the past? How does the village respond to crisis - either of individual households or of the village as a whole? Are there emergency assistance resources (material, financial or social) within the village?
7. Extra community relations: How does the village relate with neighboring communities? Are there areas of cooperation or conflict, for example regarding religious festivals, trading, or resource use?
8. Farming system(s) analysis: What are the crops grown, livestock raised, patterns of production over time, technologies used, income/expense analysis etc. What conditions or factors (social, economic or physical) limit production? What kinds of land are used for farming and under what circumstances? How is land use or ownership allocated among households and gender? How have community requirements for land changed over the last 20 years? Is new land being brought into production and if so, how is it claimed and developed? What components of the farming system are sustainable? What components could be sustainable with minimal changes in technology or process? To what degree is the community and are individual households able to produce enough food for their own needs? What is the extent of and reasons for yearly or inter-household variation in self-sufficiency? Is there potential for expanding or improving the production or

efficiency of any component(s) of the farming system? What are the barriers to expansion?

9. Land use mapping: Utilizing the 1:100,000 SPOT photographs and topological maps which are available for the land zoning process, map the resources of the subject village and its neighbors, including swidden and paddy fields, fallows (by age), village sites, private and communal forest (and its type and utilization), water resources and potentials for development of same. Carry out a complete mapping of household land holdings or temporary fields, including (where appropriate and possible) mapping of swidden or garden fields farmed over the past 5-10 years.

10. Labor use: How is household labor allocated among the different tasks (farming, household work, trading, etc)? What are age and gender patterns of work? How do labor requirements vary over the course of a year? Are there community practices of labor exchange, hired labor, or other means of reallocating labor among households? Do community members perform hired labor outside the village, and if so for whom, in what tasks, and under what conditions?

11. Forest products: What wild foods and other products are collected, by whom, and how? Are the consumed locally or sold? Are harvest procedures and quantities sustainable? How important are wild foods and other natural products in the household economy?

12. Environmental attitudes: How do community members understand their relationship with the natural environment? To what extent are they aware of changes in the environment over time, and the causes for those changes? To what extent do they understand and/or agree with government concerns for economic growth, revenue production, and environmental protection? What are the most important local concerns regarding the environment? How does the community classify or distinguish local environmental resources (types of forest, types of farmable land, water resources, etc)? What criteria do farmers use in selecting land for farm fields (swidden or paddy)? Is farm land perceived as being plentiful or scarce? Of good or poor quality?

13. Market relationships: What products are sold and what products are purchased? Which family members are involved in trading? Where do community members go to buy or sell items? Are there permanent or semi-permanent trading relationships with particular merchants, other villages, or other marketing networks? What are the terms of trade and how do they compare with other nearby communities or with communities closer to urban centers?

Draft Terms of Reference for Monitoring Participation
and Village Development

Villages, in cooperation with Outreach Teams, will develop a list of indicators of progress and environmental stability to track the impact of land use and village development plans. A possible list of indicators is shown below. Detailed community studies carried out by the outreach teams during the preliminary phase of project implementation would provide baseline data on these indicators.

Changes in Subsistence:

- Source of subsistence food products,
- materials and items for household use,
- tools and technologies used,
- source of medical items,
- perceived threats or barriers to adequate subsistence.

Changes in Income and Wealth:

- Source and amount of cash income from labor, services, sale of products, etc.
- number of large animals,
- size and style of houses, village wat,
- perceived need for more income.

Changes in Population:

- In or out migration, seasonal or permanent,
- ethnic group,
- birth rate, mortality, population structure by age and sex.

Changes in Resources Available in Village:

- Village forest, degraded forest, paddy land, shifting cultivation areas,
- rice,
- stores, market,
- government and other services (e.g. school, health, blacksmith),
- capability of intra-village cooperation.

Changes in Water Supply:

- Drinking water supply, agricultural water supply (for irrigation, gardening),
- natural watercourses, runoff from rains.

Changes in Soil Quality

- Fallow cycles, erosion, fertility/rice yields.

Changes in Environment

- Status of forest of each category,
- uncontrolled forest fires,
- wildlife (seen and sold in markets),
- unauthorized hunting.

Changes in Health and Safety

- Disease, malnutrition, infant and child mortality,
- deaths or injuries due to accident or attacks,
- incidence of robbery.

Changes in Connection with Neighboring Villages and Towns.

- Transportation routes, means and regularity of transportation,
- market connections,
- conflict or cooperation with neighboring villages.

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Annex 6

WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Terms of Reference for Technical Assistance

Long Term

1. Conservation Program Manager
(60 person-months)

Qualifications: Relevant academic qualifications with deep botanical knowledge. A minimum of 8 years experience, preferably in South East Asia, in developing and managing conservation programs, including survey and inventory, protected areas and related community programs, and training. Strong communication skills in Thai and/or Lao, and preparedness to travel extensively within Laos.

Duties:

- financial administration and management, logistical support for obtaining appropriate equipment;
- coordination, supervision and monitoring of progress, including staff performance;
- design, establishment and management of the designated protected areas;
- community involvement in protection programs;
- link project activities to a national conservation program; liaise extensively with local and international organizations;
- in close collaboration with the regional PROSEA (Plant Resources of South East Asia) project, initiate and implement nationwide survey of flora; establish national herbarium with the associated data base;
- contribute to the development of protected area monitoring systems, encompassing ecological and socio-economic information;
- in close collaboration with DOF staff, particularly FTO, identify training needs of protected area field staff, implement an in-service training program, also making use of appropriate regional training opportunities.

2. Community Development Adviser
(48 person-months)

Qualifications: Academic qualifications in sociology, social anthropology or related discipline, with emphasis on rural development. Sound understanding of rural society dynamics, production systems, participatory planning methods. Extensive demonstrated experience in field level community development work in South-East Asia, preferably in Laos or northeastern Thailand. Strong communication skills in Thai and/or Lao.

Duties:

- Together with DOF staff, various GOL organizations as well as NGOs, develop and implement a village level community development program in and around the protected areas, including:
- surveying the social and economic conditions of the villages;
- identifying Community Organizers and other village resource persons;
- assisting villagers to establish priorities for development;
- specifying program incentives;
- organizing the delivery of project inputs and assisting villagers to provide their inputs;
- liaise extensively with local women's organizations and locally present NGOs, to facilitate their participation in project supported and complementary activities;
- together with the Rural Development Specialist, and in close collaboration of pertinent DOF staff, design an in-service training program for all levels of protected area management personnel, with special emphasis on field staff; train DOF staff, prepare training material as required.

3. Women-in-Development Specialist
(48 person-months)

Qualifications: Academic qualifications in sociology, social anthropology or related discipline, with emphasis on rural development. Sound experience of women issues in field development work in South-East Asia, preferably in Laos or northeastern Thailand. Strong communication skills in Thai and/or Lao.

Duties:

- Together with DOF staff, various GOL organizations as well as NGOs, and the Community Development and the Rural Development Advisers develop and implement community forestry and village development activities;
- will have special responsibility for addressing the role of women in forestry and for emphasizing the role of women; and
- liaise intensively with local and national women's organizations to facilitate their participation in the project. women.

Short Term

(i) Environmental Monitoring and Evaluation

1. Environmental Monitoring and Evaluation Specialist
(12 person-months)

Qualifications: Relevant academic qualifications and at least 10 years experience in designing environmental monitoring and evaluation programs in South East Asia in watershed areas and production forests.

Duties:

- In close collaboration with DOF staff, design and implement an environmental monitoring and evaluation program, with special emphasis on protected areas; the program would include the

evaluation of the effectiveness of project design and management plans in achieving project objectives;

- provide inputs towards the development of environmental monitoring and evaluation in conservation and production forests;
- provide inputs to the design of the nationwide survey of flora; and
- provide extensive on-the-job training to GOL staff involved in protection and monitoring.

2. Inventory Specialists
(2 @ 12 person-months)

Qualifications: Relevant academic qualifications in natural resource inventory with sound knowledge of the flora and fauna in the region. Extensive experience in implementing natural resource inventories in tropical forests. In close collaboration with pertinent DOF staff, design and conduct field surveys of high-priority protected areas.

Duties:

- In close collaboration with pertinent DOF staff, design and conduct nationwide survey of flora, with the aim of establishing data base and herbarium;
- assist in on-going field projects, such as kouprey and wild elephant surveys;
- assist counterpart staff to understand principles and techniques of field inventories; provide input into training materials for in-service training courses.

(ii) Other Functions

3. Conservation Trust Fund Advisor
(6 person-months)

Qualifications: Extensive international experience in the legal and financial modalities of designing and establishing an operational Conservation Trust Fund. This position can be filled by either an individual or an organization working in innovative conservation finance mechanisms.

Duties:

Design all components of the Conservation Trust Fund, including administration, legal arrangements, and implement the fund for the project.

4. Short Term Specialists
(max. 12 person-months)

Qualifications: Specialists in technical social and environmental disciplines.

Duties: As required.

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WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

Profiles of Six Candidate Protected Areas

1. Four protected areas would be established from a priority list of six sites. A brief profile of each site is presented below.

Nakai Plateau/Nam Theun

2. The area proposed for protection comprises two separate but contiguous areas (Nakai Plateau and Nam Theun), covering over 400,000 ha, that could be managed as a single conservation unit. The proposed area is within the **Annam biotic province** and is bordered on the east by the border with Vietnam. Good forests in Vu Quang across the border into Vietnam offer potential for a major transfrontier reserve. This area is undoubtedly one of the outstanding remaining areas of biodiversity concentration in Southeast Asia, both in terms of density and of diversity, mainly due to the high level of habitat preservation in the area. Over 80% of the area is forested and much of the remainder consists of natural open grasslands. There are a few wetlands associated with these grasslands, particularly on the Nakai Plateau.

3. The Nakai Plateau consists of a number of forest types, the most distinctive of which is the tropical pine forest. The associated Nam Theun area is characterized by largely undisturbed tropical montane evergreen forests. The whole area has been identified by IUCN as high priority conservation areas. Wildlife reported from the area includes the elephant, the gaur, and the tiger. The Nakai/Nam Theun region is within the traditional range of the Javan rhino, but its actual presence in the area has to be verified.

4. There are 7-8 villages of the Thai Meuy minority group living in the center of Nakai. Major threats to the forest include a ten-year logging contract recently granted to a South Korean logging company and the possible construction of a hydropower dam within the proposed reserve area. Logging operations focus on pine logs, and although there is little evidence to date of significant habitat alteration due to previous logging operations, there is concern that destruction will accelerate unless habitat management programs are implemented. The proposed area is an outstanding biological area that warrants high priority conservation. Government has expressed interest in proposing this area as a site under the World Heritage Convention as it also offers excellent scenic vistas. It is considered that logging operations in the area can be managed by appropriate zoning.

Dong Amphane

5. The Dong Amphane area proposed for protection is a triangular forest area of 160,000-200,000 ha of remote, hilly terrain located within the **Central Indochina biotic province** (biogeographic classification based on MacKinnon and MacKinnon 1986). The area is bounded on the east by the border with Vietnam and

in the south by the Xe Xou river. Its elevation ranges from 100 m along the Xe Kaman river in the north-west to 2,052 m along the Vietnamese border. A small area south of the Xe Xou river to the border with Cambodia could also be included in the proposed protected area, which includes parts of the administrative districts of Saysettha and Sansay in Attopeu Province and Dukchung in Sekong Province. Approximately ten villages are located within or on the boundaries of the area, mostly in the northern part.

6. The Ho Chi Minh trail passes through the eastern part of Dong Amphane. Bombing raids on this area during the Vietnamese war have left large patches of disturbed forest, much of which is now covered with bamboo growth. The original vegetation cover of the area consisted of lowland semi-evergreen forest and tropical montane evergreen forest. It is reported that 70-85% of the area was under dense forest cover at the beginning of the 1980s, but current estimates of forest cover and reliable information on flora and fauna are unavailable. The area also features two small wetlands, both in the northeast.

7. Agriculture in the area is at subsistence level and is confined to shifting cultivation of food crops (mainly glutinous rice), home gardens and raising livestock. Forest products (firewood, building materials, food, medicinal plants), wildlife, and fish are harvested also on a subsistence level by local residents. Commercial logging has reportedly not occurred in the area.

8. Wildlife found (or likely to be found) in the area includes the banteng (Bos javanicus), wild buffalo (Bubalus bubalis), gaur (Bos gaurus), civets (Viverricula zibetha, Paradoxurus hermaphroditus, and possibly Arctogalidia trivirgata), tiger (Panthera tigris), clouded leopard (Neofelis nebulosa or possibly, Felis marmorata) and elephant (Elephas maximus). There is also a possibility that the kouprey (Bos sauveli), an extremely rare species, may be found in the area. Some conservation measures have already been taken by the provincial authorities to protect the area. These include designation of the area as a forest reserve in 1990, thereby prohibiting logging, cultivation, burning and hunting, but implementation has been limited to date, except for the posting of signs prohibiting hunting in the area.

9. The proposed Dong Amphane area is a suitable area for conservation in view of its apparently good remaining forest cover and wildlife populations. In addition, it is remote and lightly populated and there are no immediate threats from major development projects. The potential conservation value of the area is enhanced by its proximity to existing/potential protected areas in Cambodia and Vietnam. The triborder area provides a good location for the establishment of a transfrontier reserve to promote both biodiversity conservation and international cooperation. The region is also considered to be a possible center of plant biodiversity, and although this is based on very limited information, further investigation and consideration is necessary in the formulation of protection measures.

Phou Xiang Thong

10. The proposed protected area lies within the **Central Indochina biotic province**. It consists of an area along the Mekong river in Saravane Province, covering 90,000-100,000 ha. During the colonial period, this area was a favorite hunting area for the French. It is represented by mostly undisturbed primary forest and includes old-growth forest in about 65% of the area. The vegetation

50%. A variety of wildlife species are known from the area, including the gibbon, elephant, macaques, sambar and bear. Although much disturbed, existing vegetation appears to consist primarily of dense and regenerating forests, that have high conservation potential provided protective measures could be instituted early.

Nam Ma

16. The proposed reserve consists of around 85,000 ha of hilly terrain in the Luang Namtha Province. It consists mainly of dry evergreen forest and tropical montane evergreen forest within the **Northern Indochina biotic province**. Over one-fourth of the forests are degraded. Very little additional information is available for the proposed area. This proposed area is on the Government's priority list for further study.

is mainly composed of montane forests, dry dipterocarp, and lowland evergreen forests. The area in Thailand across the Mekong river from Phou Xiang Thong is also forested, but the condition of the forest may be less pristine. Small farming communities of lowland Lao are settled along the highway running east of Phou Xiang Thong. There are no settlements along the Mekong River, which is the western boundary of the proposed protected area.

Phou Xang He

11. Located in Savannakhet Province, the proposed Phou Xang He reserve area of about 60,000 ha is covered mainly by semi-evergreen forests on a small highland ridge which is completely surrounded by villages. The lowland area around it is largely composed of degraded secondary forests and rice paddies. Although there are no human settlements within the proposed reserve area, there are from 30 to 40 surrounding villages.

12. The area supports a number of wildlife species, including the Douc langur which has been reported throughout the area. Elephant distribution appears patchy. There are also reports of Francois' langur in the area, but this needs confirmation. Although worthy of conservation due to its size and largely intact forest area, the large human populations surrounding the proposed reserve would warrant enhanced emphasis on community programs. There is possibility of extending the area to the west.

Phou Dene Dinh

13. The area proposed for conservation covers over 200,000 ha of remote, hilly terrain on the eastern side of Phongsaly Province. It is located within the **Northern Indochina biotic province**, in a part of Laos that has lost most of its original forest. The northern and eastern boundaries of the reserve are formed by the borders with China and Vietnam. Its conservation value is enhanced by it being adjacent to the Muong Te protected area in Vietnam, thereby potentially providing a contiguous area of over 400,000 ha that could be brought under protective management. The Phou Dene Dinh area is considered to be one of the few remaining areas in Northern Laos with good remaining wildlife populations.

14. The area includes about 10 villages within the proposed reserve and a similar number situated on or adjacent to the boundaries. Up to date information on villages and human populations are not available, but the ethnic groups are known to include mainly the Lao Seng and Lao Lu groups, with smaller numbers of Haw, Yao, Si-dah, Alou and Hmong groups. Shifting cultivation of rice is the main agricultural pursuit, and opium is also widely cultivated on river and stream terraces. Water buffalo, pigs, chickens and ducks are also raised. Forest products are harvested primarily on a subsistence basis, although some products are occasionally sold at the local market.

15. Organized logging has not occurred in the area and there are no formal forestry concessions within the area. The original vegetation cover of the area consisted of dry evergreen forest, tropical montane deciduous forest and subtropical montane forest. This vegetation has been greatly altered by shifting cultivation, fire and selective felling. The current cover consists of a mosaic of newly cleared areas, secondary scrub and high forest. There are various estimates of the actual extent of forest cover, but this is expected to be over

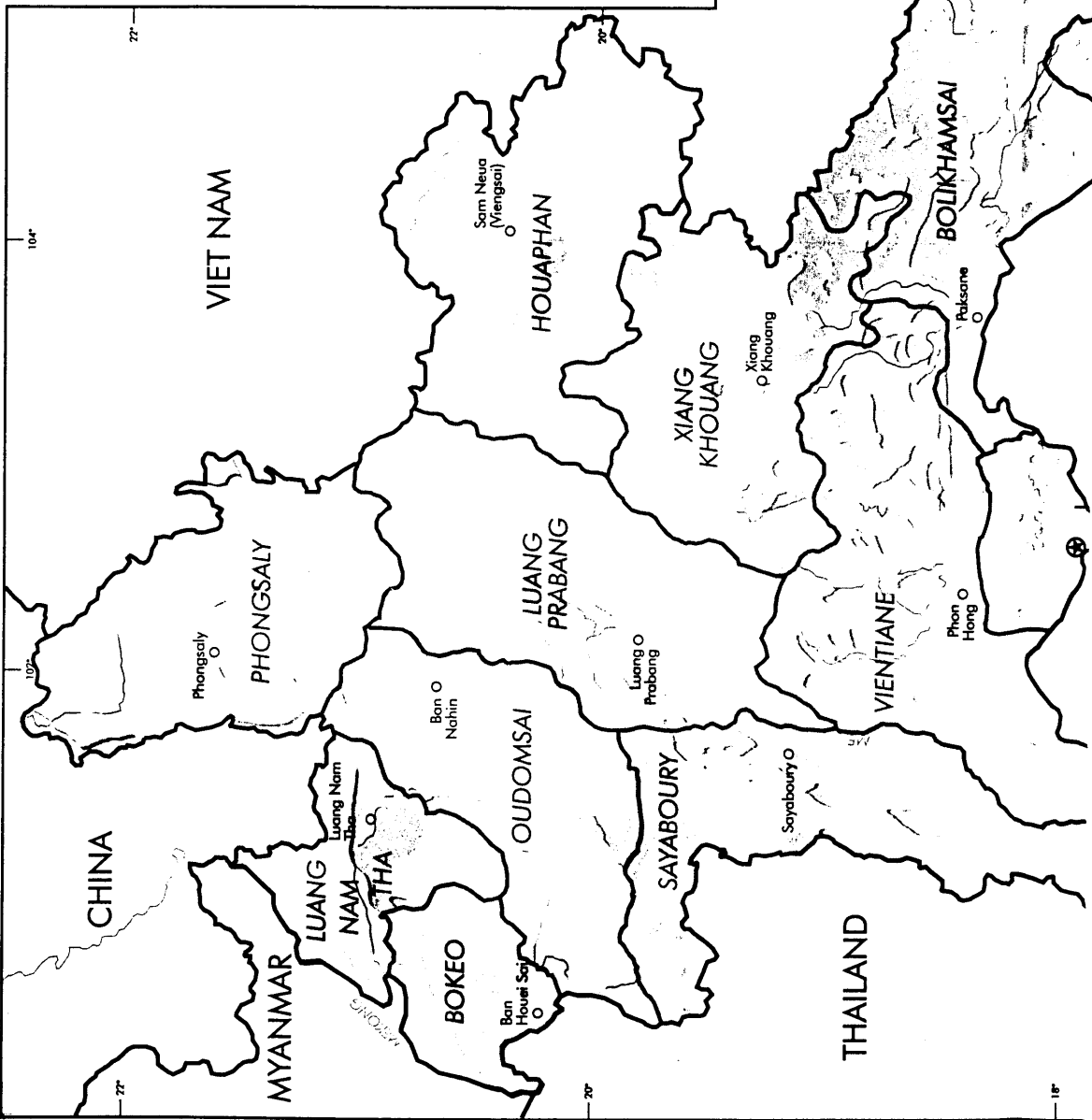
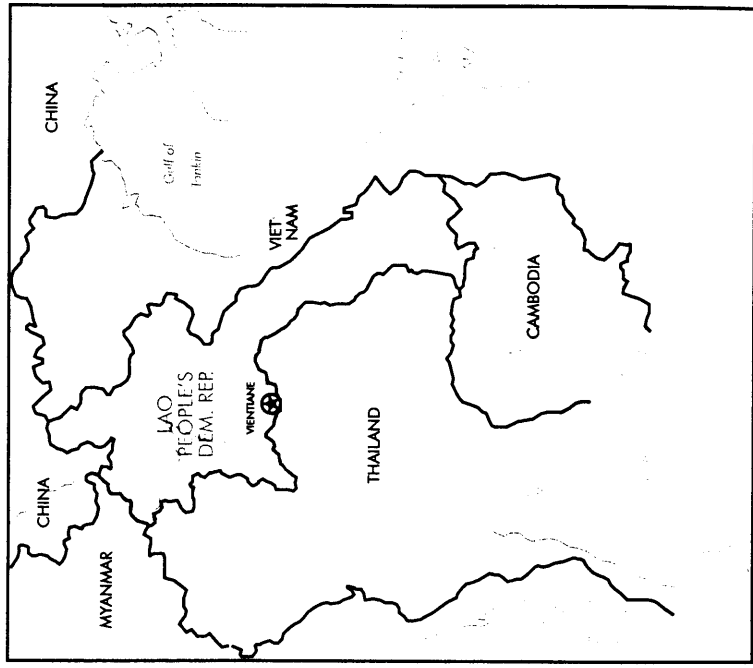
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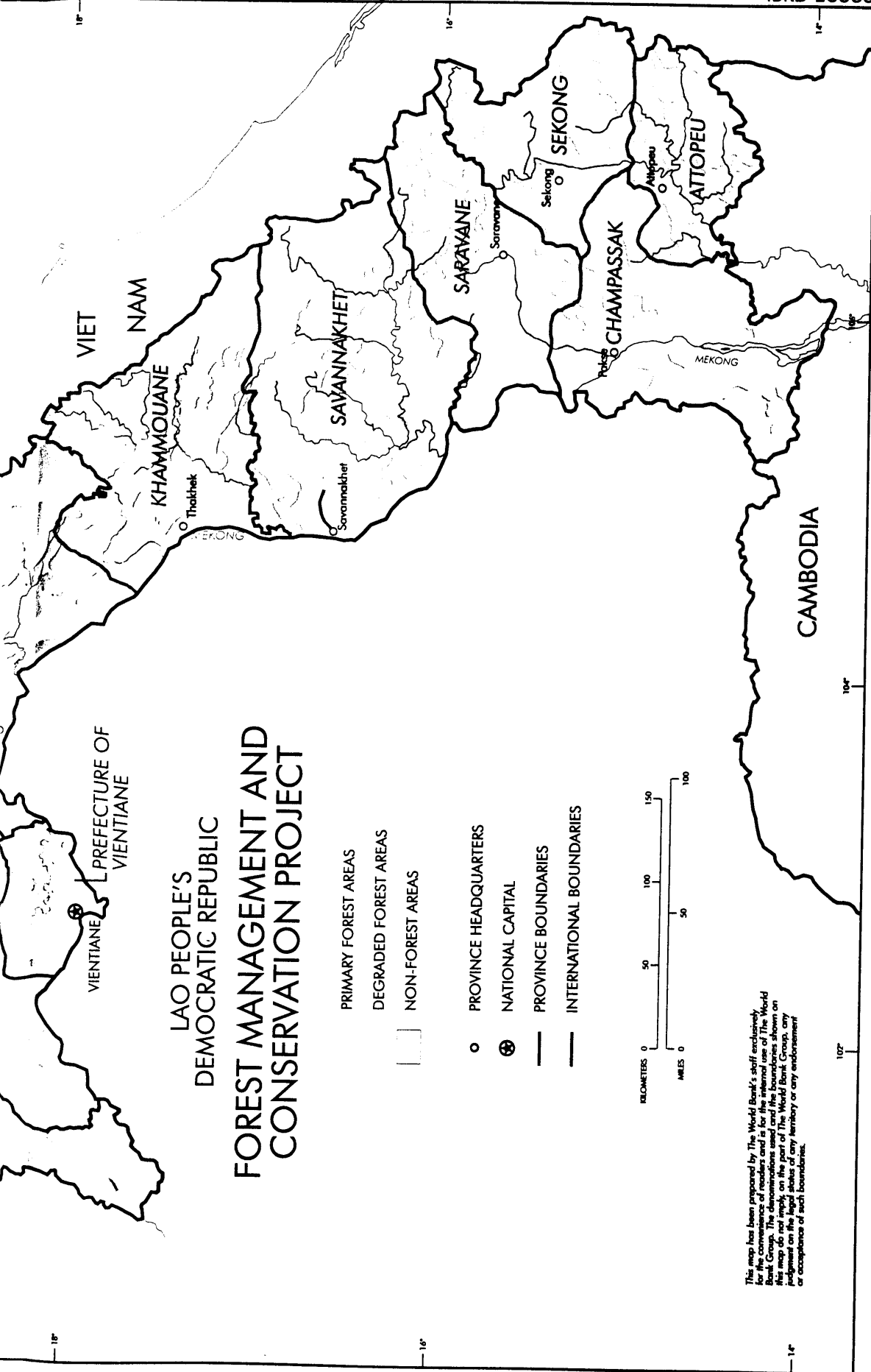
WILDLIFE AND PROTECTED AREAS CONSERVATION PROJECT

IMPLEMENTATION SCHEDULE

Project Component	Pre-Project	Year 1				Year 2				Years 3-5			
		1	2	3	4	1	2	3	4	1	2	3	4
A. PROTECTED AREAS ESTABLISHMENT													
1. Identification of Potential Areas	*****												
2. Selection of Sites for GET Funding	*****												
3. Preliminary Management Plans for:													
Nakai/Nam Theun				****									
Site 2				*****									
Site 3					*****								
Site 4						*****							
4. Additional Surveys and Inventories and Elaboration of Operational Plans for:													
Nakai/Nam Theun				*****									
Site 2				*****									
Site 3					*****								
Site 4						*****							
5. Implementation of Plans:													
Nakai/Nam Theun						*****							
Site 2						*****							
Site 3							*****						
Site 4								*****					
6. Community Development						*****							
7. Environmental Monitoring and Evaluation						*****							
8. Design and Establishment of Conservation Trust Fund													*****
B. TECHNICAL ASSISTANCE													
Conserv. Program Manager						*****							
Community Development						*****							
Environmental Monitoring						*****							
Inventory Specialists (3@12)						*****			*****				
Cons. Trust Fund Adviser							*****						
Miscellaneous						*	*	*	*	*	*	*	*
C. TRAINING													

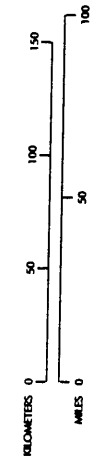
MAP SECTION



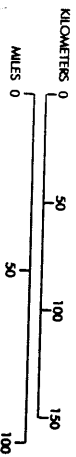
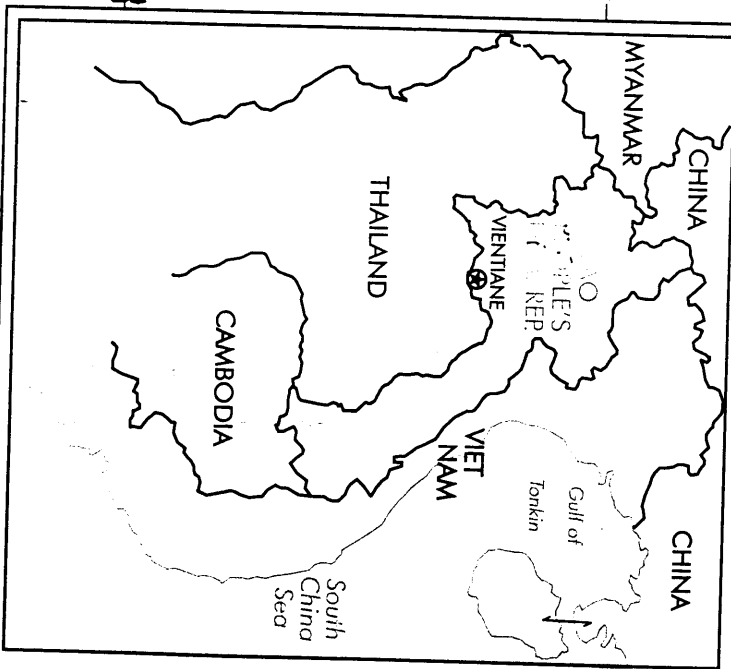
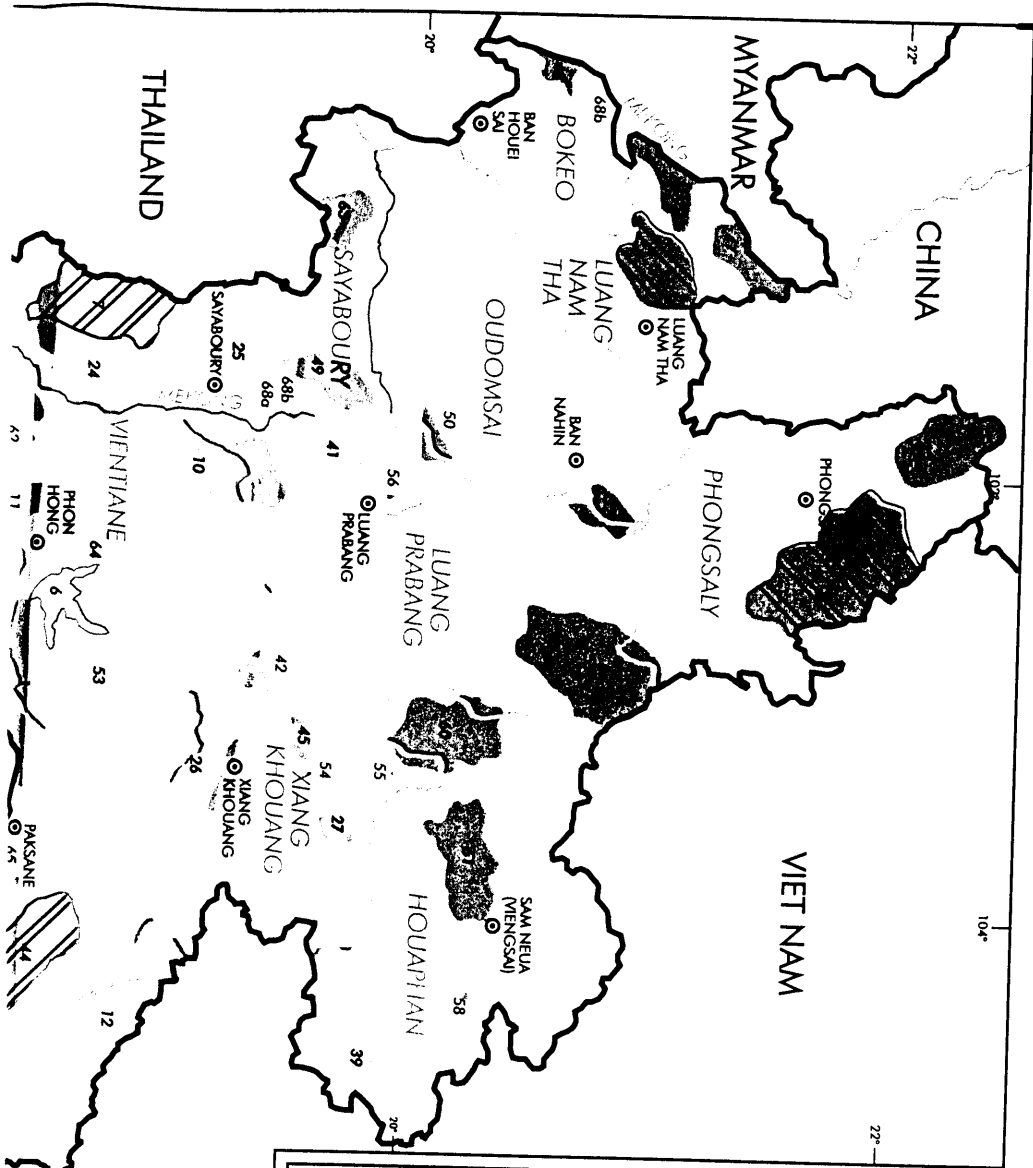


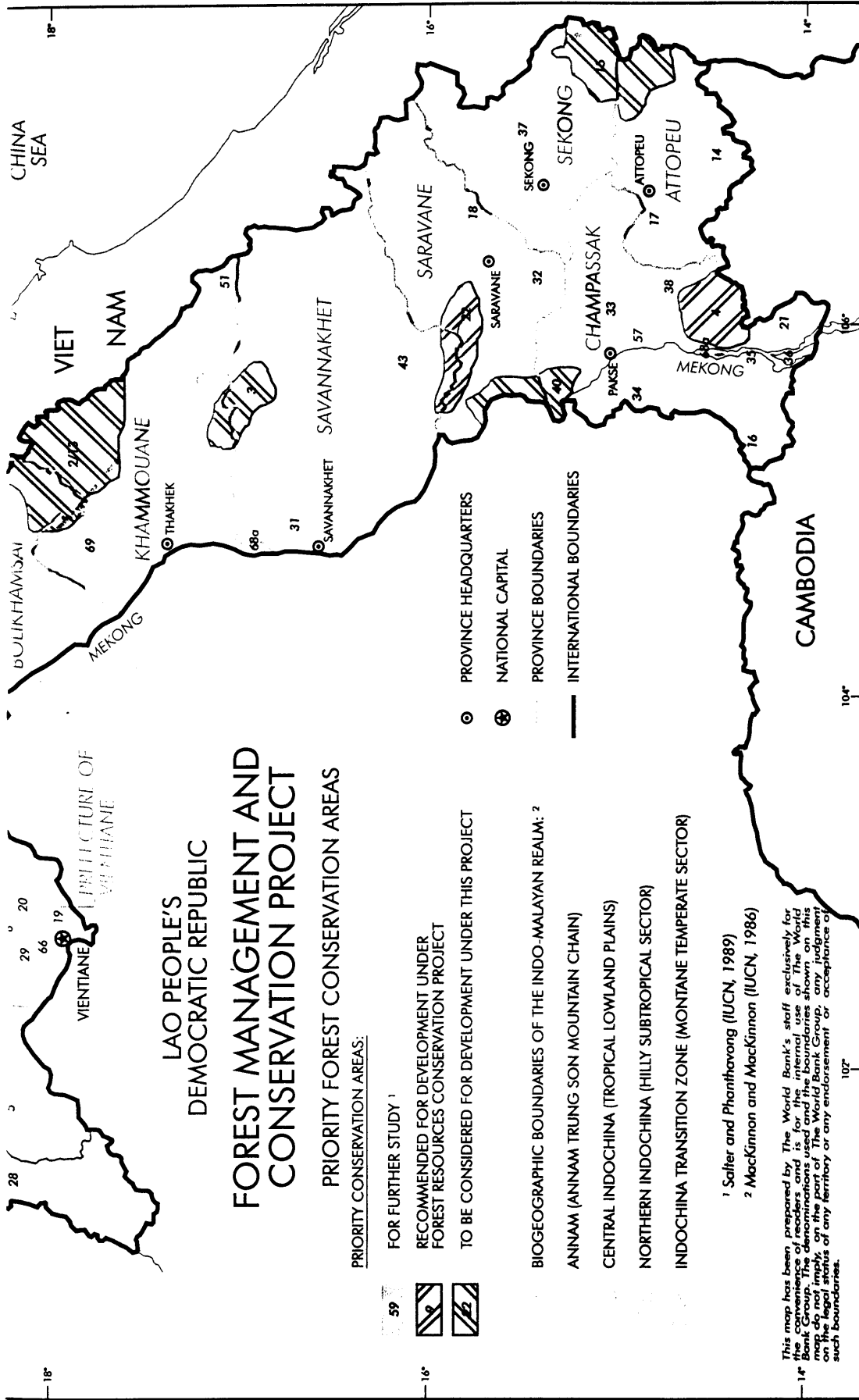
**LAO PEOPLE'S
DEMOCRATIC REPUBLIC**
**FOREST MANAGEMENT AND
CONSERVATION PROJECT**

- PRIMARY FOREST AREAS
- DEGRADED FOREST AREAS
- NON-FOREST AREAS
- PROVINCE HEADQUARTERS
- NATIONAL CAPITAL
- PROVINCE BOUNDARIES
- INTERNATIONAL BOUNDARIES



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LAO PEOPLE'S
DEMOCRATIC REPUBLIC
FOREST MANAGEMENT AND
CONSERVATION PROJECT

PRIORITY FOREST CONSERVATION AREAS

PRIORITY CONSERVATION AREAS:

- 59
- 60
- 61

FOR FURTHER STUDY ¹

RECOMMENDED FOR DEVELOPMENT UNDER
FOREST RESOURCES CONSERVATION PROJECT

TO BE CONSIDERED FOR DEVELOPMENT UNDER THIS PROJECT

BIOGEOGRAPHIC BOUNDARIES OF THE INDO-MALAYAN REALM: ²

- ANNAM (ANNAM TRUNG SON MOUNTAIN CHAIN)
- CENTRAL INDOCHINA (TROPICAL LOWLAND PLAINS)
- NORTHERN INDOCHINA (HILLY SUBTROPICAL SECTOR)
- INDOCHINA TRANSITION ZONE (MONTANE TEMPERATE SECTOR)

¹ Salter and Phanithavong (IUCN, 1989)

² MacKinnon and MacKinnon (IUCN, 1986)

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(PDR)