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PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST

MEMORANDUM AND RECOMMENDATION

OF THE DIRECTOR

OF THE LATIN AMERICA AND THE CARIBBEAN DEPARTMENT I

TO THE VICE PRESIDENT

ON A PROPOSED GRANT

FROM THE

RAIN FOREST TRUST FUND

IN AN AMOUNT EQUIVALENT TO US\$2.0 MILLION

TO THE

FEDERATIVE REPUBLIC OF BRAZIL

FOR A

FOREST RESOURCES MANAGEMENT PROJECT

November 27, 1996

**Pilot Program to Conserve the Brazilian Rain Forest
Country Department I
Latin America and the Caribbean Region**

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CURRENCY EQUIVALENTS

Currency Unit = Real (R\$)

US\$ 1.0 = R\$ 1.02

GOVERNMENT OF BRAZIL FISCAL YEAR

January 1 to December 31

UNITS OF WEIGHTS AND MEASURES

The metric system is used throughout the report

ABBREVIATIONS AND ACRONYMS

AD	Authorization for Deforestation
AIMEX	Associação das Indústrias Exportadoras de Madeira do Estado do Pará (Association of Wood Exporting Industries for the State of Pará)
AITA	Associação Intercomunitária do Tapajós (Intercommunity Association of Tapajós)
APA	Área de Proteção Ambiental (Environmental Protection Area)
ASMIPRUT	Associação Intercomunitária dos Mini e Pequenos Produtores de Piquiatuba à Revolta (Intercommunity Association of Small Producers from Piquiatuba to Revolta)
ATPF	Authorization for the Transport of Forest Products
BB	Banco do Brasil S.A.
COEMA	Conselho Estadual do Meio Ambiente (State Environmental Council)
CPATU	Centro de Pesquisa Agroflorestal do Trópico Umido (Research Center for Agroforestry in the Humid Tropics)
CTA	Centro dos Trabalhadores da Amazônia (Center for Amazonian Workers)
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária (Brazilian Agricultural Research Corporation)
FAO	United Nations Food and Agriculture Organization
FLONA	Floresta Nacional (National Forest)
FUNAI	Fundação Nacional do Índio (National Indian Foundation)
GDA	Grupo de Defesa da Amazônia (Group for the Defense of the Amazon)
GIS	Geographic Information System
GPS	Global Positioning System
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)
IAG	International Advisory Group

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IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute for the Environment and Renewable Natural Resources)
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IMA	Instituto do Meio Ambiente do Amazonas (Amazonas State Environment Institute)
IMAFLOA	Instituto de Manejo e Certificação Florestal e Agrícola (Institute for Forest and Agricultural Management and Certification)
IMAZON	Instituto do Homem e o Meio Ambiente da Amazônia (Institute of Man and the Environment in the Amazon)
INCRA	Instituto Nacional de Colonização e Reforma Agrária (National Institute for Colonization and Agrarian Reform)
INPA	Instituto Nacional de Pesquisas da Amazônia (National Institute for Amazon Research)
IPAAM	Instituto de Proteção Ambiental do Amazonas (Institute for Amazon Environmental Protection)
IPAM	Instituto de Pesquisa Ambiental da Amazônia (Institute for Amazon Environmental Research)
IPHAE-RO	Instituto para a Pré-História, Antropologia e Ecologia - Rondônia (Institute for Pre-History, Anthropology and Ecology, Rondônia)
ITTO	International Tropical Timber Organization
KfW	Kreditanstalt für Wiederaufbau (German Bank for Reconstruction)
MIS	Management Information System
MMA	Ministério de Meio Ambiente, Recursos Hídricos e da Amazônia Legal (Ministry of Environment, Water Resources and the Legal Amazon)
NCB	National Competitive Bidding
NGO	Non-Governmental Organization
ODA	Overseas Development Administration
OEMA	Organização Estadual do Meio Ambiente (State Environmental Agency)
PAES	Projeto de Assentamento Extrativista (Extractivist Settlement Project)
PCU	Project Coordination Unit
PMS	Prefeitura Municipal de Santarém (Santarém Municipal Government)
PP/G7	Pilot Program to Conserve the Brazilian Rain Forest
PSA	Projeto Saude e Alegria (Health and Happiness Project)
REBRAF	Rede Brasileira Agroflorestal (Brazilian Agroforestry Network)
RFT	Rain Forest Trust Fund
SECTAM	Secretaria do Estado de Ciência e Tecnologia e do Meio Ambiente do Pará (Pará State Science and Technology, and Environmental Agency)
SINDIMAD	Sindicato das Indústrias Madeireiras (Timber Industry Association)
SOE	Statement of Expenses
STR	Sindicato dos Trabalhadores Rurais de Santarém (Rural Workers Union of Santarém)
SUPES	Superintendência do Ibama (Regional IBAMA Office)
TOR	Terms of Reference
UNDP	United Nations Development Programme

BRAZIL

**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT**

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This report is based on the Government's proposal (version 6.3) submitted to the Bank in January 1996 and on the findings of an appraisal mission which visited Brazil in April 1996. Mission members were Claudia Sobrevila (LA1ER, mission leader), Christoph Diewald (LA1RF), Ricardo Tarifa (LA1RF), Alberto Ninio (LEGLA), and Pedro Moura Costa, Roberto Bauch, Danilo Sousa, Anthony Anderson and Robert Bushbacher (consultants). The mission was joined by Dietmar Wenz (KfW), Armin Deitenbach (KfW-consultant), Berken Feddersen (GTZ), Martina Greib (GTZ - consultant), Gordon Armstrong (ODA), William Howard (ODA-consultant) and William Edwards (USDA Forest Service), who represented co-financing agencies. Peer reviewers were: David Cassells (ENVLW) and Phillip Hazelton (LA3NR). Other active participants were Graciela Lituma (LA1ER), Robert Kirmse (LA1ER), Claudia Alderman (LA3NR), William Beattie (LASLG) and Luis Constantino (LASLG). Ms. Loretta Sprissler assisted with the writing and editing of this report. Mr. Gobind T. Nankani is the Department Director, Mr. Orville Grimes is the Projects Adviser, and Mr. Robert Schneider is the Rain Forest Trust Fund Manager.

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****GRANT AND PROJECT SUMMARY**

Recipient: Federative Republic of Brazil

Beneficiaries: Ministry of Environment, Water Resources and the Legal Amazon (MMA), Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), State Environmental Agencies (OEMAs), non-governmental organizations (NGOs), academic institutions, local communities and the private sector.

Amount: US\$2.0 million equivalent (RFT)

Terms: Grant

Financing Plan:

Direct Project Funding Source: TOTAL (US\$ million equivalent)

Rain Forest Trust Fund (grant)	2.0
KfW (grant)	12.5
ODA (Technical Assistance)	1.9
Brazilian Government	1.4
<u>GTZ (Technical Assistance)</u>	<u>0.3</u>
Total project costs	18.1

Additional Indirect Funding Source

<u>GTZ (Technical Assistance)</u>	<u>1.9</u>
Total	20.0

Economic Rate of Return: N/A

Map: IBRD No. 28046

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FOR A FOREST RESOURCES MANAGEMENT PROJECT**

I. BACKGROUND

Background

1. The Brazilian Amazon contains more than 80% of Brazil's native forests and almost one third of all tropical forests in the world. The standing volume of commercial trees in the Amazon forests (60 billion m³) is valued at R\$4 trillion of sawn wood. Amazon timber production has increased dramatically in recent years, from 14% (4.5 million m³) of Brazil's total in 1976, to 54% (53.8 million m³) in 1987. In the state of Pará, where most of the logging in the region occurs (65%), the timber industry generates 22% of the Gross State Product. With the depletion of timber stocks in Southeast Asia, the Amazon is expected to become the major provider of tropical timber in the next several decades. In addition to its economic importance, standing forests provide important environmental benefits such as microclimate stabilization, protection against soil erosion, and storage of greenhouse gases that would otherwise be released in the atmosphere. They also contribute to the prevention of global warming and protection of biodiversity.

2. Despite the strategic importance of the forestry sector in the Brazilian Amazon, there is a shortage of experience in the sustainable management of natural forests. Less than five percent of the timber coming from the Amazon originates from managed forests. Most timber extraction in the Amazon is occurring in an unsustainable manner and has been a catalyst for deforestation. Loggers open roads and crude bridges through the forest to extract the best commercial logs (one to several trees per hectare). If left alone, these selectively logged forests could return to pre-harvest conditions. Often, however, one of the following situations occurs: (i) after timber extraction in frontier areas, prospective settlers use logging roads to enter the forest and clear land for agricultural use; (ii) in areas in which the land tenure situation is more stable, loggers re-enter the forest at frequent intervals to remove other species and take smaller individuals of high-value species. Repetitive tree harvesting and logging trails cause further forest deterioration, and open gaps in the forest allowing light to reach the forest floor, drying the under-story and making the forest highly susceptible to fires. This process leads to the conversion from forest cover to agricultural land and pasture. This largely characterizes the process that is now taking place in the states of Pará and Mato Grosso. These competing land uses provide short-term economic gains, but are widely considered to be unsustainable in the long run due to the predominance of poor soils in the Amazon region.

3. The scarcity of implemented commercial sustainable initiatives in the Amazon region is mainly due to: i) the lack of adequate policies and incentives in the forestry sector; ii) an ineffective forestry regulatory system and poor institutional capacity for enforcement of forestry regulations; and (iii) few initiatives in a variety of areas in the Amazon that demonstrate sustainable forest management, especially on a commercial scale.

Current Situation

4. Lack of Adequate Policies and Incentives in the Forestry Sector. Several policies and conditions constitute perverse incentives for the misuse and misallocation of forest resources. Some of these include:

(i) *Free access to the region, lack of control of forest resources.* Deforestation is in part the result of free access to the region, facilitated by roads and improved transportation networks and the abundance of non-titled, non-public set-aside lands. The Government has set aside 5.3% of the total land surface of Amazonia in federal conservation units, 1.4% in state conservation units, 16.2% in indigenous areas, and 1% controlled by the Army. Information on private landholdings is less clear, but is estimated at 46%. On this basis, approximately 28% of the land of the Amazon is allocated neither to the private nor the public sector. The types of private landholdings include large and medium landowners and traditional river communities. With regard to forestry extraction, the area currently assigned to National Forests is small (2.5% of the Amazon). This abundance of free-access land makes sustainable forestry alternatives generally uncompetitive. Each component of this project addresses this problem in a different manner. The Policy component is expected to address directly both incentive policies and land policy, the Promising Initiatives component seeks alternative sustainable forestry techniques that can compete with the current cut-and-run practices; the Monitoring and Control component seeks to reduce timber supply (thereby promoting good timber practices) and to make cut-and-run less competitive relative to sustainable forestry; finally, the FLONA Tapajós component will provide a model of how to sustainably manage National Forest land.

(ii) *Private versus public benefits of forest conservation.* The public benefits of standing forests have not been captured by private entrepreneurs acting in their own economic interest. For this reason, private decision-makers tend to undervalue these benefits, and they act accordingly. Government intervention in forestry is well justified on the basis of such externalities. In the absence of appropriate intervention, many of the environmental and social values might be lost, some of them irreversibly.

(iii) *Low value of timber.* A key problem in implementing forest management is the issue of whether timber has sufficiently high value to cover management costs plus costs of closing access to the forests. Because there is an abundance of unregulated timber in the region, loggers would not be interested in buying timber from managed forests, nor would they be interested in managing areas for sustainable timber production. Unless the government puts in place policies to increase the cost of logging non-managed timber (through some form of tax program), or the prices of

timber from managed forests increase, managed forests will not be viable. Restrictions on exports of managed timber would also need to be eliminated.

(iv) *Discrimination against native forests.* Existing titling procedures and land taxation discriminate against holding forests intact. In order to receive title from the National Institute for Colonization and Agrarian Reform (INCRA), landholders must make "improvements" to some land area. These are interpreted as establishment of pasture or other agricultural systems, all of which require clearing of native forests. Also, although land taxes may be small, "uncultivated" land is assessed at higher tax rates than developed land. The present government has been highly concerned with this issue.

5. To address these distortions in the policy and incentives system affecting the use of forest and other natural resources, the government created in 1995 through Decree 1696, the Chamber for Natural Resources Policies to formulate and coordinate public policies related to natural resources.

6. Complex Forestry and Lack of Institutional Capacity for Enforcement of Forestry Regulations. Brazil's forestry regulatory system is complex and has several constraints. The process of obtaining licenses is bureaucratic. The coordination among federal and state agencies is not adequate and results in conflicting or duplicated procedures in licensing. These agencies focus their work on processing documents which sometimes do not reflect what is happening in the field. Once licenses are granted, as a consequence of lack of resources available, subsequent site visits are rarely made to check whether regulations have been followed. In many areas of the Amazon region, it is difficult to implement the forestry code. One potential mechanism to strengthen the current weak state and federal government enforcement capability could be to provide outside support from academic institutions, NGOs and other extension agencies to participate in monitoring schemes.

7. The challenge for forest policy formulation and enforcement in Brazil is to clarify objectives, simplify the regulatory apparatus, and reform and re-target complementary policy and incentives instruments, as well as to improve the work in partnership with a full range of public and private stakeholders.

8. Few Initiatives in Sustainable Natural Forest Management. There is a shortage of commercial initiatives to develop and test natural forest management models in the Brazilian Amazon. Several research projects by government agencies (INPA, SUDAM, EMBRAPA) have produced valuable information on tropical silviculture. However, they have not been followed by an implementation phase carried out by the private sector, and in some cases they have failed to continue due to a lack of funds. In recent years, many other groups outside the public sector -- universities, NGOs, research institutes and private companies -- have become interested in piloting initiatives aimed at encouraging the sustainable management of natural forests by industry and local communities, but many

of these are incipient or have not secured long-term funding. These initiatives can be grouped into four types,

(i) *Projects in large- and medium-scale commercial timber areas:* (a) the Institute of Man and the Environment in the Amazon (IMAZON), in collaboration with the private sector, has assessed the importance of harvest planning and silvicultural treatments, and their associated costs in Pará; (b) the Tropical Forest Foundation is replicating IMAZON's experience on several other areas in the Amazon; (c) the Precious Woods Company, in collaboration with INPA, is initiating a forest management project on a commercial scale in the Brazilian Amazon.

(ii) *Community forestry projects:* (a) Projeto Saude e Alegria has initiated some work on forest management administered by local communities in the Tapajós National Forest; (b) the NGO IPAM was invited by local communities to provide technical assistance in natural resources management in the Rio Gelado area in southern Pará; (c) an agroforestry project with a local community in Rondônia has been carried out with support from the Virginia Polytechnic Institute and State University and IPHAE; and (d) testing of extractive settlement projects (*projetos de assentamento extrativista*, PAES) is being carried out in Marabá by the locally based institution GRAAL.

(iii) *Forest management projects inside National Forests:* Strengthening the National Forests (FLONAS) in the Amazon could help play an important role in promoting forest management and decreasing deforestation in the Amazon. National Forests are areas administered by IBAMA which are destined for economic production and sustainable use of forest resources. However, none of the 24 FLONAS located in the Amazon (12.6 million ha., or about 2,6% of the Brazilian Amazon) has been established on the ground, due to three key obstacles:

(a) Demarcation and land expropriation. Initially, the government's policy was to expropriate all of the land inside the boundaries of National Forests, including that of traditional forest dwellers. In addition, adequate resources to compensate for the expropriation of property were never allocated. These factors created conflicts which, in some cases, caused delays in the management of the FLONA. More recently, the Government has changed its policy with respect to long-term forest dwellers, allowing them to remain inside federally protected areas. Article 8 of Decree 1298 (October 27, 1994) gives MMA the legal power to authorize the continued occupancy of traditional forest dwellers inside the boundaries of FLONAS. This provision completely eliminates any need for resettlement of traditional populations.

(b) Location. The location of many FLONAS is so remote that transport costs make it unlikely that commercial forestry activities will be viable soon. Even for those located in more strategic areas, there have been difficulties in working with the private sector. For example, experiments with commercial extraction by the private sector in the Tapajós National Forest were initiated a few years ago through a grant from the International Tropical Timber Organization (ITTO) to

IBAMA. The project has started slowly due to difficulties in attracting the private sector to participate in the concession program, and due also to IBAMA's limiting regulations.

(c) Lack of personnel. FLONAS are characterized by their lack of trained staff for management and protection. Given the government's budgetary constraints and the high costs associated with hiring and training new staff to manage these areas in the near future, IBAMA has begun to experiment with partnership arrangements with state governments, NGOs and local communities.

(iv) *Forest management projects in other public lands outside National Forests*: (a) Conservation International of Brazil has been carrying out a project in forest management of mahogany in indigenous lands with the Kayapó indians; (b) a team from the University of Acre and a local NGO (Pesacre) have initiated a sustainable forestry project with local communities in the state of Acre; and (c) the Instituto Socio-Ambiental in cooperation with the University of São Paulo and the Tropical Forest Foundation are working on management and regeneration plans for mahogany in the Xikrin reserve in southern Pará.

9. The examples provided above indicate that there is no unique methodology for sustainable forest management. Each forest type and land tenure situation requires a different approach that needs to be tested and evaluated. The above-referenced projects represent neither the diversity of the Amazon forestry sector nor all the associated problems. The learning is also happening at the individual project level. Additional tests of sustainable forest management by private groups, universities and forestry extension institutions are needed. Furthermore, the establishment of a more systematic learning program encompassing many representative projects would enrich the array of experiences and would provide the Government (IBAMA) with a knowledge basis to implement future Government reserves, such as National Forests, and better understand the needs of forestry regulations in other types of lands. There is a need for a detailed analysis of these different management experiences, about what has worked and what has not, which could be passed on to companies or communities. By carrying out a careful analysis of these experiences, forest policies can be improved and new investments can be identified where gaps exist. Also, through creating a network and dissemination program to advance the understanding of forest management, the government can help link all these experiences with each other and the Government initiatives.

Needs

10. The design of the current project starts with the assumption that in order to promote sustainable management of forest resources, three major strategic interventions need to take place: (1) constant critical evaluation and change of forestry policies and incentives; (2) promotion of promising initiatives in sustainable management; and (3) successful control and monitoring of the forestry regulatory system to discourage poor management practices. All three interventions need to be implemented in a coordinated

manner to ensure maximum benefits and learning. The evaluation of forestry policies and incentives is the top-down approach, and needs to be designed so that it provides the legal and policy framework to ensure success of the other two interventions. The other two interventions - the promotion of promising initiatives and the control and monitoring of the regulatory framework - is the bottom-up approach and needs to be designed so that these interventions are strategically chosen to respond to the major problems of the forestry sector. These interventions need to be implemented locally and through pilot experiments. For example, if the project will promote some sustainable forest management pilot experiments in a geographical area, then the control and monitoring pilot experiments also need to take place in the same geographical area. This will ensure that the incentive and disincentive systems work together for the same goal. In order to select these pilot experiments the framework described below was developed.

11. Strategic selection of pilot enforcement activities and sustainable management projects: Given the complexity of the problems affecting the sustainable development of the forestry sector in the Amazon, and the difficulty of determining where the intervention from the present project would have the most effect, a framework to prioritize actions was developed. This framework includes two variables described in detail in Annex 2 (timber extraction models and land control types) and identifies priority areas for actions and interventions.

12. Timber extraction in the Amazon is very heterogeneous given that there is such a high diversity of forest types. The major factors influencing timber extraction are: 1) composition and volume of commercial species present in a given area; 2) access to resources (roads or rivers); 3) availability of investment capital; 4) market options (regional, national or international); 5) land tenure situation; and 6) socio-economic aspects. Five major timber extraction models exist: (i) Selective logging in flooded forest; (ii) Intensive logging in flooded forest; (iii) Selective -High value species in upland forest; (iv) Semi-intensive logging in upland forest; and (v) Intensive Logging in upland forest. See Annex 2 for more details on these extraction models. Depending on the extraction model, timber harvesting is characterized by different degrees of environmental damage associated with them (from minor damage for selective logging to major damage for intensive logging) and therefore the type of intervention might be very different (i.e. more control, change in policy, more experiences on management, more extension, etc.).

13. The type of land tenure has a significant effect on the amount and type of government intervention and control on the use of forest resources. The types of controls on forest resources can be grouped as follows: 1) Private property - Large-scale owners (timber companies, ranchers); 2) Private property - small -scale owners (settlers, colonists); 3) Community Land (traditional river communities); 4) Indigenous areas; 5) Conservation Management Units (Extractive and Forest Reserves and); 6) Conservation Protection Units (Parks; Ecological Reserves, etc.); 7) Military areas; and 8) Unclaimed Areas. See Annex 2 for more details. Forest harvesting takes place on all these types of land controls, with varying degrees of intensity.

14. By combining the two variables (timber extraction models and land ownership), it is possible to identify the most important timber areas in the Amazon (see Table 1). The combination of variables offers a framework that enables us to locate the most important patterns of exploitation by type of land tenure. Each individual cell in the table was classified based on the estimated percentage of timber production by extraction model that originates in that type of land ownership. Therefore, the various interventions of the project will concentrate mainly on the boxes in which timber activities are most important in the Amazon. In addition to using this criteria to select the boxes for interventions, other boxes were selected because of the high potential for learning from these areas and because they represent different land tenure arrangements.

15. The areas of project interventions chosen for control and monitoring activities (Component 3); for promising initiatives (Component 2) and for developing a model national forest (Component 4) are shown in Table 2.

Table 1. Matrix of land control and logging models - Percentage of timber extraction occurring by type of land control

<i>Extraction</i> <i>Land Control</i>	<i>Selective Logging on Várzea</i>	<i>Intensive Logging on Várzea</i>	<i>Highly Selective Logging on Terra Firme (Mahogany)</i>	<i>Semi Intensive Logging on Terra Firme</i>	<i>Intensive Logging on Terra Firme</i>
Large land-owners	Moderate	Moderate	Low	Low	Very High
Small land-owners	Low	Moderate	Very Low	Moderate	Very Low
Traditional communities	Low	Low	Very Low	Low	Very Low
Extractive reserves	Very Low	None	Very Low	Very Low	None
National forests	Very Low	Very Low	Absent	Very Low	None
Indigenous lands	Low	Very Low	Moderate	Low	Very Low
Public lands	High	Low	High	Moderate	Very Low

Source: Verissimo (1995).

Notes: High, moderate, low, very low and none were classified as follows:

- Very high: > 60 % of this extraction model occurs in this type of land control
- High: > 40 e < 60 % of this extraction model occurs in this type of land control
- Moderate: > 20 e < 40 % of this extraction model occurs in this type of land control
- Low: > 10 e < 20 % of this extraction model occurs in this type of land control
- Very low: < 10% of this extraction model occurs in this type of land control
- Absent: < 1% of this extraction model occurs in this type of land control

Table 2. Areas of project intervention chosen for control and monitoring activities (Component 3); for promising initiatives (Component 2) and for developing a model national forest (Component 4)

<i>Extraction Land Control</i>	<i>Selective Logging on Várzea</i>	<i>Intensive Logging on Várzea</i>	<i>Highly Selective Logging on Terra Firme (Mahogany)</i>	<i>Semi Intensive Logging on Terra Firme</i>	<i>Intensive Logging on Terra Firme</i>
Large land-owners	pi=1	cm		cm	pi=3
Small land-owners		cm		pi=4 and cm	
Traditional communities	pi=2				
Extractive reserves				pi=1	
National forests				cm and nf	
Indigenous lands			pi=2	pi=2	
Public lands *	cm			cm	

* in public lands the intervention is not through promising initiatives because logging in public lands is illegal. However, intervention will take place through control and monitoring activities.

pi= promising initiatives (Component 2)
cm=control and monitoring (Component 3)
nf=national forest Tapajós (Component 4)

Lessons Learned from Previous Bank Involvement

16. The Bank has lent over US\$2 billion for forestry components and free-standing forestry projects. The Forestry Policy Paper of 1978 re-directed Bank financing from an almost exclusive focus on industrial forestry, to a new generation of social and rural development and environmental forestry projects. A 1991 Operations Evaluation Department (OED) study of the Bank's forestry experience concludes that the overall performance of this new generation of projects has been satisfactory. OED analysis shows that institutional weaknesses have seriously undermined the more complex collaborative arrangements usually needed in environmental forestry projects due to their multi-purpose nature. However, few of the Bank-financed institution-strengthening components have had lasting effects, a major concern given the increasing complexity of projects and the diversity of the demands being placed on institutions. OED concludes that the nature, structure and operational effectiveness of institutions are critical determinants of the impact of environmental forestry projects, and that this is likely to intensify in the 1990s as political pressure is exerted on environmental and forestry institutions to broaden their agendas to incorporate protection, management, biodiversity and conservation.

17. The OED report concludes that the main determinants of satisfactory forestry project performance are: (i) careful project preparation with realistic goals, use of appropriate technologies and low or reasonable balance of risk; (ii) favorable marketing structure; (iii) effective and efficient management; (iv) adequate institutional capacity; (v) if coordination is required between many line agencies in the planning and implementation of the project, an effective mechanism for coordination is required; (vi) monitoring and

evaluation needs to be given emphasis to facilitate supervision and final evaluation; (vii) intersectoral and macroeconomic linkages affecting the sector must be well understood and forestry sector concerns should be systematically incorporated into macroeconomic policy formulation and reform; and (viii) governments need to develop mechanisms to involve the private sector and NGOs in programs aimed at improved management and conservation of native forests.

18. The recent restructuring of the Brazil National Environmental Project (Ln. 3173-BR) also provides useful lessons relevant for the proposed project. The experience from that project stresses the need for: (i) new, decentralized approaches to environmental management, including the use of market-based incentives and the development of mechanisms to give latitude to lower level jurisdictions for more flexible interpretation of federal standards appropriate to the local context; (ii) more strategically oriented, simple project design, in line with institutional capacity; and (iii) rational sequencing of project activities with a realistic (i.e., longer) time horizon. For decentralization to be effective, the federal entity should provide incentives, training and technical assistance to the state so that local capacity may be developed to enforce regulations and implement policy.

19. A Bank Regional paper (December 1993) examines experience with 24 natural forest management projects in Latin American countries from 1930-1993 to identify lessons for future policy and project initiatives¹. This study, which sets out the impediments and suggests solutions, has demonstrated that the main constraints that have limited the implementation of good forest management are: (i) contradictory policies which create perverse incentives to destroy forests, coupled with lack of profitability and political will; (ii) failure to involve local communities in forest management schemes, often leading to land invasion; (iii) weak, overcentralized institutions; and (iv) lack of research information and databases for decision making.

20. Other lessons learned come from projects in Asia and Africa. These Bank/GEF experiences demonstrate key lessons that have been taken into account in the design of the proposed project. The design implications may be summarized as follows:

- (i) *Involve local communities and the private sector.* The sustainability of forestry projects has often suffered from the failure to involve the local people and the private sector in project activities. Early and continued involvement of the local communities, NGOs and the private sector is essential to: (a) incorporate consideration of the needs and concerns of the local population into the overall program; (b) ensure that the public is working for, rather than against, the project; and (c) recruit the community and the private sector in sharing the costs, as well as the benefits, of better forest management. Moreover, the manner in which beneficiaries are approached, organized and involved in project activities is critical, as is the need to take into account the financial constraints of the private sector.

¹ "Prospects for Improved Management of Natural Forests in Latin America", Dec. 93, Latin Dissemination Note #9.

(ii) *Decentralize management.* Experience with forestry projects shows that centralized decision making results in poor management at the field level. Planning, policy and implementation should be decentralized to state and local authorities, limiting central government responsibilities to normative, enforcement and administrative functions. But knowing that there are very few successes of decentralization in Latin American countries, caution must be taken to ensure that whatever system of forest monitoring and project implementation is designed, the complexity should realistically take into account institutional capacity. And because cooperation and coordination is required among many line agencies in the planning and implementation of the project, an effective mechanism for coordination is essential.

(iii) *Get policies right.* Forestry projects have tended to pay little attention to policy distortions and incentives leading to natural forest depletion. The legal and regulatory issues governing both forest use and the powers, functions and responsibilities of the institutions themselves must be addressed early on to ensure a workable policy environment.

(iv) *Use and improve available technical packages.* Although the technical models for sustainable forest management are not complete, enough is known to improve current forest management practices, if carefully designed to minimize risks. One potentially viable option would be to provide incentives to the private sector to experiment with sustainable methods in the course of their normal operations.

II - THE PROJECT

Project Objectives

21. The overall objective of the project is to support the adoption of sustainable forest management systems in the Amazon *through strategic actions and pilot experiments in priority areas*. The five-year project would support: (i) strategic analysis and recommendations for reform of policies and incentives affecting the forestry sector; (ii) the promotion of innovative initiatives by non-governmental agents -- individuals, enterprises, private organizations -- designed to test new approaches to sustainable forest management practices and to promote patterns of behavior which favor sustainable development; (iii) the establishment and implementation of a system to monitor and control forest harvesting activities in two pilot areas; and (iv) the development and implementation of an effective participatory management and conservation plan for the Tapajós National Forest Reserve with emphasis on social forestry activities.

Project Description

22. The project would consist of four components, plus project administration:

23. Component 1. Strategic Analysis of Public Policy and Incentive Systems (US\$1.9 million, 10% of project costs). The goal of this component is to carry out a strategic analysis of the main policies and incentive systems that affect the forestry sector, and to propose key reforms and new systems. There are essentially two tasks: the first is to gather data and background information on which to base decisions about changes in policy and forestry legislation, and the second is to influence the policy-making process. The project would finance, *inter alia*, workshops, preparation of briefing notes, proposals for legislation and studies. Studies would be financed only where clear needs are justified by existing data gaps. The project would also support the operational costs of a "think-tank" forestry group (Forestry Sector Studies Group) to be established within MMA via a Portaria. During appraisal, agreement was reached on a draft *portaria* describing the composition and roles of this group and how it would function within MMA. The Forestry Sector Studies Group would consist of experienced and knowledgeable people working on a part-time basis and supported by a full time Technical Coordinator working in the Ministry. The Group would consist of seven specialists in the following disciplines: forest management, ecology, economics, policy, forestry administration, sociology and law, with the possibility of inviting *ad hoc* experts as needed. The functions of the group would be to: (i) elaborate and propose a strategic plan for policy analysis, based on a previously commissioned study; (ii) propose strategic studies; (iii) receive and analyze the studies; and (iv) propose formulation and/or reformulation of public policies. The first task of the Forestry Sector Studies Group is the elaboration of a strategic plan, which would evaluate priorities and ensure integration with other components of the project (see Annex 1). In addition to the above-mentioned tasks, the Forestry Sector Studies Group would also analyze results from other components of the project and other experience, so as to become a focal point for policy recommendations in the

sector (see Annex 1 for details of this process). This component would be entirely financed by the British Overseas Development Administration (ODA). During negotiations, it was agreed that MMA would appoint the Technical Coordinator and would establish the Forestry Sector Studies Group within 60 days of effectiveness of the Grant Agreement (para. 53 (a)).

24. Component 2: Testing of Promising Forest Resources Management Initiatives (US\$ 7 million, 39% of project costs). This component would support ongoing or new sub-projects in sustainable forest management in the Amazon.

Pre-proposal phase: during preparation, a team of Brazilian consultants assessed existing forest resources management initiatives and presented a report to the appraisal mission (see Annex 2-Attachment 1 for all potential initiatives). During the appraisal mission, the Government, Bank and donor representatives pre-selected 21 sub-projects for financing under this component. Between appraisal and negotiations, IBAMA requested pre-proposals from all eligible sub-projects. Pre-proposals were evaluated during negotiations by Government, Bank and donor representatives and a list of sub-projects was agreed (see Annex 2 - Attachment 2). It was also agreed during negotiations, that pending additional availability of funds, new initiatives could enter the program following the procedures outlined below.

Sub-projects were selected from a range of situations that would maximize learning, representing various types of forests, models of extraction and land tenure arrangements in the Amazon region. Pre-established agreed criteria were used in the selection process. These include: (i) innovativeness; (ii) potential replicability; (iii) environmental sustainability; (iv) participation of the surrounding populations and social viability; (v) impact on development of sustainable management and use of forest resources; (vi) financial and economic viability; (vii) technical capacity of the executing institution; and (viii) leadership and commitment of the executing institution. Eligible activities under each sub-project include, among others: technical assistance; training; certification; technical visits; minimum infrastructure and equipment; and administrative expenses. Eligible institutions to carry out the sub-projects are NGOs, academic and research institutions, non-profit foundations and producers associations and cooperatives (see Annex 2, Attachment 2 for the list of institutions). Private companies are not grant recipients, but certain sub-projects would be carried out by the eligible institutions listed above on private lands with the endorsement or matching support of a private company. Support to sub-projects would be up to US\$500,000 per sub-project for three years. In addition to financing sub-projects, this component would finance the following: (i) dissemination and networking activities; (ii) independent assessments; and (iii) monitoring costs. For the purposes of disseminating and networking, the sub-project "Management of timber and non-timber forest products by traditional communities along the Tapajos National Forest", discussed in para 29 under Sub-component 1 of Component 4 would also be treated as a promising initiative.

Full proposal phase: detailed proposal forms and guidelines were developed during the appraisal mission. As soon as the Technical Coordinator for this component is appointed, IBAMA would request full proposals from all the selected implementing entities. During negotiations, agreement was reached that IBAMA would send to the Bank and donor representatives, for their final approval a full proposal for each sub-project (para 53 (b)). The guidelines include, among others, a discussion of any possible environmental impact and social assessments of the sub-projects and how these will be minimized and monitored. Each proponent should ensure in their proposal that sub-projects would: (i) follow good environmental practices, and (ii) properly address any sensitive social issues. Grants would only be provided for sub-project proposals which demonstrate clearly defined environmental and public benefits. For sub-projects in areas inhabited by indigenous communities, the full proposals would document the participation of affected indigenous populations in sub-project design and implementation, and contain a detailed Indigenous Peoples Development Plan (as required by the Bank's Operational Directive 4.20, Indigenous Peoples). This component would be entirely financed by the German Kreditanstalt für Wiederaufbau (KfW). IBAMA would appoint a Technical Coordinator for this component, who would be responsible for monitoring and supervising the sub-projects and for networking and dissemination of sub-project results. Bank supervision missions would also ensure that these guidelines have been followed. During negotiations, agreement was reached that the Technical Coordinator for this component would be appointed by IBAMA within 60 days of grant effectiveness (para. 53 (c)).

25. Component 3: Pilot Monitoring and Control Program for Logging Activities (US\$4.1 million, 23% of project costs) This component would implement an integrated pilot monitoring and control system for logging activities in two pilot areas in the Brazilian Amazon: an area of upland forests (*terra firme*) with approximately 5 million hectares in the State of Pará, and an area of both upland and flooded forest (*várzea*) with approximately 6 million hectares in Amazonas state (Annex 3). These sites encompass the two major forest types in the Amazon, with distinct harvesting methods, transport and environmental impacts. The objective is to promote more effective regulation of forestry activities.

26. Implementation of this component would occur in two phases:

Phase 1. Assessment of the current system and the development of a new pilot system for control and monitoring of forest activities. During the first two years of the project the following activities would occur: (i) Review of existing norms, simplification of procedures and elimination of regulations which do not directly target environmental benefits. The review would focus particularly on resolving conflicting procedures among federal and state environmental agencies; (ii) Assessment of the current status of logging activities and the timber industry in the pilot areas; (iii) Development of an integrated system for licensing and monitoring

forest activities. This system would consolidate information on licensing and forest activities from federal (IBAMA) and state environmental agencies (SECTAM and IPAAM). IBAMA has started gathering information regarding current control posts, equipment and monitoring personnel of IBAMA, SECTAM and IPAAM in the two pilot areas. A database integrated with a Geographic Information System would be developed for storing all information related to logging activities and new licenses by all environmental agencies involved in the pilot areas. This system would use satellite imagery to detect land cover changes. A private non-profit group or consulting firm would develop the system; (iv) Implementation of the integrated system. During this period, staff from the environmental federal and state agencies would be trained in how to use the system as a tool for the evaluation of new requests for deforestation and timber harvesting licenses. New licenses would be issued only after analyzing previous experiences and after field inspections. NGOs or private companies would participate in field inspections; (v) Production of a handbook with guidelines for field inspections; (vi) Development of a bar-code system to control the transport of timber in the Santarém pilot area; and (vii) Development of a monitoring system for *várzea* forests. Considering the specificity of logging activities in *várzea* forests (extremely selective logging, lack of clear land tenure), a specific system for monitoring these areas on the ground would also be developed.

Phase 2: Field Implementation of a new control and monitoring system in both pilot areas. After Phase 1 has been implemented, IBAMA would submit to the Bank and donors a field-based control and monitoring plan for the two pilot areas within 36 months of effectiveness (para. 53(d)). This plan, once approved, would be implemented in years 4 and 5. Fines and penalties would be systematically levied on illegally harvested logs.

27. Overall coordination of this component would be carried out by IBAMA staff at IBAMA/SUPES/AM, which would be responsible for channeling funds and sub-contracting NGOs and private companies for specific activities. Two Technical Coordinators for this component would be hired by IBAMA, one for Santarém and one for Manaus, within 60 days of effectiveness (para. 53(c)). The role of the Technical Coordinator would be to carry out the component, coordinate with the entities, prepare planning and progress reports, and liaise with the overall Project Coordinator, other components and Bank/Donor missions. Given that the Santarém pilot monitoring and control area also includes the Tapajós National Forest, the Technical Coordinator for Santarém would also be responsible for the Control and Monitoring sub-component of the Tapajós National Forest (Component 4, Subcomponent 2, para. 29). This component would be financed by the Rain Forest Trust Fund (RFT) for parts of Phase 1 (i, iii, and iv) and by KfW for the rest of the component. This component would be implemented through the coordinated actions of (i) Federal and state environmental agencies, and (ii) other entities and NGOs, which would assist as subcontractors with specific activities. IBAMA presented at negotiations a draft cooperation agreement between IBAMA and

SECTAM and IBAMA and IPAAM. Prior to disbursement, the IBAMA/SECTAM and IBAMA/IPAAM agreements would have been signed and become effective (para. 55 (a)).

28. Component 4: Participatory Management and Conservation of Tapajós National Forest (US\$3.4 million, 19% of project costs). The objective of this component is to develop and implement an effective participatory management plan for the Tapajós National Forest. To develop this component, several pre-investment studies were financed to resolve existing land use conflicts, discuss among different stakeholders the different land use rules for the area, and define the eligible activities and implementation procedures (see Annex 4 for details). Before and during the appraisal mission, the following activities took place: (1) consultation workshop with local communities to decide whether they want to be excluded from the Tapajós National Forest by redrawing the boundaries or whether they want to be included. Seventy percent of the communities voted to be excluded from the National Forest; (2) a decree (No. 794 E939, 1995) for the redefinition of the Tapajós National Forest's limits had been drafted and presented to the Agriculture and Rural Policy Commission of the Senate, such draft decree delegates to MMA/IBAMA the final delimitation of the community - land boundaries; (3) a draft zoning plan for the Tapajós National Forest to delineate zoning and land uses in the FLONA has been prepared by a consulting firm, IMAFLORA. This zoning plan was discussed during the appraisal mission and during a workshop in Santarém in July 1996. The final version of the zoning plan prepared by IMAFLORA was sent to the Government, Bank and donor representatives in September 1996. Additional local consultation workshops would take place during implementation to finalize the definition of the boundaries of the community land. During negotiations, it was agreed that IBAMA would send to the Bank and donor representatives, for their approval, the final version of the Zoning Plan for the Tapajós National Forest before it is approved by IBAMA within 18 months of effectiveness (para. 53 (e)).

29. Investment activities have been agreed and include the following:

Subcomponent 1: Management of timber and non-timber forest products by traditional local communities, to be implemented by two local community associations (AITA and ASMIPRUT) with the technical assistance of the Santarém Syndicate of Rural Workers (STR) and a local NGO (Projeto Saude e Alegria). The first step of this activity would be to prepare a natural resources Utilization Plan. During negotiations, it was agreed that the entities would send to the Bank and donor representatives, for their approval, the Utilization Plan within 18 months of effectiveness (para. 53(f)). Other activities would include: (i) strengthening of community organization and capacity; (ii) development of community health programs; (iii) implementation of agroforestry systems; and (iv) development of forest resources management programs. The four implementing entities of this component submitted a proposal in May 1996 detailing subcomponent activities, expected outputs, rules for use of funds and administrative arrangements. The proposal was approved by the Bank and donor representatives (see Annex 4 for details on activities).

Subcomponent 2: Strengthening local capacity to monitor and control illegal activities, to be implemented by IBAMA-Santarém inside the National Forest and in the surrounding areas. This subcomponent would support demarcation of limits, the recovery or construction of four control posts at strategic locations, vehicles and communications equipment, and the establishment of an enforcement program. During the appraisal mission, a team visited the Tapajós National Forest and confirmed that three of the posts proposed would be located in areas in which infrastructure already exists. Two of these sites are on the eastern outer border of the National Forest, by the Cuiabá-Santarém Highway. The other is located near the city of Aveiro, which will be excluded from the National Forest. One post is proposed to be located by the outer southern border of the National Forest, by the river, and near urban areas. During negotiations it was agreed that IBAMA would send to the Bank and donor representatives, at the time of the Annual Action Plan for their review and approval, the exact location of the posts and evidence of consultation with communities before posts are built (para. 45)

Subcomponent 3: Development of an environmental education program that would focus on prevention of forest fires and protection of wildlife, to be implemented by IBAMA and local NGOs (GDA and STR); and

Subcomponent 4: Development and implementation of an ecotourism plan, to be implemented by local NGOs, IBAMA and the local government agency responsible for tourism (see Annex 4 for details). During negotiations it was agreed that IBAMA would send to the Bank and donor representatives for their review and approval, the Ecotourism Plan, within 24 months of effectiveness (para. 53(g)).

30. The Tapajós Commission responsible for overall coordination and implementation of this component would be implemented 60 days after effectiveness according to Portaria 61 of July 12, 1996 (para. 53(c)). This commission would be composed of representatives from government (3 - IBAMA, SECTAM, municipal government), social associations (3), private sector (2 - timber association and tourism industry), NGOs (2) and researchers (2). The roles of the Commission would be to: (i) evaluate and redefine, if necessary and discussed with the Bank, the activities to be implemented under component 4; (ii) analyze and evaluate the operational procedures; and (iii) provide input to the preparation of the Annual Action Plans. A Technical Coordinator would be hired to oversee this component in Santarém. The Technical Coordinator would be responsible for Subcomponents 1, 3 and 4; Subcomponent 2 would be overseen under Component 3 (see para. 27). During negotiations it was agreed that IBAMA would hire the Technical Coordinator for this component within 60 days of effectiveness (para. 53(c)).

31. Project Administration (US\$ 1.6 million, 9% of project costs). Project administration would support a small team that would be responsible for the coordination of the various components and that would be responsible for: (i) preparation of Annual Action Plans, (ii) supervision reports or any request for information by donors or the

Bank, (iii) monitoring and evaluation of project activities, and (iv) assurance that subsidiary agreements and financial execution of all project agreements are carried out effectively. Project administration would also finance the operating costs of the two project Commissions (see para. 30 and 39).

Project Costs and Financing

32. Total project costs are estimated to be US\$20 million, including contingencies (see Schedule A-1). The project is expected to be carried out in five years. The project would be financed by the Rain Forest Trust Fund (US\$2.0 million, the RFT grant), the German Kreditanstalt für Wiederaufbau (KfW, DM20 million, or US\$12.5 million equivalent), the German Agency for Technical Cooperation (GTZ, US\$2.2 million equivalent), and the Federative Republic of Brazil (US\$1.4 million). The Brazilian Government plans to sign an agreement with the British Overseas Development Administration (ODA, US\$1.9 million equivalent) to further finance the project. Counterpart contributions, in cash or kind, would also be required from participating organizations, such as NGOs and community associations, if they benefit directly from the project. The project (all sources) would finance technical assistance and training; workshops and seminars; travel and subsistence expenses; materials and supplies; the acquisition and use of computers; field, office and transportation equipment; some small-scale civil works for control activities; and fees of intermediary agencies, if any, such as UNDP and Banco do Brasil (see para. 37). All expenditures except salaries of public employees, arms, and taxes would be eligible for financing. Project expenditures have been allocated for funding among the co-financiers during appraisal on the basis of parallel co-financing. The proposed financing plan is presented in Schedule A-2. Detailed project costs are presented in Annex 7.

33. The recipient of the proposed RFT grant would be the Federative Republic of Brazil. The grant would be passed on by the Government to IBAMA through a subsidiary agreement between MMA and IBAMA. During negotiations it was agreed that the IBAMA/MMA agreement, acceptable to the Bank, would have been signed as a condition of grant effectiveness (para. 54(a)). IBAMA in turn would use the grant funds for its own expenditures or would pass on funds on the basis of implementing agreements with executing agencies. IBAMA would sign a UNDP Technical Assistance Project Agreement to be financed by all or part of the grant funds, with IBAMA as the executing agency. During negotiations it was agreed that the IBAMA/UNDP agreement, acceptable to the Bank would have been signed as a condition of grant effectiveness (para. 54(b)).

Project Preparation and Implementation

34. Preparation. The project was prepared using a *participatory approach* including four workshops, the establishment of a consultative commission (composed of local and national governments, private enterprises, researchers, NGOs and local communities with extensive experience in forest management issues) and the use of a technical group to

coordinate the consultations and write the final project proposal. This approach would be continued during implementation. Also, a *flexible and pragmatic approach* to project design and implementation has been adopted to ensure that learning from project implementation activities takes place as quickly as possible. Constant monitoring and periodic evaluation of project activities would allow decisions to be re-assessed from time to time. This *process-oriented* nature distinguishes this project from standard investment projects, since the detailed planning of some of the project interventions would be carried out during implementation. This approach will continue during project implementation.

35. Project Administration. MMA is responsible for overall coordination of the Rain Forest Pilot Program, and would be responsible for the overall monitoring of this project and the necessary coordination with other projects under the Pilot Program. IBAMA has a **Technical Secretariat** for all Pilot Program projects under its responsibility. Duties include: (i) liaison with the Pilot Program coordination in MMA, with external agencies and with other internal units of IBAMA relevant for project planning and implementation, (ii) monitoring of project implementation, and (iii) review, aggregation and forwarding of Annual Action Plans and progress reports. During negotiations, it was agreed that prior to effectiveness, a Project Coordination Unit (PCU) would be established by IBAMA (para. 54(c)). This Unit would be located within, but largely independent from, the State Superintendency in Manaus, with the special status of a decentralized “Unidade Gestora” (management unit), which confers greater autonomy and flexibility to this unit than to normal field units. The PCU would be headed by a senior IBAMA official as Project Coordinator. A branch of the PCU would be located in Santarém, due to the proximity of project components to that city. The PCU would be staffed with four technical supervisors or coordinators for the various project components (except for strategic studies), two of whom would work out of IBAMA’s Santarém office (for the FLONAS and the Santarém Monitoring and Control components), and two financial administrative staff (one of whom would be based in Santarém). The financial flows and the accounting for expenditures would be controlled by the Project Coordinator, although transfers would not necessarily pass through the PCU’s project accounts in Manaus, but could be made directly by IBAMA headquarters or via a financial agent to the implementing agencies and units.

36. The Strategic Studies component to be financed by ODA would be headed by a technical coordinator (full-time), who would work with a group of seven part-time specialists (para. 23). This unit would liaise with IBAMA’s Technical Secretariat, with the PCU and with the Amazon Monitoring and Policy Analysis Unit in MMA, to be created under a separate project now under preparation. During negotiations, it was agreed that prior to grant effectiveness, ODA would sign a technical cooperation agreement with the Federative Republic of Brazil. (para. 54 (d)).

37. During negotiations, it was agreed that prior to effectiveness, KfW would sign a grant agreement with the Federative Republic of Brazil (para. 54(e)). If an agreement is reached, KfW would also enter into a separate grant agreement with a **financial agent** for the Promising Initiatives component (Component 2) and the subcomponent “Community

Management of Natural Resources along the Margin of FLONAS Tapajós” (Component 4). IBAMA would enter into an agreement with the financial agent. This agreement would define the mechanism by which the PCU and the financial agent would jointly supervise the implementation of these (sub)components, with the financial agent being specifically responsible for the advance of funds to implementing entities, under contract, and for the control of their expenditures and accounting. It was agreed during negotiations that Banco do Brasil should be confirmed as the financial agent (para. 53(h)).

38. Project activities would be implemented by local units of IBAMA in the States of Amazonas and Pará and through a variety of local groups (NGOs or community associations) (see Annex 6), under subsidiary agreements with IBAMA’s PCU, UNDP or the financial agent. Two experts provided by GTZ would assist the implementing entities out of Manaus and Santarém.

39. A Project Consultative Commission would be established within 60 days of effectiveness (para. 53(c)) and would be convened to supervise overall project implementation activities and to ensure the participation of a broad range of stakeholders in project management. The Commission would be composed of the Project Coordinator of IBAMA(1), representatives of the private sector (2), NGOs (2), community organizations (2), state environmental agencies (OEMAS, 2) and the financial agent (1). The Commission would meet at least twice a year to: (i) evaluate project activities; (ii) make changes during project implementation; (iii) approve annual operation plans; and (iv) approve technical and financial reports.

40. Procurement Arrangements for the RFT Grant. The proposed procurement arrangements are summarized in Schedule B-1. Expenditures would include those for consultant services (by individuals, firms or selected NGOs), training, varied equipment (computers, boats, cars, field and office equipment), materials and supplies, travel and subsistence expenses, maintenance of equipment, and fees charged by UNDP or other financial agents. Purchases would be dispersed over time and space during the period of the project (five years), and would be implemented by a variety of agencies (such as IBAMA offices, universities, institutes, NGOs and community associations). For these reasons, packaging of procurement across components and subcomponents would be difficult. All Bank-financed components would be expected to be procured in accordance with the January 1995 *Guidelines for Procurement under IBRD Loans and IDA Credits* (para. 53(j)). In order to ensure that Bank procedures are followed, the PCU at IBAMA would include, for the Bank’s review, a specific procurement program in its Annual Action Plans. The Government of Brazil may avail itself of a UNDP Technical Assistance Project to administer all or part of the RFT grant funds. Procurement by UNDP on behalf of the executing agency (IBAMA) would follow the rules stipulated in the grant agreement.

41. Contracts for goods are not expected to exceed US\$100,000 by beneficiary, and would be awarded through national or international shopping. Recurrent costs of the implementation of certain subcomponents and sub-projects would include materials,

supplies and travel expenses, and would be procured through direct purchase. Procurement under sub-projects which are implemented by private sector entities would be undertaken in accordance with established commercial practices in the sector, provided that these are acceptable to the Bank. The threshold contract values indicated above for purchases of civil works and goods, respectively, would also apply to procurement using commercial practices.

42. The selection and appointment of consultants would follow the August 1981 *Guidelines for the Use of Consultants by World Bank Borrowers and by the World Bank as Executing Agency* (para. 53 (i)). Contracts with consulting firms valued at US\$100,000 or more would be subject to prior Bank review (terms of reference, letter of invitation, recommendation for award and proposed contract). For individual consultants, prior Bank review (terms of reference, qualifications and conditions of employment) would be required for contracts valued at US\$50,000 or more. Below these limits, the Bank's prior review would apply only to the terms of reference. The use of standard documentation for the employment of consultants (letters of invitation and forms of contract) would be agreed with the Bank. *Ex-post* review would be carried out by Bank supervision missions, at which time Bank staff would review in detail the procurement procedures used.

43. Disbursements of the RFT Grant. IBAMA would manage a Special Account in a commercial bank acceptable to the Bank, in which funds from the Rain Forest Trust Fund, with an initial allocation of US\$200,000, would be deposited and subsequently disbursed to implementing agencies. KfW would adopt an equivalent procedure. The PCU would prepare appropriate documentation in support of disbursement requests, sign contracts with implementing entities, disburse funds or cause them to be disbursed, manage the financial records and have the project account audited annually. The proposed allocation of the RFT grant funds is presented in Schedule B-2. Disbursement projections for total project funds are also presented in Schedule B-2. Grant funds would be disbursed against SOEs for consultant services for firms whose contract value is below US\$100,000; consultant services for individuals whose contract value is below US\$50,000; contracts for goods below US\$100,000 and for recurrent costs (materials and supplies and travel expenses). Supporting documentation for such expenditures would not be submitted to the Bank but would be made available for inspection by Bank supervision missions. The closing date for the project would be six years after signing of the grant agreement.

44. Auditing. IBAMA would maintain a separate account for the project and would keep adequate records to reflect its execution in accordance with consistently applied sound accounting principles. The Special Account and all project accounts would be subject to an annual audit by independent auditors acceptable to the Bank. The terms of reference for the auditors would include, *inter alia*, provision of a Management Letter, a separate opinion on the use of the Special Account and SOEs for the project accounts and Special Accounts. Copies of the auditor's report would be sent to the Bank within six months after the end of each fiscal year (para. 53(j)).

45. Annual Action Plans and Progress Reports. During negotiations, it was agreed that Annual Action Plans would be submitted to the Bank and donor representatives for approval prior to the beginning of each annual supervision mission (para. 53(k)). Both IBAMA and MMA would submit the Annual Action Plans for their respective components. The Annual Action Plan would include a list of priority activities, including details about responsibilities, expected results, associated monitoring indicators, and timetable. The PCU would track information on all project activities provided by the implementing agencies and entities. During negotiations, it was agreed that the PCU in IBAMA would submit to the Bank and donor representatives, semi-annual progress reports tracking physical and financial performance targets by March 31 and September 30 of each year (para. 53(l)). A model report would be sent by the Bank to the Government before the first report is due. MMA would provide to the Bank copies of all progress reports, action plans, and documents prepared in accordance with ODA requirements and procedures. During negotiations, it was also agreed that once a year after receipt of the progress reports, the Bank, donor representatives, the PCU and MMA would jointly carry out a supervision mission to review progress made against objectives and monitoring targets (para 53 (l)).

46. Program Monitoring and Evaluation. The PCU would be responsible for ensuring that project results and impacts are monitored throughout the life of the project (see Annex 5 for details). During the appraisal mission, agreement was reached on the project's general performance monitoring indicators for each component (see Annex 5). The PCU would enlist the assistance of independent consultants who would meet during the Mid-Term Review (see para. 47) to review the progress against performance indicators and in meeting subcomponent and in the overall program objectives, and to distill the lessons learned. During negotiations it was agreed that terms of reference for the Mid-Term Review would be sent to the Bank and donor representatives for comment and approval one month before the review (para. 53 (m)). In addition, each subcomponent or sub-project would set specific objective performance indicators at the time of the Annual Action Plan and would periodically provide data on fulfillment of performance indicators (para. 53(k)). The PCU would visit subcomponents and sub-project sites on a needs basis to review implementation and to make suggestions on how to improve performance.

47. Mid-Term Review. During negotiations, it was agreed that the PCU, MMA, the Bank and donor representatives would conduct a Mid-Term Review at the end of the third year to evaluate the project's implementation arrangements and its on-the-ground effectiveness in implementing sub-projects (para. 53(n)).

Project Sustainability

48. The purpose of the pilot initiatives in this project is to promote the sustainable use of forest resources, and increase knowledge and experience. These experiments should provide valuable information on the technologies for sustainable forest management. The

long-term benefit can therefore be maximized through careful monitoring of project implementation and impact. The project will test methods for improving the financial viability, cost recovery and marketing of forest resources, and will disseminate best practices, enabling individual small producers and larger-scale companies to adopt more sustainable forest resources utilization practices than they use now.

Rationale for RFT funding

49. The Government development strategy stresses support for the market economy, sustainable use of natural resources and development of human resources. The project reinforces this strategy. The rapidly deteriorating condition of natural forests and consequent environmental, social and long-term economic losses are the major natural resources issues addressed in this project. These central issues would be addressed through several approaches. One would be to assist the Government in implementing a workable pilot experiment in control of forest resources that could later be expanded to other areas, and in establishing field capacity to implement the regulatory framework for forest resource use. This has not been done effectively in the Amazon. The second would assist the Government in carrying out a few key reforms of the distorted forest policy and incentives system in place today. The project would also support pilot experiments to test the economic viability of sustainable forest resources management in a few private or communal reserves, and thus contribute to their conservation over the long term.

Environmental Aspects

50. It is recommended that this project receive an environmental assessment classification of "B." Under Components 2 and 4, potential risks of overexploitation of forest resources would be minimized by the preparation and implementation of a resource utilization plan (for the areas included under the project) to be approved by the Bank and donor representatives and which would be closely monitored by IBAMA. These plans would be prepared under the project with the involvement of the participating communities, and would regulate the implementation of the least damaging regimes of forest use. Sub-projects under Component 2 would be screened by experienced consultants in the environmental and social fields, and would be selected only if they have no negative environmental or social impacts. For sub-projects in areas inhabited by indigenous communities, the full proposals would document the participation of affected indigenous populations in sub-project design and implementation, and contain a detailed Indigenous Peoples Development Plan (as required by the Bank's Operational Directive 4.20, Indigenous Peoples). These would be approved and subsequently monitored during supervision missions by Bank, donor representatives and IBAMA teams. In accordance with the Bank's 1991 Forestry Policy, the project would not finance commercial logging in primary tropical moist forests and would only support logging activities at a small scale carried out as part of the research to develop sustainable methodologies. Component 4

would include small-scale civil works in the Tapajós National Forest to up-grade IBAMA enforcement control posts. During the appraisal mission, a team visited the Tapajós National Forest and confirmed that the 3 of the 5 posts proposed would be located in areas in which infrastructure already exists. Two of these sites are on the eastern outer border of the National Forest, by the Cuiabá-Santarém Highway. The other is located in the area of the city of Aveiro, which will be excluded from the National Forest. One post is proposed to be located by the outer southern border of the National Forest, by the river, and near urban areas. The Bank requested that the exact location of the remaining posts and evidence of consultation with communities on the location of the posts be sent to the Bank for approval (see para. 53(g)). During negotiations, MMA and IBAMA provided evidence from FUNAI confirming that there are no indigenous people in the Tapajós National Forest. There has been and will continue to be extensive participation of local people in all aspects of this project.

Project Benefits

51. The project would contribute to improved efficiency in forest management by a wide range of users, and enhance the experience of local and state governments in implementing the regulatory framework of forest resource use. The project would directly induce changes in the behavior of local community users, small and large enterprises, to adopt more sustainable and environmentally sound management systems. Local benefits include decreased deforestation, the prevention or decrease of soil erosion and degradation of watersheds, reduced forest fires, as well as protection and livelihood improvement of traditional forest dwellers. Global benefits include the protection of biological diversity and the global climate.

Project Risks

52. The principal risk to the project is the limited institutional capacity of IBAMA. Lack of experience implementing forest resource management projects and working in partnership with local communities and NGOs could result in deadlocks and delays in implementation. Assurances have been sought from IBAMA to appoint highly experienced professionals for the positions of project coordinator and component coordinators. The participatory approach used during preparation has built strong partnerships between the Government and civil society and would also ensure that the broader ownership developed through this process would decrease risks during implementation. In addition, the project will delegate the implementation of certain activities outside of IBAMA. Executors of the different components and activities will be carefully selected, based on their proven records in the fields of forest management, project administration and accountability and they would be expected to work closely with the Government to increase the Government's capacity. Another risk is related to the political willingness of the Government to implement policy proposals (Component 1) and to develop a forestry monitoring and control pilot program (Component 3). Informal assurances have been

received from MMA and IBAMA's high level management that the two components are a high Government priority. A formal group will be established at MMA through a *portaria* to carry out Component 1.

III. AGREEMENTS REACHED AND RECOMMENDATION

53. During negotiations, agreements was reached on the following:
- a) MMA would appoint the Forestry Sector Study Group and the Technical coordinator for Component 1 within a period up to 60 days after effectiveness of the Grant Agreement (para. 23);
 - b) IBAMA would send to the Bank and donor representatives, for their final approval, full proposals for each promising initiative (Component 2) (para. 24);
 - c) IBAMA would appoint the Technical coordinators of Components 2, 3 and 4, the Project Consultative Commission and the Tapajós Commission within 60 days of effectiveness of the Grant Agreement (para. 24, 27, 30, 39);
 - d) IBAMA would send to the Bank and donor representatives, for their approval, a field-based control and monitoring plan for the two pilot areas within a period up to 36 months after effectiveness (Component 3) (para. 26);
 - e) IBAMA would send to the Bank and donor representatives, for their approval, the final version of the Zoning Plan for the Tapajós National Forest before it is approved by IBAMA within a period of up to 18 months after effectiveness (Component 4) (para. 28);
 - f) The entities (AITA, ASMIPRUT, PSA, STR) would send to the Bank and donor representatives, for their approval, the Utilization Plan for the traditional community area of the Tapajós National Forest within a period of up to 18 months after effectiveness (para. 29);
 - g) IBAMA would send to the Bank and donor representatives for their approval the Ecotourism Plan for the Tapajós National Forest within a period up to 24 months after effectiveness (para. 29);
 - h) Banco do Brasil should be confirmed as the financial agent for the KfW co-financed components (para. 37);
 - i) all procurement and hiring of consultants would be carried out in accordance with Bank guidelines (para. 40-42);
 - j) the Special Account and all project accounts would be subject to an annual audit by independent auditors acceptable to the Bank. The terms of reference for the auditors would include, *inter alia*, provision of a Management Letter, a separate opinion on the use of the Special Account, and SOEs for the project

accounts and Special Accounts. Copies of the auditor's report would be sent to the Bank within six months of the end of each fiscal year (para. 44);

- k) the PCU in IBAMA and MMA would prepare for their respective components, Annual Action Plans that would be submitted to the Bank and donor representatives for approval at the beginning of the annual supervision mission (para. 45). MMA would prepare action plans, progress reports and documents in accordance with ODA requirements and procedures (para. 53 (l));
- l) the PCU in IBAMA would submit, for their respective components, Semi-annual Progress Reports to the Bank and donor representatives, tracking physical and financial performance targets, by March 31 and September 30 of each year. MMA would prepare action plans, progress reports and documents in accordance with ODA requirements and procedures and would send them to the Bank. Once a year, after receipt of the progress reports, the Bank, donor representatives, MMA and the PCU would jointly carry out a supervision mission to review progress made against objectives and monitoring targets (para. 45);
- m) the terms of reference for the independent consultants to assist in the Mid-Term Evaluation would be submitted to the Bank and donor representatives for review, one month before the Mid-Term Review (para. 46); and
- n) the PCU in IBAMA, MMA, the Bank and donors would conduct a Mid-Term Review at the end of the third year to assess the project's performance results (para. 47).

54. During negotiations, agreement was reached that the following would be conditions of effectiveness:

- a) the MMA/IBAMA agreement, acceptable to the Bank, would have been signed and become effective (para. 33);
- b) the IBAMA/UNDP agreement, acceptable to the Bank, would have been signed and become effective (para. 33);
- c) a Project Coordination Unit (PCU) has been established by IBAMA (para. 35 and 39);
- d) The ODA Technical Cooperation agreement would have been signed and become effective (para. 36); and
- e) KfW/Federative Republic of Brazil agreement would have been signed and become effective (para. 37).

55. During negotiations, agreement was reached that the following would be a condition of disbursements:

- a) for expenditures to be made under Component 3, that IBAMA/SECTAM and IBAMA/IPAAM agreements would have been signed and become effective (para. 27).

Recommendation

56. I am satisfied that the proposed RFT grant would comply with Resolution 92-2 of the Bank's Executive Directors, and recommend approval of the grant.

Constance A. Bernard
Acting Director, Country Department I
Latin America and the Caribbean Region

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ESTIMATED PROJECT COSTS BY COMPONENT ^{a/}
(US\$ million)**

COMPONENT	Local	Foreign	Total	% Base Cost
1. Strategic Studies	1.6	0.3	1.9	10
2. Testing of Forest Management Initiatives	7.0	0	7.0	39
3. Pilot - Monitoring and Control Program	3.7	0.4	4.1	23
4. Management of Tapajós National Forest	3.5	0	3.5	19
5. Project Coordination	1.6	0	1.6	9
Project Total	17.4	0.7	18.1	
6. Technical Cooperation			1.9	
Project Total & Technical cooperation			20.0	

^{a/}Including contingencies.

BRAZIL

**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT**

**SUMMARY OF PROJECT COSTS BY FINANCIER (including contingencies)
(US\$ million)**

	RFT	KfW	GTZ	GOV/ODA*	Total
Component 1				1.9	1.9
Strategic Studies					
Component 2		7.0			7.0
Testing of Forest Management Initiatives					
Component 3	0.4	3.1		0.6	4.1
Pilot - Monitoring and Control Program					
Component 4					
Management of Tapajós National Forest					
Community Management		1.6			1.6
Monitoring and Control of FLONA		0.6		0.7	1.3
Ecotourism		0.2	0.02	0.1	0.32
Environmental Education			0.30		0.30
Project Coordination	1.6				1.6
Project Total	2.0	12.5	0.32	3.3	18.1
GTZ Technical Cooperation			1.90		
TOTAL	2.0	12.5	2.2	3.3	20.0

* The Brazilian Government is currently negotiating assistance from ODA to finance Component 1.

BRAZIL

**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT**

SUMMARY OF PROPOSED PROCUREMENT ARRANGEMENTS

(US\$ million)

Project Element	ICB	NCB	Other	NBF	TOTAL
Sub-Projects				6.3 (0)	6.3 (0)
Civil works				0.4 (0)	0.4 (0)
Goods					
Vehicles & Equipment			0.02 (0.02)	1.3 (0)	1.3 (0.02)
Materials & Supplies/ printing			0.4 (0.04)	0.5 (0)	0.9 (0.04)
Travel			0.8 (0.3)	0.76 (0)	1.6 (0.3)
Consultant Services			1.5 (1.5)	4.7 (0)	6.2 (1.5)
Training			0.05 (0.05)	0.47 (0)	0.5 (0.05)
GTZ (technical cooperation)				1.9 (0)	1.9 (0)
ODA (technical consultants)				0.1 (0)	0.1 (0)
Administrative Expenses			0.09 (0.09)	0.1 (0)	0.2 (0.09)
Recurrent costs (salaries, maintenance)			0.6 (0)	0.03 (0)	0.6 (0)
Total			3.46 (2.0)	16.56 (0)	20.0 (2.0)

Note: Numbers in parentheses reflect RFT financing
 ICB = International Competitive Bidding
 NCB = National Competitive Bidding
 Other = includes shopping procedures and consulting services to be procured
 according to Bank guidelines
 NBF = Non-Bank-financed components

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****SUMMARY OF DISBURSEMENT ARRANGEMENTS
(US\$ '000)**

CATEGORY	RFT Funding	Item and % of Expenditures
(1) For Component 3		
(a) Consultants' Services	367	100%
(b) Training	45	100%
(2) For the PCU		
(a) Consultants' Services	1,152	100%
(c) Goods	21	85%
(b) Administrative Expenditures	415	100%

RFT DISBURSEMENT SCHEDULE (US\$ million)

BANK FY	FY97	FY98	FY99	FY00	FY01
TOTAL	0.6	0.4	0.4	0.3	0.3
CUMULATIVE	0.6	1.0	1.4	1.7	2.0

TOTAL PROJECT DISBURSEMENT SCHEDULE (US\$ million)

BANK FY	FY97	FY98	FY99	FY00	FY01
TOTAL	4.6	4.1	3.9	4.0	3.4
CUMULATIVE	4.6	8.7	12.6	16.6	20.0

**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT**

TIMETABLE OF KEY PROJECT PROCESSING EVENTS

Time Taken to Prepare:	53 months (August 1992 to April 1996)
Prepared By:	Ministry of the Environment, Water Resources and the Legal Amazon (MMA) Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) State Environmental Agencies (OEMAs) Institute for Forest and Agricultural Management and Certification (IMAFLOA) Non-Governmental Organizations (NGOs) World Bank: Claudia Sobrevila, Ricardo Tarifa
First Bank Mission:	August 1992
Appraisal Mission Date:	April 1996
Date of Negotiations:	October 1996
Planned Date of Effectiveness:	March 1997
Summary Supervision Plan:	Missions are planned yearly to supervise progress. Three years after effectiveness, a Mid-Term Review is planned, during which project implementation and monitoring and evaluation procedures will be assessed and changes introduced as necessary. <u>Technical expertise</u> : forester, ecologist, community development specialist and natural resources economist.

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****IV. TECHNICAL ANNEXES**

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PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST FOREST RESOURCES MANAGEMENT PROJECT

ANNEX 1: DESCRIPTION OF COMPONENT 1: STRATEGIC ANALYSIS AND PUBLIC POLICY RECOMMENDATIONS

Background

1. The introduction of sustainable forest management in the Amazon region has been hampered by the lack of adequate policies and incentives. These have caused distortions, such as: free access to the region and a lack of control of forest resources; private short term interests ignore the long-term benefits of conservation, the low value of timber from unmanaged sources; and forest clearing indicating land title thus discriminating against natural forest. Brazil's forestry regulatory system is characterized by complexity and low efficacy. Regulations are often unclear and require complex procedural steps to obtain licenses. The lack of coordination among federal and state agencies results in conflicting and or duplicated procedures in licensing and little enforcement. The forestry regulations in place today make enforcement difficult even if significantly more resources were available for this task.
2. The challenge for forest policy formulation and enforcement in Brazil is to clarify objectives, simplify the regulatory apparatus and harmonize complementary policy and incentive instruments.

Objectives

3. The overall objective for this component is to carry out a strategic analysis of the main policies and incentive systems that affect the forestry sector and propose key reforms and new systems. There are essentially two tasks, the first is to gather data and background information on which to base decisions about changes in policy and forestry legislation and the second is to influence the policy making process.

Strategy

4. The component will move through different phases starting with fact-finding and research and moving on to recommendations for changes in policy and legislation. Because it is not possible at this stage to predict how the project will develop and what will be the most useful project contribution in the process of policy change, it was agreed that the component should have a "process" rather than a "blueprint design. For example, it is not possible to define at the outset either the most important studies, or the order in which they should be done until a Forestry Sector Study Group has been established and has developed the strategic

analysis (see paras. 7-8). Progress in the component would be reviewed at "milestones" at 12-15 months and three years.

5. The first task of the Forestry Sector Studies Group is to propose a strategic plan, which will evaluate priorities and ensure integration with other components of the project. The strategic plan would include: an analysis of existing norms and incentives with a view to identifying gaps, contradictions and unnecessary duplication; identification of possible pressure points where relatively small changes in policy instruments could significantly improve forest management results; analysis of likely policy results and implications to arise from other components of this project; leading to a prioritization and sequencing of strategic studies.

6. Furthermore, with a view to developing mechanisms for ensuring effective insertion of policy study results and recommendations into the policy process, the strategic analysis should include: a review of previous policy reform efforts and the factors which contributed to their success or failure; an analysis of possible consensus building mechanisms to generate widespread support for policy reform; and suggestions for events and procedures to promote information sharing, participation, dialogue, conflict resolution and consensus building in parallel to the strategic studies to be carried out under this component.

Description of Component

7. The Forestry Sector Study Group would consist of experienced and knowledgeable people working on a part-time basis, giving their services free for the workshops and reunions. They will be supported by a full time Technical Assistant working in the Ministry.

8. The Group will consist of seven specialists in the following disciplines: forest management, ecology, economics, policy, forestry administration, sociology and law with the possibility of inviting *ad hoc* experts as needed. The functions of the group will be: (a) propose a strategic plan for policy analysis, based on a previously commissioned study; (b) propose strategic studies; (c) receive and analyze the studies; and (d) propose formulation and/or reformulation of public policies.

9. In addition to the above-mentioned tasks, the Forest Sector Study Group (FSSG) would also analyze results from other components of the project, other bilateral projects and relevant experiences from whatever source so as to become a focus point for policy recommendations in the sector. These recommendations would be brought to the Monitoring and Policy Nucleus of the MMA by the FSSG Component Coordinator, an MMA staff person. The Monitoring and Policy Nucleus would integrate the results of policy analyses performed in all four components of the project, and interact with the project's Consultative Commission which would provide input from *inter alia* industry, NGOs and social movements.

10. Policy recommendations made by the Monitoring and Policy Nucleus would be fed into the normal MMA policy process, which includes: interaction with other Secretariats (including the Secretariat responsible for policy and norms); interaction, through the Minister, with the National Council of the Environment (CONAMA) and National Council of the Legal Amazon

(CONAMAZ) which have ample representation of the states and civil society, and consideration by the supra-ministerial Natural Resources Council which provides a mechanism for interaction among ministries and secretariats and makes recommendations to the president of the Republic (see Annex 1 - Attachment 1 for a diagram of this process).

11. To assist in the implementation of the project, a link would be made between MMA and a UK-based international NGO (International Institute for Environment and Development, IIED) that specializes in policy formulation in the forestry sector. This NGO would serve as a useful catalyst and provide an introduction of alternative approaches to policy development and legislation.

12. The list of priority issues for research studies are as follows: (i) economic issues: analysis of the economic feasibility of forest management for timber and non-timber products and analysis of national and international demand for timber from the Amazon; (ii) incentive issues: analysis of the value of new fiscal and tax incentives, such as royalties and payments for environmental services (carbon, biodiversity, water); green certification; analysis of industrial policies to reduce waste during extraction; and assessment of innovative revenue based incentives for the forestry sector; (iii) standards and regulatory reforms: analysis of the usefulness of management plans to promote sustainable timber production, and analysis of licensing procedures for timber production and proposals for simplification; (iv) intersectoral policy: analysis of intersectoral procedures such as land tenure legislation, that affect forest management; and (v) other studies: assessment of the research priorities in the forestry sector and studies to develop new forest reserve models or review old models.

Work Plan

13. The first year of work should have the following goals: (i) carry out and approve the strategic analysis; (ii) collect and analyze the set of existing regulatory norms for the forestry sector in the Amazon, which could be included as part of the strategic analysis; and (iii) select one manageable policy issue and complete an entire cycle comprising problem identification, carrying out a study, analyzing the study and making policy recommendations. The first review at 12-15 months would evaluate progress on the above tasks and modify project design in the light of developments. By the time of the second review at year three it should be possible to see the impact of the process on policy reform.

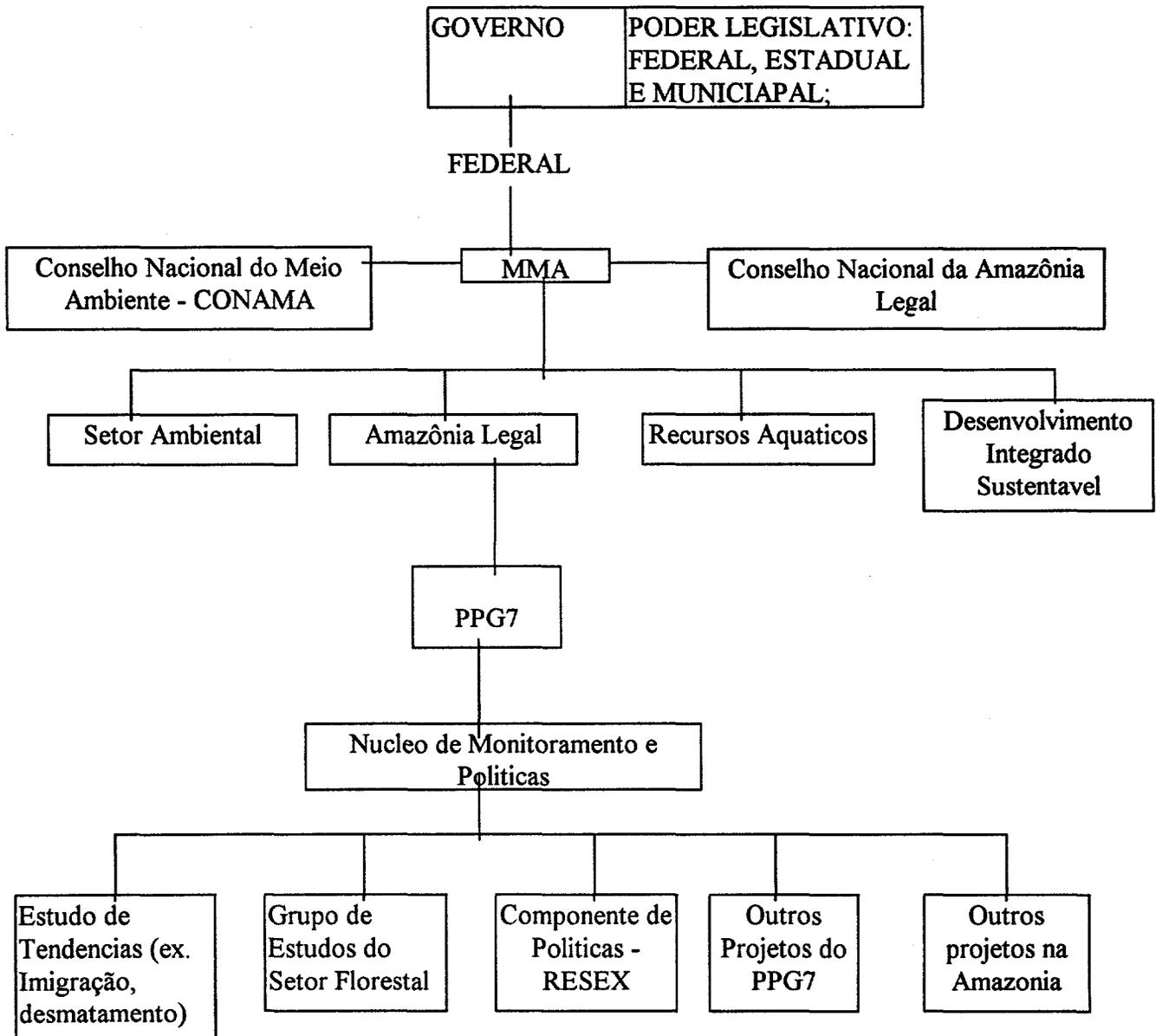
14. A major output of the project would be a synthesis publication on the "State of the Art" of forestry policy in the Amazon to be produced at the end of the component. A matrix of expected outputs, monitoring indicators and means of verification is presented in Annex 5.

Budget

15. The overall budget for this component separates costs for the functioning of the Forest Sector Strategic Studies Group and events such as workshops or symposia which would generate and/or analyze policy recommendations (see Annex 7). The categories of studies and strategic analyses that would be externally funded by MMA include: multidisciplinary and

intersectorial, detailed sectorial and focused studies. Workshops would be financed to bring together experts and for consultations on the various priority studies. Funds would also finance the production of a final project synthesis book, dissemination materials and external reviews.

ORGANOGRAM: MMA AND POLICY FORMULATION



BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ANNEX 2: DETAILED DESCRIPTION OF TESTING OF
PROMISING FOREST MANAGEMENT INITIATIVES****Background**

1. Despite the strategic importance of the forestry sector in the Amazon, there is a shortage of commercial experience in the sustainable management of natural forests in the Brazilian Amazon. The absence of implemented commercial sustainable initiatives is due to: (i) poor effectiveness of existing forest regulatory mechanisms and enforcement; (ii) lack of adequate policy and incentives systems that do not promote sustainable forest use; (iii) lack of successful projects in a variety of areas, including public and private lands, in the Amazon that demonstrate sustainable forest management; (iv) low financial return of investment compared to alternative activities; and (v) abundance of timber stocks, making it more attractive to buy new forest tracts to log for short-term gain, than to invest in forest management for long-term returns. Given the complexity of the problems affecting the sustainable development of the forestry sector, and the difficulty of determining where the intervention from the present project would have the most effect, a framework to prioritize actions was developed. This framework functions with two variables described in detail below (timber extraction models and land control types) and identifies priority areas for actions and interventions.

2. Timber Extraction Models. Timber extraction models in the Amazon are very heterogeneous, due to several factors: (i) composition and volume of commercial species present in a given area; (ii) access to timber resources by road or rivers; (iii) availability of investment capital; (iv) market options (regional, national or international); (v) land tenure situation; and (vi) socio-economic aspects. Although there are several forest types in the Amazon, the most commonly used classification is based on two major ecosystems: flooded forest (*várzea*) and upland forest (*terra firme*). Based on this classification, five major timber extraction models have been determined. Inherent to each of these extraction models are different degrees of environmental damage resulting from their application, and requiring different types of interventions (i.e., more control, change in policy, more forest management experiences, or more forestry extension). The five timber extraction models include:

(a) *Selective logging in flooded forests*, which has been occurring along the major rivers of the Amazon region for more than three centuries. Traditional local people extract and transport the logs to the river manually, without using machinery or vehicles. Most logs are floated by river raft to large sawmills several hundred kilometers away, where they are processed and exported. Only a few large trees per hectare of a limited number of species are harvested. *Virola surinamensis* is the major species currently harvested. As a result of this model, ecosystem level environmental impacts are not severe. There are few projects undertaken by private companies to manage selective logging practices in flooded forests (EIDAI and BRUMASA are two firms currently involved in such projects).

(b) *Intensive logging in flooded forests* takes place along the estuary of the Amazonas and Tocantins Rivers near larger urban centers. This timber extraction model became evident in the 1980's, following the decline of other extractive activities (rubber tapping). Local people extract and transport logs without the use of machinery or vehicles. Logs are processed locally in family-run sawmills equipped with small circular saws. Ecological impacts are severe, because all commercially valuable trees (approximately 50 species) measuring more than 15 cm in diameter are harvested. Local mills produce rough boards sold regionally for low income construction or as disposable untreated construction lumber. There are currently no forest management initiatives being implemented for this model.

(c) *Selective logging of high-value species in upland forests* occurs in the southern Amazon region, primarily in southern Pará, Rondônia, Acre and northern Mato Grosso. This model, which started in the 1970's, features the extraction of only one species - mahogany (*Swietenia macrophylla*). Large timber companies harvest, transport, process and market mahogany for international and national markets (to a lesser degree in the case of the latter). Direct environmental impacts are not severe at the ecosystem level, but are significant at the species level in terms of both population structure and genetic erosion. Studies show that regeneration of mahogany is rare in logged areas. Due to the high value of this timber, which is up to 10 times more valuable than most timber from the Amazon, there are some initiatives being tested by private companies and NGOs. The three models being tested focus on: (i) enrichment planting in logged areas; (ii) planting on cleared land; and (iii) forest management methods targeting natural regeneration. Most of these projects are in the early stages; some problems encountered thusfar include pest attacks on plantation trees (mahogany shoot borer) and low growth rates in forest enrichment sites.

(d) *Semi-intensive logging in upland forests* takes place mostly in new frontier regions and less developed areas along the Transamazon, Belém-Marabá, Cuiabá-Santarem and Porto Velho-Rio Branco highways. Farmers and ranchers usually control the timber resources and participate in harvesting and transporting logs. Local mills buy the timber and process approximately 20 species for both national and international markets. Environmental impacts are moderate (e.g., less than 30% of the canopy cover is removed). There are few forest management initiatives being implemented (e.g. Amacol in Portel).

(e) *Intensive logging in upland forests* occurs in areas in which roads and infrastructure (communications, banks) are relatively more developed, such as along the Belém-Brasília highway and in northern Mato Grosso. Large land-owners (ranchers and loggers) control the forest resources. Timber companies often buy logging rights and extract, transport, process and market the timber. Approximately 70% of the production is for the internal market. More than 100 species of trees are harvested and environmental impacts are severe (e.g., greater amounts of canopy cover are removed).

3. Land control Types. Land tenure types have significant implications for the amount and type of government intervention and control of the use of forest resources. Land control types can be grouped as follows: (i) private property, large-scale owners (timber companies, ranchers); 2) private property, small -scale owners (settlers, colonists); 3) community land (traditional river communities); 4) indigenous areas; 5) conservation management units (extractive and forest reserves); 5) conservation protection units (parks and ecological reserves); 6) military areas; and 7) unclaimed areas. Forest

harvesting activities are taking place on all these types of land, and the degree of success in achieving sustainable development of forest resources is variable.

4. By combining the two variables described above (timber extraction models and land control types), it is possible to identify the most important timber areas in the Amazon. The combination of variables offers a framework that enables us to locate the most important patterns of exploitation by type of land tenure. Each individual cell in the table was classified based on the estimated percentage of timber production by extraction model that originates in that type of land ownership. The various interventions of the project will concentrate mainly on the boxes in which timber activities are most important.

Objectives

5. This component would support on-going or new sub-projects in sustainable natural forest management in the Amazon. In order to maximize the learning process, sub-projects would be chosen from a range of situations representing various types of forests, and models of extraction and land control in the Amazon, as described above. The objective is to encourage non-government agents -- individuals, enterprises, private non-profit organizations and community organizations -- to develop sustainable management techniques and/or adopt patterns of forest use which favor sustainable development and which could be replicated later.

Strategy

6. Eligible institutions to carry out the sub-projects would be NGOs, community associations and academic institutions. Private companies would not be grant recipients, but certain sub-projects could be carried by the eligible institutions listed above, in private lands with the endorsement or matching support of the private company. Ultimate beneficiaries (of training, dissemination workshops, etc.) within each of the sub-projects could be a wider range of individuals and institutions. Support to sub-projects would be up to US\$500,000 for three years, and financing will be on a declining basis.

7. Selection criteria and process. Selection criteria were agreed and include: (i) innovative forest management technology; (ii) potential for demonstration and replication; (iii) environmental sustainability; (iv) participation of the surrounding populations and social viability and benefits; (v) impact on development of sustainable management and use of forest resources; (vi) potential financial viability and economic viability; (vii) technical capacity of the executing institution; and (viii) leadership and commitment of executing institution. Selection was made by a team of consultants appointed by the Government. The final decision was made by the Government (MMA and IBAMA), Bank and donors representatives (see. para. 10).

8. Eligible activities under the sub-projects would include: (i) technical assistance; (ii) training; (iii) certification; (iv) dissemination of experience, including technical visits and publications; and (v) minimum infrastructure and equipment. Other eligible activities of the component are: (i) dissemination activities; (ii) independent evaluations; and (iii) operational costs.

9. Distribution of funds. It was agreed that 40-50% of the sub-projects would address critical damaging practices of the private sector, 30-40% would support community-based forest resources management and 20-30% would promote sustainable forest management in public lands (other than National Forests).

Description of Phases

10. *Pre-selection phase.* A group of consultants, composed of specialists in forestry, anthropology, economics and forest management, was appointed by PP-G7/MMA in January 1996 to identify promising initiatives in sustainable forest management based on the strategy outlined above. The group visited and assessed 31 initiatives during the first semester of 1996 (see Annex 2-Attachment 1). The report of the group included: (i) identification of prospective sub-projects; (ii) evaluation questionnaire filled out for all prospective sub-projects; (iii) observations made during field visits; (iv) recommendation of a short-list of pre-selected potential sub-projects; and (v) sample form for pre-proposals and proposals.

11. The 31 potential initiatives visited were distributed in the following states: Acre (10% of the total), Amapá (6%), Amazonas (10%), Mato Grosso (17%), Para (37%) and Rondônia (20%). The property regimes included large industries (57%), smallholder communities (23%), Indian lands (13%), extractive reserves (3.5%) and other protected areas (3.5%). A total of 47% were located in dense upland (*terra firme*) forest, 43% in open upland forest, and 10% in floodplain forest.

12. During the appraisal mission, the Government, Bank and donor representatives pre-selected the most promising initiatives and agreed to request pre-proposals to 21 of them (14 were recommended without restrictions while 7 were recommended with restrictions). In June 1996, IBAMA requested pre-proposals from all pre-selected initiatives. Twenty pre-proposals were submitted to IBAMA in July 1996 and during negotiations (August 27, 1996), they were reviewed by the Government, Bank and donor representatives. The recommendation during negotiations is presented in Table 2-2 (Annex 2-Attachment 2). Funding for direct support to promising initiatives was estimated to be US\$6,250,000 during the life of the project (See Annex 7). An estimated US\$ 5,370,700 would be spent on the promising initiatives identified in Table 2-2. It was agreed during negotiations, that given the unallocated amount available to promising initiatives and pending any additional availability of funds, new initiatives could enter the program at a later phase following the established procedures above.

13. *Full proposal phase:* As soon as the Technical Coordinator for this component is appointed, IBAMA would request full proposals from all the selected implementing entities. During negotiations, agreement was reached that IBAMA would send to the Bank and donor representatives, for their final approval a full proposal for each sub-project. During appraisal, agreement was reached on simple forms and guidelines for the preparation of proposals. All proposals would include: (i) a project description; (ii) the form and scale of support requested; (iii) matching contribution of the applicant; (iv) expected benefits and risks; (v) environmental and social assessment; (vi) monitoring and evaluation mechanisms; and (vii) technical details such as cutting cycle, sequence of operations, silvicultural treatments, location and description of the logging site. Each proponent should ensure in their proposal that sub-projects would: (i) follow good environmental practices, (ii) properly address any sensitive social issues. Grants would only be provided for sub-projects proposals which fulfill the requirement of the proposal forms and guidelines. Particularly, successful proposals should demonstrate clearly defined environmental and public benefits. MMA, IBAMA and the Bank would be responsible for final sub-project funding decisions. IBAMA would be responsible for monitoring and supervising the sub-projects projects and for networking and dissemination of sub-project results. Bank supervision missions would ensure that these guidelines have been followed.

14. A Technical Coordinator would be appointed to coordinate the implementation of this component. The functions of the Coordinator would be to: (i) evaluate new proposals or re-submissions and participate in final approval; (ii) disseminate results; (iii) promote information exchange about the initiatives and other related projects in the Amazon, (iv) make site visits of sub-projects and provide technical assistance; (v) keep donors and government informed of on-going implementation; (vi) coordinate monitoring and evaluation of sub-projects results; and (vii) coordinate activities of this component with Component 1 on Strategic Studies and Analysis of the Forestry Sector.

Table 2-1. List of the 31 Prospective Initiatives in the Amazon Region Assessed before Appraisal

No	Proponent	Participant	State	Type	Eco-System	Status
1	ECOPORE	Org. Seringueiros de RO	RO	Extractive reserve	Open TF	R
2	-	Madeira Lammy	RO	Private industry	Open TF	NR
3	-	Método Agropecuária	RO	Private industry	Dense TF	NR
4	IAMA	Gavião e Araras Indians	RO	Indigenous reserve	Open TF	RC
5	-	Agropecuária Ibere	MT	Private industry	SD forest ¹	NR
6	-	Madeira Sao Marcos	RO	Private industry	Open TF	NR
7	-	Autoe Ltda.	RO	Private industry	Open TF	NR
8	ProNatura	Rohden Ind.	MT	Private industry	Open TF	R
9	FFT	Madeira Bacaeri	MT	Private industry	Open TF	R
10	FFT	Angeli & Madeiras	MT	Private industry	Open TF	R
11	OPAN	Povos Indígenas	MT	Indigenous reserve	Open TF	RC
12	FFT	AMACOL	PA	Private industry	Dense TF	R
13	FFT	Rosa Madeira Ltda	PA	Private industry	Dense TF	R
14	FFT	Amacol	PA	Private industry	Várzea	R
15	EMBRAPA	CEMEX	PA	Private industry	Dense TF	R
16	FFT	CIKEL	PA	Private industry	Dense TF	NR
17	FFT	Madeira ABC	PA	Private industry	-	NR
18	IPAAM	Sapacuaia, Rio Gelado	PA	Community	Dense TF	R
19	FFT	-	All	all types	all types	R
20	FUNDASUR	Uruará Community	PA	Community	Dense TF	RC
21	FATA/GRAA L	Produtores Marabá	PA	Community	Open TF	NR
22	Conservation International	Kayapó Indians	PA	Community	Open TF	R
23	ISA	Kayapó Indians	PA	Indigenous reserve	Open TF	R
24	-	Comaru/Comaja	AP	Community	Dense TF	R
25	IPAAM	Pedreira-Ipixuna	AP	Community	Várzea	R
26	EMBRAPA	Madeira Nova Olinda	AC	Private industry	Dense TF	R
27	EMBRAPA	Pedro Peixoto	AC	Community	Dense TF	R
28	CTA	Assent. Extrativista Pedro Peixoto	AC	Extractive reserve	Dense TF	R
29	Soc. Civil Mamirauá	Mamirauá	AM	Protected area	Várzea	R
30	-	Gethal Madeiras	AM	Private industry	Dense TF	RC
31	-	Mil Madeiras	AM	Private industry	Dense TF	RC

TF= Upland Forest; Varzea=Floodplain Forest; SD= Semi-deciduous Forest

Table 2-2: List of Pre-proposals Reviewed during Negotiations (August 27, 1996)

No	Proponent	Participant	State	Type	Eco-system	Funding US\$	Recommendation
1	FFT	several	All	all types	all types	56,500	R=Video for training
2	EMBRAPA	P. Peixoto Community	AC	Community	Dense TF	112,400	R
3	Soc. Civil Mamiraua	Mamiraua Community	AM	Community	Floodplain	500,000	R
4	IPAM	Pedreira-Ipixuna Community	AP	Community	Floodplain	445,000	R
5	IPAM	R. Gelado Community	PA	Community	Dense TF	567,000	R
6	FUNDASUR	Uruará community	PA	Community	Open TF	434,700	R
7	Ecopore	Org. Seringueiros de RO	RO	Extractive Reserve	Open TF		NR=project will be funded by PDA
8	Conservation International	Kayapó Indians	PA	Indigenous reserve	Open TF	500,000	R
9	OPAN	Nambiquara Indians	MT	Indigenous reserves	Open TF	410,000	R
10	IAMA	Gavião e Araras Indians	RO	Indigenous reserves	Open TF		NR=no fit with project's objectives
11	ISA	Xicrin Indians	PA	Indigenous reserve	Open TF	291,000	R
12	EMBRAPA	Madeira Nova Olinda	AC	Private Industry	Dense TF	198,000	R
13	FUA	Gethal Madeiras	AM	Private Industry	Dense TF	382,000	R
14	Fund.Precious Woods	Mil Madeira	AM	Private Industry	Dense TF	500,000	R
15	Pronatura	Rohden Ind.	MT	Private industry	Open TF	150,000	RR=review Prodeagro overlap
16	FFT	Angeli Madeiras	MT	Private industry	Open TF	100,000	RR=review Prodeagro overlap
17	FFT	Madeira Bacaeri	MT	Private industry	Open TF	130,000	RR=review Prodeagro overlap
18	FFT	Rosa Madeira	PA	Private industry	Dense TF	496,600	R
19	FFT	Amacol	PA	Private industry	Floodplain	42,000	R
20	FFT	Amacol	PA	Private industry	Dense TF	55,500	R

R = Recommended, NR = Not recommended, RR = Recommended with Restrictions

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ANNEX 3: DESCRIPTION OF COMPONENT 3: PILOT MONITORING AND
CONTROL PROGRAM****Background**

1. In Brazil, natural forests logging was traditionally the first step in the process of their conversion to agricultural fields or pastures. This trend occurred in the Atlantic forests and is being repeated today in the Amazon. As a result, logging activities in the Brazilian Amazon is often done in an unsustainable fashion, without any planning or concern for long-term use of the forest.
2. The existing system for licensing and controlling forestry activities is a mirror of this paradigm, and promotes the unsustainable use of forests. While it is relatively easy to obtain a license for deforestation, the procedures to obtain a license for sustainable timber extraction is complex, expensive and time consuming. Although there are variations from state to state, the general procedures to legalize timber extraction and transport are as follows:
3. Authorization for Deforestation (AD) is issued for the purpose of converting forests to productive activities - cattle ranching or agriculture. Depending on the state, IBAMA may be the sole agency responsible for issuing ADs, or share this responsibility with the state environmental agency (OEMA). In the latter case, IBAMA issues ADs for areas larger than 100 ha, while the OEMA issues ADs for smaller areas. This may result in a duplication of effort; in Amazonas, for example, IBAMA requires that an environmental license must first be issued by the OEMA before it will grant an AD. For areas larger than 60 ha, the use of the deforested timber is compulsory. In this case the applicant may either have a Timber Extraction Plan approved by the OEMA, or receive a flat license allowing the marketing of 30 m³ of timber per hectare deforested. For areas larger than 1,000 ha, an Environmental Impact Study (EIA) and Environmental Impact Report (RIMA) are required by the OEMA. However, this procedure is almost never used, as loggers prefer to divide larger requests into several smaller requests < 1,000 ha.
4. ADs are valid for one year and can be renewed for an additional year. Decree 1282/94 and IBAMA's Norm 048/95 states that an applicant can receive an AD for a new area only if the activities mentioned in the previous AD have been implemented and checked during a field inspection. In reality, field inspections rarely take place, and agencies often have no control of previous licenses or updated information on activities occurring on properties. In some cases, the sum of the areas of issued licenses are larger than the area of the property. The lack of follow-up inspections and autocratic legislation, coupled with relatively easy licensing procedures, makes ADs the procedure of choice of

loggers. The AD is most often used for the purpose of legalizing the origin of timber logged on public or indigenous land, and less so for the conversion of land for productive activities.

5. Authorization for the Transport of Forest Products (ATPF) is a required document that must accompany logs and other forest products being transported. The ATPF is granted following the issuance of any of the licenses mentioned above (AD, AE, PMFS). For processed timber (boards and plywood), a compulsory stamp (*Regime Especial de Transporte, RET*), must be stamped on the official receipt (*nota fiscal*). These licenses are the principal documents inspected during enforcement activities at checkpoints along rivers and roads.

6. Registry of Timber Industries and Loggers. Loggers, sawmill owners and timber buyers are requested to register at IBAMA in order to operate.

7. The confusing and sometimes conflicting regulations make enforcement virtually impossible, even if more resources were available for the task. There is no easy-to-access information on logging activities, and the licensing process is basically a bureaucratic exercise of receiving and processing documents, which in many cases do not reflect the real situation in the field. Existing sanctions for environmental infractions are not effective, and administrative sanctions need to be standardized and penalties established. Neither legal nor civil actions have been used to penalize illegal activities. The major problems related to the control of logging activities are summarized in Table 3.1.

Table 3.1 Major Problems and Proposed Solutions Related to Control of Logging

Problems	Proposed Solutions
Lack of information on the current state of logging industry. (number of mills, origin of timber, number of licenses granted vs. production) make enforcement difficult.	Gather information on logging industry. Create a database for easy use of information. New licenses would be issued after checking the prior history of industry and compliance of previous approved management plans, or conversion of forests to productive activities.
Current legislation promotes unsustainable use of forests: an Authorization for Deforestation (AD) is easy to obtain, while the procedures to obtain a license for sustainable timber extraction is cumbersome.	Change norms and procedures; AD would be better enforced, and the procedures for sustainable timber extraction would be simplified.
Loggers use the AD to legalize timber harvested from public areas or from other regions. There are no field inspections after the AD is issued	Field inspections would be fully implemented. New AD would only be granted after checking if areas on which previous AD was issued are productive.
Norms are complex and not enforced	Simplify norms and create easy-to-follow procedures for processing documents and conducting field inspections.
Management plans for sustainable timber extraction often are not followed in the forest. There are often no field inspections to assess if the written plan is being respected	Establish field inspections. Create technical guidelines for field inspections, train staff for field inspections. Make forester who signed the management plan liable if plan is not followed.
There are few inspection checkpoints on roads.	Cooperation among environmental agencies and state taxing agencies for enforcement. State taxing agencies would be informed every time the environmental agency issues a license for timber extraction. New checkpoints would be supported only after the new system for issuing licenses is in place.
No economic incentives for the sustainable use of the forest	Establishment of taxes on timber from deforestation areas
Penalties are not enforced.	Review the system of penalties; penalties should be legally implemented; for each succeeding violation, the fine amounts should be graduated.
Environmental norms are not followed by government officials, i.e. licenses are granted without inspections required by law.	Make government officials liable for licenses granted which do not follow the norms.

Objectives

8. The objective of this component is to implement an integrated pilot monitoring and control system for logging activities in an area of upland forest (*terra firme*) in the state of Pará and an area of flooded forest (*várzea*) in Amazonas state. These sites represent the two major forest types in the Amazon, with distinct harvesting methods, transport and environmental impacts. The challenge of this component is to clarify objectives, deregulate and simplify the regulatory apparatus, and reform and retarget complementary policy instruments.

Pilot Areas

9. The pilot areas are: (i) approximately 5,000,000 ha near the city of Santarem, Pará encompassing the Tapajós National Forest, part of the Transamazon Highway, and the

municipalities of Uruará, Rurópolis, Aveiro and Itaituba; (ii) approximately 6,000,000 ha in the region of Itacoatiara and Manaus, Amazonas (see Annex 2, Attachments 1 and 2).

Description of Activities

10. This component would be implemented in two phases:

11. Phase 1: Analysis of the Current System for Control and Monitoring of Forest Activities and the Development of a New System. This phase would occur during the first year of the project and includes the following activities:

a) Assessment and redefinition of existing regulations and licensing procedures. Preliminary assessment suggests that some procedures used today are cumbersome, excessively bureaucratic and inefficient. The need for existing procedures and norms would be assessed in order to clarify objectives, simplify procedures and abolish all regulations which do not directly target environmental values. Conflicting and duplicate strategies among federal and state agencies would be identified and a better coordinated effort would be devised.

Two workshops would be organized with the participation of federal and state environmental agencies, stakeholders and experts to review current procedures. A consultant team assessing norms and procedures would also evaluate the efficacy of autocratic actions. The recommendations of this team would be sent to the forestry sector studies group (Component 1) to devise the means to change policy. Environmental agencies would be more rigorous in the issuance of ADs (deforestation licenses) to eliminate the current practice of some loggers who use this license to cover up intensive logging activities. At the same time, the procedure for obtaining a license for timber extraction as part of an overall forest management plan would be simplified. The objective would be to encourage forest management activities and discourage deforestation.

b) Diagnosis of the current status of logging activities and the timber industry in the pilot areas. Relevant information for the implementation of the new system would be collected and reviewed. This diagnosis would include (i) an updated registration of all timber industries in the pilot area; (ii) identification of sources of timber; (iii) current and potential production of the timber industry in the pilot area; (iv) an assessment of the institutional capacity of the environmental agencies in the pilot areas (personnel, infrastructure, equipment and control posts); (v) preparation of maps incorporating all of the information listed above, plus the location of forest types, protected areas, local communities and the existing transport network (rivers and roads). Some of this information is already available (e.g., maps of protected areas, forest types, etc.) and would only need to be gathered and incorporated into a Geographic Information System. This activity would be carried out by consultants and research institutions. The purpose of this subcomponent is to have available easy-to-access and detailed information of the pilot area.

c) Development of an integrated system for licensing and monitoring forest activities. A computerized database integrated with a Geographic Information

System (GIS) would be developed. A consulting firm specializing in organization and methods assessments would be contracted to design an efficient information management system for the optimization of licensing procedures. The information management system would consolidate information on licensing and forest activities from federal and state environmental agencies. The GIS-linked database would use satellite imagery to detect land cover changes. All information related to forest clearings and logging activities would be stored and made available during the processing of new licenses.

d) Implementation of the computerized system. All existing information on both federal and state agencies related to the pilot area would be entered into the database. This would include, among others, forest management plans; licenses and authorizations for clearings or logging; industry registries; and register of companies found not in compliance with environmental regulations. This initial work would be done by consulting firms. During this period, staff from the environmental agencies would be trained on how to use the existing information as a tool for the evaluation of new requests for deforestation and timber harvesting licenses. The geographical location (latitude/longitude) of the areas to be deforested or under timber extraction would be registered in the request, making it easier to check later if the area was used as requested. The geographical location of logging sites on maps or other geographical information systems would indicate where timber extraction is concentrated, and facilitate the planning and implementation of inspections and enforcement activities.

Satellite imagery (LANDSAT TM) of the pilot areas would be acquired, processed and digitized to prepare base maps. In order to allow the integration of the database with the GIS, the location of forest activities would be geo-referenced using a GPS during site inspections. Environmental agencies would collaborate with state tax agencies to enforce this subcomponent. State tax agencies would be informed every time the environmental agency issues a license for timber extraction.

The new system would concentrate on preventive practices and would be implemented gradually over a period of five years. In the first two years, the new system would focus on monitoring the licensing process. All the information would be readily available through the computerized database and GIS. New licenses would be issued only after analyzing previous experience and after field inspections. Agreements among OEMA/IBAMA and NGOs or private companies would be implemented for field inspections. To meet this objective, the project would finance a communication system (radios), GPS and vehicles for field inspection. In order to simplify document processing, the evaluation of new license requests and field inspections, the project would develop manuals with specific guidelines for easy procedures. The monitoring system would be continuously reevaluated and updated as needed. Training would be provided on database use, field inspections and document processing. The database would be used as a tool for issuing new licenses. For example, the status of each authorization would be incorporated into the system following field surveys. During the process of issuing new licenses, the system would be consulted. No new licenses would be issued to land-owners who

have not implemented activities specified in previous management plans, or who received Authorization for Deforestation but did not convert the land to productive use.

e) Preparation of simplified guidelines for field inspections. A set of guidelines and indicators would be prepared and published as a manual to guide the evaluation of management plans, forest inventories and annual cutting plans, as well guidelines for carrying out field inspections. These guidelines may include information on logging activities, such as the location and width of logging roads. Guidelines and indicators would be developed for each forest type present in the pilot areas. Staff from IBAMA would be trained to use these guidelines.

f) Development of a bar-code system to control the transport of timber in the Santarem pilot area. A bar-code system would be developed to monitor and control the transport of timber in the Santarem area. Bar-coded tags would be issued by IBAMA/OEMA following licensing procedures and field inspections, similar to the way ATPFs are currently issued. Control posts would be located at strategic points along timber transportation routes, such as at 'bottleneck' river and road sites, to check all the timber passing through. A consulting firm would be contracted to develop and implement this system, and provide the necessary staff training.

g) Development of a monitoring system for várzea forests. Considering the specificity of logging activities in *várzea* regions (i.e., extremely selective logging in very large areas, lack of clear land ownership status, etc.), a specific system for monitoring these areas would be developed. This system would be designed during the first year of the project, with the participation of stakeholders.

12. Phase 2. Field - based Implementation of the new control and monitoring system in both pilot areas. The new system would concentrate on preventive practices and would be implemented gradually over a period of five years. In the first year the system would focus on licensing and document control procedures. The database would be used as a tool for issuing new licenses. New licenses would be issued only after analyzing previous experience and after field inspections. Agreements among OEMA/IBAMA and NGOs or private companies would be implemented for field inspections. The use of the GIS-linked database and satellite imagery would show illegal activities, such as unauthorized clearings and logging. After identifying areas that have been cleared in violation of licenses, or other illegal logging activities, an NGO or private company would be hired to notify the infractors to come to the environmental agencies to correct the situation. These notifications may be used later in the legal process. Periodic field inspections conducted according to guidelines developed under this component and published in field manuals would monitor the use of the land. To meet this objective, the project would finance a communication system (radios), GPS and vehicles for field inspection. Phase 2 would also finance the maintenance of the monitoring and control system (database and GIS) developed in Phase 1, including the purchase of satellite images, digitalization of new information, technical support and staff training.

13. *Várzea region.* A specific monitoring system would be devised for the *várzea* timber producing region of the Juruá river. One month before the rainy season, the major logging areas along the river would be identified and located using a GPS by a consulting firm contracted under the project. This information would be sent to the environmental agencies to check if the logging activities were licensed. All logging sites not in compliance with licensing procedures would be inspected before the rainy season.

14. In the *Santarém region*, a bar-code system would be implemented to track logging activities. Loggers would receive bar-coded tags after applying for logging/clearing permits. A tag would be displayed both on stumps in the forest and on the logs to be transported. This system would permit a permanent register of logging activities in the region and in the FLONA Tapajós. The control and monitoring system for logging activities in this region would be done jointly by the subcomponent on control and monitoring of the FLONA Tapajós of Component 4. Local communities would also participate in the implementation of this subcomponent.

16. *Performance Auditing.* An independent agency (NGO, research institution or specialized private firm) identified with the help from the PCU and the Project would be contracted to audit the implementation of the new system by IBAMA/OEMA offices and other contracted NGOs or private firms.

Project Coordination and Implementation

17. Overall coordination of this component would be done by IBAMA/SUPES/AM, which would be responsible for channeling funds and sub-contracting NGOs and private companies for specific activities. A technical coordinator would be responsible for the daily activities related to the maintenance of the control and monitoring systems, and reporting to the overall project coordinator. This component would be implemented through the coordinated action of (i) IBAMA/SUPES and the OEMAs (SECTAM in Pará state, and IPAAM in Amazonas state), which would review and process authorizations for deforestation and forest management; and (ii) other entities and NGOs, which would assist as subcontractors on specific issues and help IBAMA and the OEMAs in the implementation and evaluation of the component. In Pará, IMAZON would participate in the research of impacts of logging, and in a study on the simplification of norms and methodology of enforcement. In Amazonas, another research institute with recognized experience would be selected.

18. Project monitoring and evaluation would be done yearly through independent auditing by research institutions and NGOs. The auditor would be a professional firm with knowledge of tropical forest management and control, chosen by IBAMA/AM and approved by the Bank. The auditor would assess if agencies are following the new system, identify areas of conflict and suggest improvements. The auditing would follow quality control methods used by the International Standards Organization (ISO).

19. Linkage with other components. Control of illegal timber extraction would indirectly help the establishment of forest management strategies in FLONA Tapajós (Component 4)

and help make forest management more attractive (Component 2). During the assessment of regulations affecting forestry monitoring, requests for studies related to the control of logging activities would be made to the permanent group for strategy and public policy to be established within MMA (Component 1). For example, the structure of incentives would be reviewed and measures would be proposed to COEMAs and other relevant authorities for approval, to ensure that they support control and enforcement efforts and provide financial stability for increased control and enforcement activities. Incentives to be considered could include: (i) additional state logging taxes for logs which do not originate from managed forests, and (ii) increases in the amount of fines for each succeeding violation.

ANEXO 5.14 - Mapa 1 - Área Piloto no Amazonas (Região de Itacoatiara)

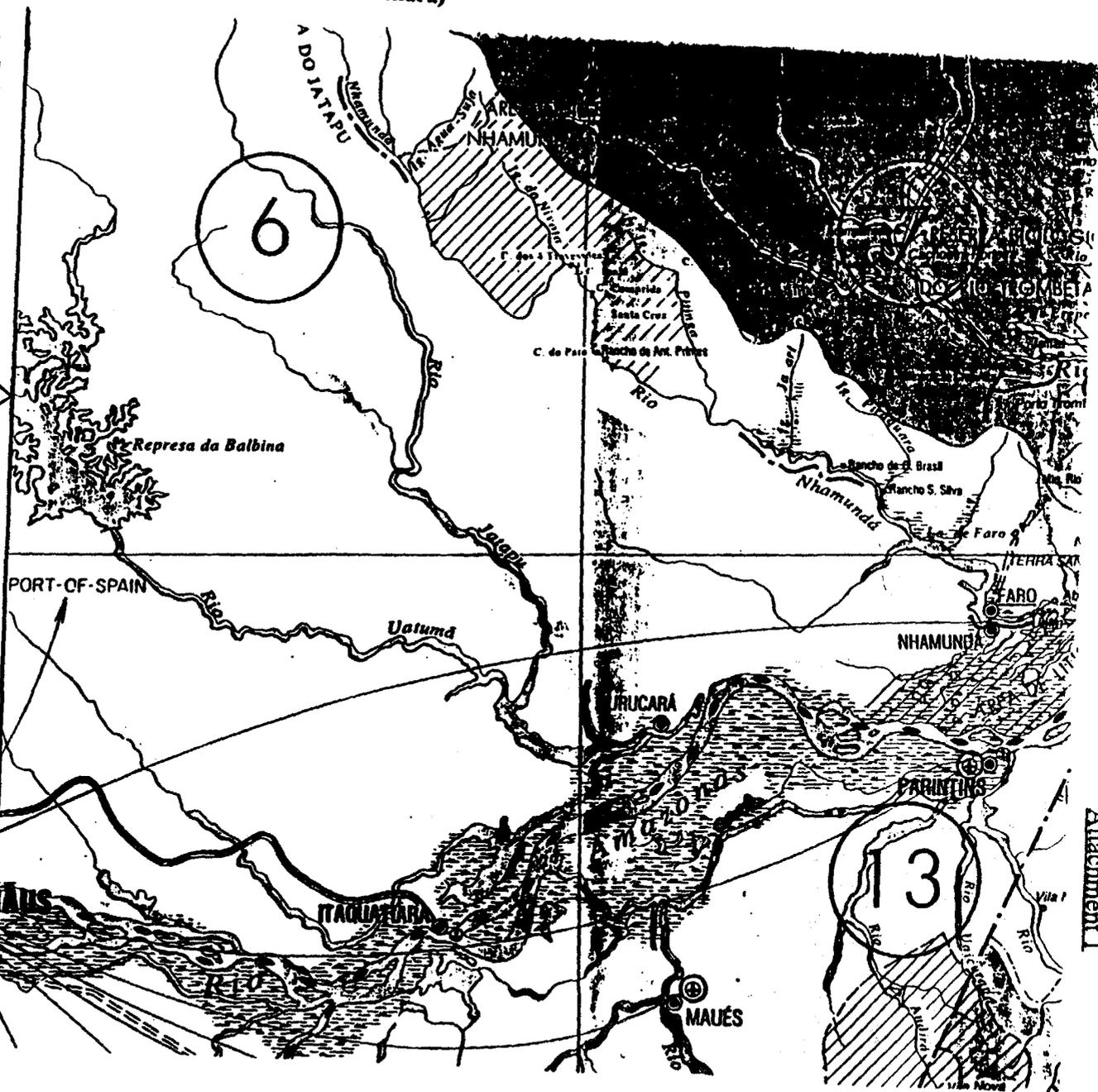
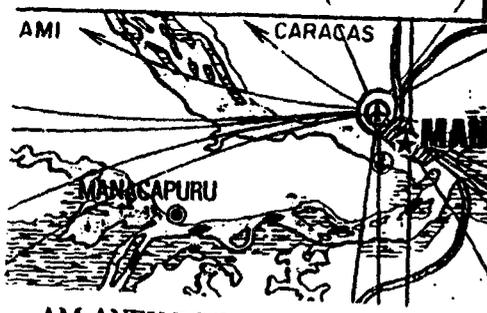
TABELA

DISTÂNCIAS RODOVIÁRIAS EM KM
CALCULADAS PELO TRAJETO MAIS
CURTO OU PELO INDICADO

(3) 496							
(2) 872							
309	(1) 568						
(2) 1337	(1) 400	(2) 725					
1728	(1) 377	(6) 2111					
(2) 582	(2) 902	2084	(7) 3367				
676	211	2075	(7) 3340	2932			
229	(6) 1204	(7) 3331	2905				
1799	(7) 1615	(7) 2460	2896				
(7) 3055	(7) 2871	2025					
3801	(7) 3055	2436					
	3801	2620					
		3366					
2672							

- (1) Via Barcarena
- (2) Via Marabá
- (3) Via Itupiranga
- (4) Via Tailândia
- (5) Via Conc. do Araguaia
- (6) Via Araguaína (TO)
- (7) Via São Paulo (SP)

RODOVIÁRIA



AM-ANEX.DOC May 6, 1996 8:31 AM

Annex 3
Attachment 1

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ANNEX 4: DESCRIPTION OF COMPONENT 4: PARTICIPATORY
MANAGEMENT AND CONSERVATION OF FLONA TAPAJÓS
WITH EMPHASIS ON SOCIAL FORESTRY ACTIVITIES****Background**

1. National forests (FLONAs) are areas administered by the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) destined for economic production and sustainable use of forest resources. However, none of the 24 FLONAs located in the Amazon (12.6 million ha., approximately 2,6% of the Brazilian Amazon) have been established on the ground. The main obstacles for the implementation of national forests are: (i) land tenure conflicts (demarcation and land expropriation); (ii) remoteness from the logging industry; and (c) IBAMA's shortage of specialized personnel to deal with communities and the private sector. Among all the FLONAs in the Amazon, the Tapajós National Forest (FLONA Tapajós) is the most viable for supporting an experiment in forest management due to its strategic location, existence of organized communities and local organizations, presence of an IBAMA office with some infrastructure and personnel, and also by the existence of preliminary socio-economic and silvicultural studies.

2. FLONA Tapajós was created in 1974, through Decree no. 73.684, and has an approximate area of 600,000 ha. It is located in the state of Pará on the Tapajós River near the municipalities of Santarem, Aveiros and Rurópolis. Sixteen traditional riverine communities and the city of Aveiros are located inside the FLONA, with a total of approximately 900 families (4.500 people). Approximately 18,912 ha. of land are registered as private property, and 7,103 ha. are occupied as small-holder plots. The process of creating FLONA Tapajós, without proper consultation and participation of traditional dwellers and other stakeholders, coupled with IBAMA's original policy forbidding people to live inside the FLONA area, was the source of land conflicts among the local population and government agencies. The relationship among these actors continues to be difficult.

3. During the last decades, several research studies were performed in the FLONA Tapajós focusing on inventories, silvicultural treatments and regeneration studies. A forest management research project, initially supported by UNDP/FAO (BRA/78/003) was the first practical effort to exploit the Amazon natural forest on a sustainable-yield basis. The results of this research indicated that this endeavor was technically possible at fairly attractive costs. However, because of the free supply of logs from land clearings, Tapajós was able to sell stumpage from only 100 ha. This constraint has effectively stalled the EMBRAPA management program at Tapajós. More recently, a project financed by the ITTO started in FLONA Tapajós with the objective of implementing sustainable

timber extraction in this region. A consultative committee was established including the participation of universities and local organizations. However, changes in the legislation regarding environmental impact studies in FLONAS and disagreements between local communities and the government about the area to be given as a concession to private firms has caused project delays. More recently, IBAMA agreed to the participation of local communities in the management of the FLONA Tapajós in the preparation and implementation of the PP-G7 Forest Resources Management Project. In order to avoid a duplication of effort with the ITTO project, (which focuses on sustainable timber extraction by private companies), this subcomponent will focus on developing and implementing social forestry activities for the Tapajós National Forest. Agreements would be negotiated with the ITTO board to collaborate in this endeavor.

Objectives

4. The objective of this component is to develop and implement a participatory management plan for the sustainable use of the Tapajós National Forest.

Strategy

5. This component is based on the effective participation of stakeholders and traditional dwellers living inside the reserve. Participation started during the preparation of this project, and will continue during the preparation of the zoning/management plan and its implementation. Local organizations will participate in the execution of several subcomponents described below, and in a consultative committee that will assist IBAMA in the implementation of this project. To develop this component, several pre-investment studies have been financed.

Pre-investment activities

6. Pre-investment activities were chosen to resolve existing land use conflicts; reach agreement among different stakeholders on the different land use rules and to further define the eligible activities and implementation procedures under this component. The following studies were prepared:

(a) *Definition of the Land Tenure Situation within the Tapajós National Forest.* Land tenure conflicts have persisted for several years in the area. Two bills were recently sent to the Brazilian Congress proposing to exclude the city of Aveiros and the areas along the Tapajós River occupied by traditional communities from the National Forest area. Considering that these proposed bills did not consult the communities and could directly affect the lives of the local population and the outcome of this project, this study financed a series of workshops and studies to help local communities decide whether they want to be excluded from the FLONA Tapajós through a redrawing of the FLONA's boundaries, or whether they want to be included and have a resource utilization contract with IBAMA, as in the case of Extractive Reserves. During the pre-appraisal mission, the Bank received copies of the report describing the consultative process. Seventy percent of the communities voted to be excluded from the National Forest. The Bank also received copies of proposal of the law under preparation (No. 794 E939, 1995) for the redefinition of

the Tapajós National Forest's limits. The law has been presented to the Agriculture and Rural Policy Commission of the Senate. If passed, the law would set out general principles for the redefinition of the limits, and would delegate to MMA/IBAMA the detailed delimitation of the community - land boundaries through participatory processes.

(b) *Draft Zoning and Management Plan* for the Tapajós National Forest: a draft zoning and management plan for the Tapajós National Forest to delineate zoning and land uses in the FLONA has been prepared by a consulting firm, IMAFLORA. The study included: (a) participatory mapping of natural resources in areas inside the FLONA occupied by 18 local communities along the Tapajós River; (b) land cover and land-use mapping based on existing information; (c) preparation of draft zoning and land-use plans; (d) consultation workshops with major stakeholders on the draft plan; and (e) preparation of the draft final management plan. This zoning plan was discussed during the appraisal mission and during a workshop in Santarém in July 1996. The final version of the zoning plan prepared by IMAFLORA was sent to the Government, Bank and donor representatives in September 1996. Additional local consultation workshops would take place during implementation to finalize the definition of the boundaries of the community land. During negotiations, it was agreed that IBAMA would send to the Bank and donor representatives, for their approval, the final version of the Zoning Plan for the Tapajós National Forest before it is approved by IBAMA within 18 months of effectiveness.

Description of Subcomponents

7. *Subcomponent 1: Management of timber and non-timber forest products by traditional local communities.* This subcomponent would be implemented by two community associations (AITA and ASMIPRUT) with the technical assistance of the Santarem Rural Workers Union (STR) and a local NGO, Projeto Saude e Alegria (PSA). Once the Belterra Rural Workers Union is established, it would also participate. The implementing entities submitted a proposal in May 1996 detailing subcomponent activities, expected outputs, rules for use of funds and administrative arrangements. The proposal was approved by the Bank and donor representatives. According to the proposal, activities under this subcomponent would be coordinated by a "Deliberative Forum" composed of representatives from the four implementing entities and the 18 participating communities. The Forum would be headed on a revolving basis by each of the five implementing entities, in the following order, PSA, STR-Santarém, STR-Belterra, AITA and ASMIPRUT for years 1 to 5. This coordinating entity would act as the executive secretary for the whole subcomponent, providing the coordination of all executing entities, flow of information, and monitoring of activities, and would be responsible for project financial accounting, communication with public agencies, and coordination of technical assistance.

8. Subcomponent 1 is composed of the following activities:

(a) *A participatory multiple use-plan* for the area occupied by the local communities along the Tapajós River would be prepared during the first year of the project. This plan would build upon the management plan started as an pre-investment study. The preparation of this plan would involve each of the 18 communities, reaching agreement on specific details regarding land uses (i.e. the areas reserved for protection, wildlife management, non-timber products extraction, extraction of timber for local use, areas for agroforestry systems and ecotourism). This plan would include community agreements about the implementation of the multiple use plan, enforcement activities, ecotourism and other phases. This Utilization Plan would be sent to the Bank, PCU/IBAMA, MMA and donor representatives for review. STR would be the responsible for this activity, with the assistance of AITA and ASMIPRUT.

(b) *Strengthening of community organization and capacity* would be done through a program for training in organizational and administrative skills, and through support for equipment (phone, fax, etc.) and materials for the local associations. STR would be the responsible for this activity, with the assistance of AITA and ASMIPRUT.

(c) *Community Health Programs* would be based on the strengthening of community health agents, the establishment of preventive health care campaigns, workshops on the health rights of Brazilians in relation to local and state governments, family planning, and nutrition. PSA would be the responsible for the implementation of this activity, with the assistance of AITA and ASMIPRUT.

(d) *Implementation of the multiple use plan.* This phase would provide for hiring of forestry and agricultural extension agents, training courses in agroforestry systems and forest resource management, and study visits. These extension agents would build upon local knowledge of the forest and provide ecological training to local forest technicians. Agreements would be reached on forest use by each community, and on sites set aside for multiple use, as well as mechanisms for the establishment of rolling credit and community management of equipment would be created. This rolling credit may be used, for example, to pay for the establishment of community warehouses, machines for processing extractive and agricultural products; nurseries; studies of economic viability for extractive products; and the implementation of agroforestry systems. PSA would be the responsible for the preparation of this activity, with the assistance of STR, AITA and ASMIPRUT. PSA would be in charge of training and technical assistance and STR, AITA and ASMIPRUT would be in charge for the implementation of infrastructure and community projects.

9. *Subcomponent 2: Strengthening local capacity to monitor and control illegal activities*, to be implemented by IBAMA-Santarem inside the National Forest and in the surrounding areas. This subcomponent would be implemented by the local IBAMA agency with the participation of local communities and stakeholders. It includes the demarcation of the limits of the FLONA and proper boundary delineation; the recovery or construction

of four checkpoints at strategic locations; basic infrastructure and equipment; vehicles and communications equipment; and the establishment of an enforcement program. The objective of this subcomponent is to control land invasions, halt illegal logging and hunting, and enforce the restrictions agreed in the elaboration of the management plan. During the pre-appraisal mission, a team visited the Tapajós National Forest and confirmed that three of the posts proposed would be located in areas in which infrastructure already exists. Two of these sites are on the eastern outer border of the National Forest, by the Cuiabá-Santarém Highway. The other is located in the area of the city of Aveiro, which will be excluded from the National Forest. One post is proposed to be located by the outer southern border of the National Forest, by the river, and near urban areas. The Bank requested that the exact location of the posts and evidence of consultation to communities be sent to the Bank for approval at the time of submission of Annual Action Plans.

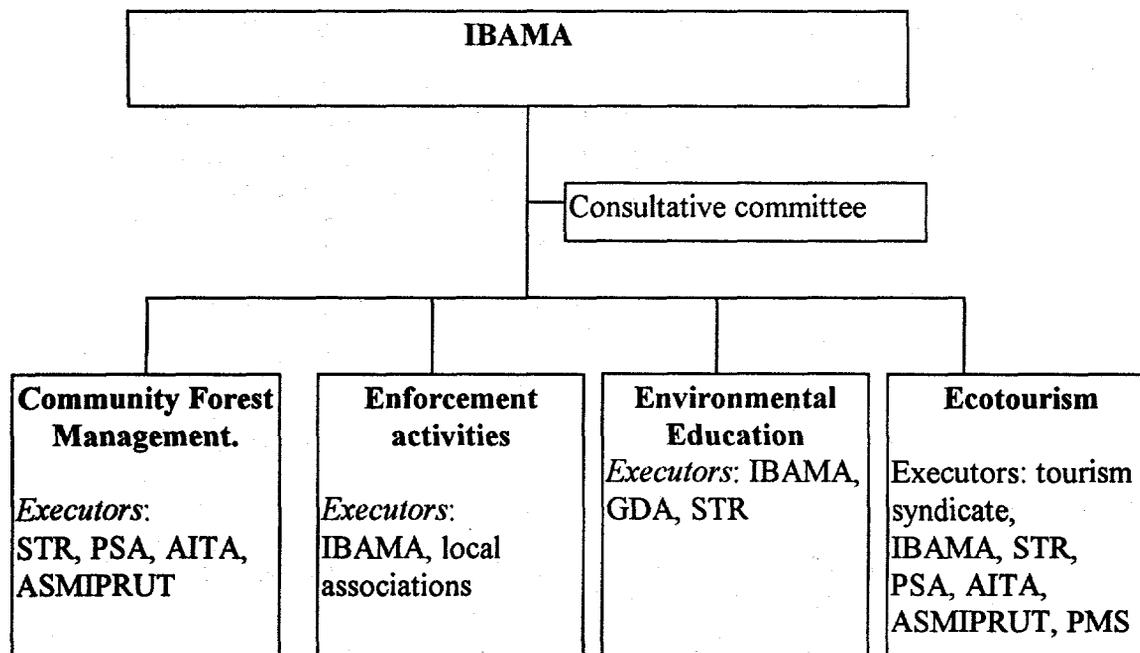
10. *Subcomponent 3: Development of an environmental education program.* The Environmental Education Program will focus on the prevention of forest fires and protection of wildlife. Initially the program will identify priority areas in the buffer zone around the National Forest, including the areas along the Cuiabá-Santarém Highway, Cupari river, and the municipalities of Santarém, Rurópolis, Aveiro and Belterra. These areas are occupied by small farmers and ranchers. The use of fire as a tool to clear land (slash-and-burn) and to renew pastures has caused forest fires, mostly in logged areas. Illegal commercial and sport hunting inside the FLONA also causes environmental impacts and conflicts with the traditional population by groups. Once the priority areas are identified, the program will consist of training of trainers, educational campaigns on urban and rural communities, and the preparation and distribution of leaflets, booklets and educational materials. The program would be implemented by IBAMA and local NGOs (GDA and STR). IBAMA will be responsible for the production and broadcasting of educational programs on radio and TV, and GDA will be responsible for the training of trainers, campaigns, and lectures. These entities will also work in partnership and with other NGOs working in the same issues in the region. At the end of the program, a seminar will be organized with the presence of community trainers to assess the success of the program.

11. *Subcomponent 4: Development and implementation of an ecotourism plan.* This subcomponent would be implemented by local associations, NGOs, IBAMA and the Santarém Secretary of tourism. Initially an ecotourism action plan will be prepared by experts with technical cooperation of GTZ, and consultation with local NGOs and communities. The plan will be sent to the Bank and donor representatives for approval. This plan will build upon a study on the tourist potential of the FLONA Tapajós, prepared by the United States Forest Service. Ecotourism activities should be consistent with the recommendations set up in the zoning plan of FLONA Tapajós. Local participation will be included, from the beginning of the process through its implementation, for any activity planned to occur on the area of the traditional communities. Contents of the action plan will include: (i) information on the areas most suitable for ecotourism activities; (ii) an assessment of the current tourism potential for the region; (iii) the need for an information

center and its most suitable location; (iv) written agreements reached with the local communities, including agreed norms of conduct, if community areas are recommended for ecotourism activities, (v) a strategy for training of guides and agents; (vi) dissemination/advertisement strategies, and (vii) social and environmental assessment of possible impacts of the proposed plan. A booklet explaining this proposal will be prepared and distributed. Accordingly with the plan, this subcomponent will consist of the establishment of visitor centers and rustic huts for tourists in selected villages, preparation of promotional materials and training of tourism guides and agents.

Project Coordination and Implementation.

12. The Tapajós Commission responsible for overall coordination and implementation of this component would be established before disbursement of funds to this component. This commission would be composed of representatives from: government (3) (IBAMA, SECTAM, municipal government), social associations (3), private sector (2) (timber association, tourism industry), NGOs (2) and researchers (2). The roles of the Commission would be to: (i) evaluate and redefine, if necessary, the activities to be implemented under Component 4; (ii) analyze and evaluate the operational procedures; and (iii) provide input into the preparation of the annual operating plans. The executor of each of the subcomponents described above is given in the figure below. In addition, GTZ will provide technical assistance to this component throughout implementation under terms and agreements set in a GTZ cooperation agreement.



BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ANNEX 5: MONITORING AND EVALUATION PLAN**

1. The objective of monitoring and evaluation is to provide timely information to assist project and component/subcomponent implementing agencies to review progress achieved in their work and difficulties encountered, as well as to measure overall project performance and impact.
2. Monitoring and evaluation would be carried out by MMA and IBAMA based on component/subcomponent data and other monitoring and evaluation data identified as necessary and collected by the implementing agencies and their consultants. The Bank would receive regular reports on monitoring and evaluation.
3. The draft monitoring and evaluation plan is described below. The processes to be followed by MMA and IBAMA to monitor and evaluate project performance and impact are described in Section A. The specific performance monitoring indicators for the activities known at this stage are included in Section B.

A. PROCESSES TO MONITOR AND EVALUATE PROJECT RESULTS

4. A flexible and pragmatic approach to project design and implementation has been adopted to ensure that learning from project implementation activities takes place as quickly as possible. Constant monitoring of project activities will allow decisions to be reassessed from time to time and project implementation activities to be adjusted.
5. The objectives of the project monitoring and evaluation system are to:
 - (a) Provide information regarding the progress of the project at both the overall project and the component/subcomponent level; and
 - (b) Verify that project activities are consistent with the guidelines, targeting methodology and selection criteria included in the Project Operational Manual.

Responsibilities

6. In general, both MMA and IBAMA will be responsible for project monitoring and evaluation. Their responsibilities in this area include the following:
 - (a) Assist component/subcomponent implementing agencies in designing their own monitoring and evaluation indicators and data collection strategies;
 - (b) Establish, distribute, and monitor standard forms to be used for components and subcomponents with respect to submission of data on financial, physical, and other administrative indicators;

- (c) Submit to the Bank for approval, as part of the Annual Action Plan, the design of monitoring and evaluation for components and subcomponents;
 - (d) Carry out visits to supervise components and subcomponents of particular interest or importance, and those with evidence of serious implementation problems;
 - (e) Hire consultants to conduct evaluation studies of concluded components and subcomponents in order to select cases with important lessons or which have significant potential and size.
7. The monitoring of components and subcomponents is primarily the responsibility of the implementing agencies, who will report periodically to MMA or IBAMA. Component implementing agencies should:
- (a) Design the monitoring and evaluation component as part of the component/subcomponent plan, including monitoring indicators and indicators for evaluation of progress toward component/subcomponent goals;
 - (b) Continuously collect data required for reporting to MMA or IBAMA;
 - (c) Submit reports to MMA or IBAMA every six months, based on standard forms and including additional data, as agreed with MMA or IBAMA;
 - (d) Prepare a final report upon component/subcomponent completion, describing to what extent the component/subcomponent's objectives were met, problems and questions that were raised during implementation, and new or replicable experiences gained from the component/subcomponent. Mid-term evaluations may be required by MMA or IBAMA for projects having a duration of three years or more;
 - (e) Cooperate as needed with supervision visits, analysis and evaluation reports, evaluation workshops, and reviews of participants' and beneficiaries' inputs.

Monitoring and Evaluation Instruments

8. Monitoring and evaluation for component/subcomponents would be carried out using a series of instruments, including but not limited to the following:
- (a) Self-monitoring and self-evaluation for all components and subcomponents. Reports compiled by implementing agencies could be supplemented by participatory evaluation assisted by MMA, IBAMA or surveys of beneficiaries;
 - (b) Monitoring and evaluation visits by MMA and IBAMA staff. Staff would periodically visit component/subcomponent sites to verify reported progress and evaluate progress toward component/subcomponent goals, especially when there are difficulties in implementation;
 - (c) Independent studies. Consultants would be hired to carry out studies on component/subcomponent implementation and evaluation, based on random samples, or according to samples chosen by MMA and IBAMA.
9. The Bank would carry out supervision of the project in conjunction with MMA and IBAMA yearly to determine whether the project is meeting its objectives.

10. A Mid-Term Review would also be conducted. The purpose of the Mid-Term Review is to assist MMA, IBAMA and the Bank in the identification of positive experiences and implementation problems and bottlenecks, in order to recommend needed modifications to project methodology and procedures for incorporation during the second half of the project implementation period. Among the various aspects of project implementation to be reviewed, the Mid-Term Review would evaluate the efficiency and impact of the different components and subcomponents, the effectiveness of institutional development activities, and the level of community participation. The Mid-Term Review would be carried out at the end of the third year by independent consultants, under TORs and contracting procedures agreed with the Bank. Inputs to the Mid-Term Review would include: the semi-annual and annual reports, MIS-generated analyses and reports (see below), recommendations from project external and internal audit reports, and additional reviews or studies contracted by MMA and IBAMA.

Results

11. The results of the monitoring and evaluation system include:

- (a) Management of information at the component/subcomponent level from the Management Information System (MIS). The MIS would be a data base containing pertinent physical and financial information for each project component and subcomponent. Tracking information for the MIS would be inputted from data sheets for each project component/subcomponent, separated into three tracking categories corresponding to key steps of the project cycle:
 - (i) Category 1 data sheets would include information for the component/subcomponent regarding its location, such as cost/capita, cost/m², and other relevant parameters.
 - (ii) Category 2 data sheets would include information regarding procurement procedures and contracting.
 - (iii) Category 3 data sheets would present disbursement data and would be updated at the time of each payment installment to beneficiary associations and completed at the time of final installment at the conclusion of component/subcomponent execution.
- (b) Reports and independent studies submitted to the Bank, including:
 - (i) A Semi-Annual Project Progress Report, using standard formats agreed with the Bank, to be presented by July 31 of each year of project implementation; and
 - (ii) An Annual Evaluation Report, to be presented by February 15 of each year of project implementation. The Annual Report would use the standard formats from the semi-annual report, but would also include a comprehensive review of: (a) the status of project performance indicators and the specific activities of the institutional development program; (b) component/subcomponent appraisal indicators and other implementation guidelines included in the Operational Manual; and (c) other relevant analyses

and recommendations from project-contracted studies and audits which may be applied to improve project implementation.

(c) Reports from independent studies on component/subcomponent performance and impact in relation to critical management or technical issues. In addition to data collected on a component/subcomponent's contributions to project objectives, consultants would assess in their evaluation studies the environmental and economic sustainability of component/subcomponent activities.

B. PERFORMANCE MONITORING INDICATORS

12. The development of performance monitoring indicators is an integral part of the project cycle. During project identification/preparation, discussion of indicators helps to define project objectives more clearly, while ensuring that project activities lead logically to the realization of project objectives. Attention is also directed to the status of the database and data collection system with which indicators will be measured, or, alternatively, the need to develop such a system prior to project implementation.

13. Performance monitoring indicators for the Forest Resources Management Project are summarized in Table 5.1.

TABLE 5.1: PERFORMANCE MONITORING INDICATORS

MATRIX OF OBJECTIVES, ACTIVITIES AND EXPECTED OUTPUTS BY PROJECT COMPONENT

Component 1: Strategic Analysis and Public Policy Formulation

Objectives	Inputs	Outputs (goods and services provided by project)	Risks and Assumptions	Outcomes and Impacts (of project activities)
<p>Carry out a strategic analysis of the main policies and incentive systems that affect the forestry sector</p> <p>Propose key reforms and new systems</p>	<ul style="list-style-type: none"> RFT Grant ODA Grant Counterpart funds <p><i>Funds will be used for:</i></p> <ul style="list-style-type: none"> workshops, project coordination, sectoral studies, multidisciplinary and intersectoral studies, dissemination and technical consultancy 	<ul style="list-style-type: none"> Forestry Sector Study Group established (FSSG) Strategies prepared by FSSG guides work program for studies Three kinds of studies commissioned: multi disciplinary/ intersectoral, in depth and short/focused Group reunions and workshops organized on selected topics, including: revision of norms and existing legislation, economic incentives, intersectoral policy including land tenure. 3 workshops carried out per year based on multidisciplinary and intersectoral studies and workshop proceedings published Authoritative paper based on workshop on strategy produced and published Strategy is agreed and adopted by FSSG and recommendations are made for simplifying norms Analysis of findings of studies and workshops and of other projects leads to recommendations for change in policy/legislation Publications, videos and synthesis book produced and disseminated Technical cooperation and institutional link with policy institute(IIED) established FSSG takes up policy and legislative implications of project experiences 	<ul style="list-style-type: none"> sustainable forest management is economically viable Federal and State governments remain committed to environmental care Forestry Sector Study Group study reports and analyze issues MMA pursue recommendations of Forestry Sector Study Group(FSSG) MMA Nucleus for Monitoring Policy follows up on FSSG recommendations; Project coordination mechanisms deliver results from the other components 	<ul style="list-style-type: none"> New laws relating to forestry drafted/passed State and Federal laws harmonized Policy framework becomes conducive to sustainable forest management <p><i>Impacts:</i></p> <ul style="list-style-type: none"> Area under sustainable forest management increases Area under predatory logging decreases Rates of deforestation and forest degradation decrease

Note: MMA is the executing agency for this component

Component 2: Testing of Promising Forest Resource Management Initiatives

Objectives	Inputs	Outputs	Assumptions and risks	Outcomes and Impacts (of project activities)
<p>Demonstrate the feasibility of sustainable forest management practices using innovative techniques</p>	<ul style="list-style-type: none"> • RFT grant • KfW grant <p><i>Funds will be used for:</i></p> <ul style="list-style-type: none"> • coordination, dissemination, training field visits, workshops and technical support 	<ul style="list-style-type: none"> • 12-15 sustainable forest management sub-projects approved for funding • Technical assistance provided to prepare some initiatives • General and specific monitoring indicators developed for each project • 12-15 Sub-projects funded and implemented. • Independent auditors hired for technical and financial monitoring of each project • Annual technical and financial auditing reports prepared • Final results of each sub-project assessed 	<ul style="list-style-type: none"> • sustainable forest management is financially feasible • Private companies and communities interested in sustainable practices 	<ul style="list-style-type: none"> • Feasibility of sustainable forest management practices demonstrated • At least 5 initiatives receive green label • Private companies and communities aware of the feasibility of forest management and of environmental issues • A network of loggers interested in sustainable forest management established and meets twice a year. • 4 communities trained in forest management • 15 foresters trained in sustainable forest management techniques. <p><i>Impacts</i></p> <ul style="list-style-type: none"> • Area under sustainable forest management increases • Area under predatory logging decreases
<p>Dissemination and networking</p>		<ul style="list-style-type: none"> • A network of forest managers involving private firms, NGOs and academics established • At least one workshop a year discussing challenging topics common to initiatives • Final written reports produced for each sub-project including description of innovative forest management methodologies and techniques, financial and economic analysis, and environmental impacts • 20 field visits done and 4 workshops organized • Foresters and field workers from other organizations or communities trained 		

Note: IBAMA is the executing agency for this component

Component 3: Pilot Monitoring and Control System for Logging Activities

Objectives	Inputs	Outputs	Assumptions and risks	Outcomes and Impacts (of project activities)
Optimization of existing licenses, norms and procedures for control and monitoring of forest activities	<ul style="list-style-type: none"> RFT Grant KfW Grant GTZ Grant Counterpart funds <p><i>Funds will be used for:</i></p>	<ul style="list-style-type: none"> Existing licenses, norms and procedures assessed and simplified 2 workshops organized to discuss controlling procedures, with participation of stakeholders Based on the output of workshops, reports are prepared with proposals on strategies to simplify procedures and integrate actions among federal and State agencies in the licensing process Partners identified to work with governmental agencies and make agreements 	IBAMA and OEMAs committed to enforcement of ban on illegal logging	<ul style="list-style-type: none"> Existing licenses, norms and procedures simplified and more effective Federal and State environmental agencies works in a integrated way regarding enforcement Information on illegal logging updated in pilot areas
Develop and implement a computerized integrated system for control and monitoring forest activities	<ul style="list-style-type: none"> Studies, consultancies, workshops, acquisition of equipment and vehicles, 	<ul style="list-style-type: none"> Technical consultants/firm to develop a system contracted GIS equipment and database installed and functioning Maps of pilot areas and information on all existing licenses incorporated into the database system licensing information geo-referenced. Government staff trained on use of GIS and database systems as monitoring tools and for evaluation of requests for new licenses Data on all licenses issued in the last 2 years input in the system Satellite imagery and GPS purchased, and base maps based on satellite images are prepared Bar-code based system prepared for Santarem pilot area and staff trained on its use 		<ul style="list-style-type: none"> New procedures established Computerized integrated system for control and monitoring of forest activities fully operational
Implement enforcement plan for logging activities		<ul style="list-style-type: none"> A monitoring system for the várzea region in the Amazonas State is developed Handbooks and guidelines for field inspections and train staff from environmental agencies prepared Infrastructure for checkpoints, including transport and communications equipment implemented Field inspections program implemented with partners 		<ul style="list-style-type: none"> Control posts operational Field inspections operational Diminishing of illegal activities Companies not in compliance punished
Implement an independent auditing system.		<ul style="list-style-type: none"> Auditing agency identified and approved by the project committee. IBAMA, OEMAs and other executing agencies audited annually 		<ul style="list-style-type: none"> At year 5, system continues to operate with updated information, continuous training of staff, and purchase of new satellite imagery

Note: IBAMA is the executing agency for this component. IBAMA will work in partnership with SECTAM/PA, IPAAM, and NGO.

Component 4: Participatory management and conservation of Tapajos National Forest

Objectives	Inputs	Outputs	Assumptions and risks	Outcomes and Impacts (of project activities)
<p>Implement participatory management of timber and non-timber forest products by local communities</p>	<ul style="list-style-type: none"> RFT Grant KfW Grant GTZ Grant Counterpart funds <p>Funds will be used for</p> <ul style="list-style-type: none"> training, land demarcation, construction and equipment for control posts 	<p><i>Strengthening community organization and capacity:</i></p> <ul style="list-style-type: none"> 64 coordination & planning intercommunity leaders meetings and 16 community forum and assemblies 16 community training programs and 10 exchange workshops <p><i>Preparation of Utilization plan</i></p> <ul style="list-style-type: none"> 36 community meetings to discuss Utilization Plan 6 intercommunity meetings held to discuss plan completed Utilization maps and plans completed demarcation in 16 communities <p><i>Forest Management</i></p> <ul style="list-style-type: none"> Market studies for traditional and non-traditional forest products completed 96 local and 20 regional courses on agroforestry and sustainable forest use organized and carried out 10 forestry and agroforestry technicians and monitors trained Transport equipment and maintenance materials purchased pilot nursery and planting in place pilot harvesting of forest products tested <p><i>Community health programs</i></p> <ul style="list-style-type: none"> Inter-community health commission established Health: 16 community assessments, health care programs prepared (one in each community) 10 courses on community health provided 10 community health agents trained 	<p>Several local organizations and IBAMA to work in partnership</p>	<ul style="list-style-type: none"> Increased skills in administration, accounting and monitoring in 16 communities 2 local community associations fully operational and independent Increase in income generation from agroforestry products and forest products Increased environmental awareness of forest value Increase in knowledge of health issues by members of 18 communities System of community health monitors fully operational by year 4
<p>Strengthen local capacity to monitor and control illegal activities inside the national forest</p>		<p><i>Strengthening local capacity to control illegal activities:</i></p> <ul style="list-style-type: none"> IBAMA staff and community members trained in enforcement activities FLONA demarcation completed Five control posts constructed and three renovated All control posts fully equipped with electrical generators, communication systems, transport equipment, GPS, and furniture, and are operational Water capture system established Twelve additional guards hired 		<ul style="list-style-type: none"> Control posts fully operational Less illegal hunting in the FLONA Less land invasion in the FLONA Improvement of relationship between IBAMA and communities

Objectives	Inputs	Outputs	Assumptions and risks	Outcomes and Impacts (of project activities)
Implement environmental education program on fire prevention and wildlife conservation		<ul style="list-style-type: none"> • Community monitors trained in fire prevention and wildlife conservation • Handbook on fire prevention and wildlife management written • 10 courses held in urban and rural schools • Educational materials for use in schools prepared and distributed • Programs on fire prevention and wildlife conservation broadcast on local radio and TV. 		<ul style="list-style-type: none"> • Less occurrence of accidental fires • clients of the environmental education program aware of the importance of fire control and wildlife
Implement an ecotourism program for the Tapajós National Forest		<ul style="list-style-type: none"> • Consultant contracted and Ecotourism plan developed • Agreements between communities and Department of Tourism and/or tour agencies signed • Communities informed about ecotourism • Visitor center constructed • Promotional materials produced and distributed • Community members trained in ecotourism 		<ul style="list-style-type: none"> • Income generated to local communities from ecotourism activities • Promotional materials attract visitors to FLONA and communities • Increase in # of visitors to FLONA • Greater satisfaction from visitors from FLONA visits (survey)

Note: The executing agencies for this component are: IBAMA, STR, AITA, ASMIPRUT, PSA.

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ANNEX 6: BASELINE DATA OF KEY IMPLEMENTING INSTITUTIONS**

Table 6.1: NGO Summary

	STR-Santarem	AITA	ASMIPRUT	GDA	PSA
Date of Establishment	1973	1994	1994	1978	1987
Estimated Annual Budget	US\$ 66,000	US\$ 432	US\$ 400	US\$ 13,100	US\$ 490,225
Sources of funds	member fees, donations, emission of membership cards.	member fees = US\$ 0,50/member	member fees = US\$ 1,00/member	Grants from CEBEMO, IBRADES	Grants from KAS, British Embassy, OPAS, UE, UNICEF, UNAIS
# of Staff	2 staffs, 1 temporary staff	0	0	3	37 (11 graduates, 13 technical staff)
# of members	6,500	72	47	30	n/a
Geographical area of work	Municipality of Santarem (approximately 800 rural communities)	10 communities located in the FLONA	9 communities (7 located in the FLONA)	Santarém: mostly in the urban and in the surroundings	17 riverine communities in the municipality of Santarem (8 located in the FLONA)

Activities	union activities, represents rural workers, conflict resolution, assistance to members.	participation in the preparation of this project.	participation in the preparation of this project.	Environmental education projects (tree planting, urban garbage, medicinal plants). Organization of seminars, workshops. Production of booklets on environmental issues. GDA has a small information center (library) open to the public.	Community programs on: health (vaccination, training of health monitors); agricultural and forestry extension; environmental education (rural areas), communication, and community organization.
Administration	Board of Directors: (5 people) elected for a period of 5 years.	Board of Directors: (5 people) elected for a period of 3 years.	Board of Directors: (5 people) elected for a period of 2 years.	Board of Coordinators (6 people) elected annually. Often there is only one proponent.	Fixed director
Own office	yes	no	no	yes	yes
Notes	With the creation of a new Union (in Belterra), Santarém union will lose half its members.	next election of Board of Directors in 1997	next election of Board of Directors in 1996	Coordinators are usually re-elected	

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**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
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ANNEX 7: DETAILED PROJECT COSTS

Planilhas Detalhadas de Custos

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
Coordenação do Projeto										
A) Coordenação										
<i>1. Honorários</i>										
1.1. Coordenadores Tecnicos (5)	160,000	160,000	160,000	160,000	160,000	800,000	10	880,000	CONS	RFT
1.2. Tecnicos Financeiros	36,000	36,000	36,000	36,000	36,000	180,000	10	198,000	CONS	RFT
1.3 Secretarias (2)	24,000	24,000	24,000	24,000	24,000	120,000	10	132,000	CONS	RFT
<i>2. Transporte</i>										
2.1 Aereo	8,000	8,000	8,000	8,000	8,000	40,000	20	48,000	TRVL	RFT
2.2 Terrestre (taxi)	720	720	720	720	720	3,600	20	4,320	TRVL	RFT
<i>3. Diárias e Hospedagem</i>										
	7,200	7,200	7,200	7,200	7,200	36,000	20	43,200	TRVL	RFT
<i>4. Comunicação</i>										
4.1 Correio	1,500	1,500	1,500	1,500	1,500	7,500	20	9,000	OVHD	RFT
4.2 Fax/Telefone	3,000	3,000	3,000	3,000	3,000	15,000	20	18,000	OVHD	RFT
<i>5. Material de Consumo</i>										
5.1 Fotocopias	2,000	2,000	2,000	2,000	2,000	10,000	20	12,000	MAT	RFT
5.2 Material de escritório	2,000	2,000	2,000	2,000	2,000	10,000	20	12,000	MAT	RFT
<i>6. Escritorio</i>										
6.1 Computadores (2)	17,500	0	0	0	0	17,500	5	18,375	EQ	RFT
6.2 Fax	2,250	0	0	0	0	2,250	10	2,475	EQ	RFT
<i>Taxa do PNUD</i>										
	1,500	11,300	11,300	11,300	11,400	46,800	0	46,800	OVHD	RFT
						A) Coordenação		1,288,650		1,424,170
B) Comissão do Projeto										
<i>1. Transporte</i>										
1.1 Aereo BSB-BEL-BSB (8/ano)	3,900	3,900	3,900	3,900	3,900	19,500	10	21,450	TRVL	RFT
1.2 Aereo BSB-MAU-BSB (3/ano)	1,800	1,800	1,800	1,800	1,800	9,000	10	9,900	TRVL	RFT
1.3 Aereo STN-BSB-STN (3/ano)	1,650	1,650	1,650	1,650	1,650	8,250	10	9,075	TRVL	RFT
1.4 Aereo RBR-BSB-RBR (1/ano)	700	700	700	700	700	3,500	10	3,850	TRVL	RFT
1.5 Aereo RIO-BSB-RIO (1/ano)	500	500	500	500	500	2,500	10	2,750	TRVL	RFT
1.6 Aereo SPO-BSB-SPO (2/ano)	920	920	920	920	920	4,600	10	5,060	TRVL	RFT
<i>1. Transporte Terrestre</i>										
1.7 Taxi	1,900	1,900	1,900	1,900	1,900	9,500	10	10,450	TRVL	RFT
<i>2. Diarias</i>										
	4,800	4,800	4,800	4,800	4,800	24,000	20	28,800	TRVL	RFT
<i>3. Comunic.</i>										
3.1 Correio	1,500	1,500	1,500	1,500	1,500	7,500	10	8,250	OVHD	RFT
3.2 Fax/Telefone	3,000	3,000	3,000	3,000	3,000	15,000	10	16,500	OVHD	RFT
<i>4. Mat Consumo</i>										

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
4.1 Fotocopias	2,000	2,000	2,000	2,000	2,000	10,000	10	11,000	MAT	RFT
4.2 Material de escritório	2,000	2,000	2,000	2,000	2,000	10,000	10	11,000	MAT	RFT
B) Comissão do Projeto						123,350		138,085		
C) Comissão Tapajós										
<i>Viagens</i>										
	13,500	13,500	13,500	13,500	13,500	67,500	20	81,000	TRVL	RFT
C) Comissão Tapajós						67,500		81,000		
Coordenação do Projeto						1,479,500		1,643,255		

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
Comp. 1: Estudos Estratégicos										
A) Estudos										
<i>A- Multidisciplinares e Intersetoriais</i>										
	50,000	150,000	150,000	100,000	0	450,000	0	450,000	CONS	ODA
<i>B- Setoriais aprofundados</i>										
	50,000	100,000	100,000	100,000	50,000	400,000	0	400,000	CONS	ODA
<i>C- Focalizados</i>										
	30,000	30,000	30,000	30,000	30,000	150,000	0	150,000	CONS	ODA
				A) Estudos		1,000,000		1,000,000		
B) Workshops										
<i>1. Workshops</i>										
	30,000	50,000	30,000	30,000	60,000	200,000	0	200,000	CONS	ODA
				B) Workshops		200,000		200,000		
C) Materiais de disseminacao										
<i>A.Publicacoes</i>										
	5,000	5,000	5,000	5,000	5,000	25,000	0	25,000	MAT	ODA
<i>B.Edicao e Impressao</i>										
	25,000	30,000	30,000	40,000	50,000	175,000	0	175,000	MAT	ODA
<i>C.Audiovisual</i>										
	0	40,000	0	40,000	0	80,000	0	80,000	MAT	ODA
<i>D. Livro sintese</i>										
	0	0	0	0	90,000	90,000	0	90,000	MAT	ODA
				C) Materiais de disseminacao		370,000		370,000		
D) Reunioes do Grupo de Estudos										
<i>Viagens para reuniões</i>										
	30,000	30,000	30,000	30,000	30,000	150,000	0	150,000	TRVL	ODA
				D) Reunioes do Grupo de Estudos		150,000		150,000		
E) Assessoria Tecnica										
<i>Assessoria Técnica</i>										
	30,000	30,000	30,000	0	0	90,000	0	90,000	TC	ODA
				E) Assessoria Tecnica		90,000		90,000		
F) Avaliacao										
<i>Consultoria</i>										
	0	30,000	30,000	0	30,000	90,000	0	90,000	CONS	ODA
				F) Avaliacao		90,000		90,000		
				Comp. 1: Estudos Estratégicos		1,900,000		1,900,000		

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
Comp. 2: Apoio a Iniciativas Promissoras										
A) Apoio direto aos projetos										
<i>Sub-projects</i>	1,000,000	1,500,000	1,500,000	1,500,000	750,000	6,250,000	0	6,250,000	SUBPR	KFW
						6,250,000		6,250,000		
B) Acompanhamento no Campo										
<i>Viagens de Avaliação de Campo</i>	30,000	30,000	30,000	30,000	30,000	150,000	0	150,000	TRVL	KFW
						150,000		150,000		
C) Auditorias Independentes										
<i>Auditorias</i>	40,000	40,000	40,000	40,000	40,000	200,000	0	200,000	CONS	KFW
						200,000		200,000		
D) Disseminação e Publicações										
<i>A. Workshops</i>	20,000	20,000	20,000	40,000	20,000	120,000	0	120,000	CONS	KFW
<i>B. Videos</i>	56,000	0	0	64,000	0	120,000	0	120,000	MAT	KFW
<i>C. Cartilhas</i>	10,000	10,000	0	0	0	20,000	0	20,000	MAT	KFW
<i>D. Manuais</i>	0	0	20,000	0	20,000	40,000	0	40,000	MAT	KFW
<i>E. Viagens de intercambio</i>	20,000	20,000	20,000	20,000	20,000	100,000	0	100,000	TRVL	KFW
						400,000		400,000		
E) Equipamento										
<i>Computador</i>	5,000	0	0	0	0	5,000	0	5,000	EQ	KFW
						5,000		5,000		
						7,005,000		7,005,000		

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
Comp. 3: Sistema de Monitoramento e Controle										
A) Desenvolvimento do Sistema GERAL										
<i>1. Revisao, avaliacao e sugestoes de redefinicao das normas de licenciamento</i>										
1.1 Trabalho tecnico	120,000	0	0	0	0	120,000	10	132,000	CONS	RFT
1.2 Realizacao de 2 workshops com varios atores	45,000	0	0	0	0	45,000	10	49,500	CONS	RFT
<i>2. Desenvolvimento do sistema informatizado e integrado de controle</i>										
2.1 Avaliacao dos procedimentos de licenciamento	20,000	0	0	0	0	20,000	10	22,000	CONS	RFT
2.2 Criacao do projeto logico e do formato dos de dados (layout, interacao com usuario, etc.)	80,000	0	0	0	0	80,000	10	88,000	CONS	RFT
2.3 Avaliacao e readequacao do sistema informatizado de controle de documentos	0	0	20,000	0	0	20,000	10	22,000	CONS	RFT
<i>3. Elaboracao de manuais e indicadores de avaliacao de campo</i>										
3.1 Definicao de criterios e indicadores para avaliacao de campo	15,000	15,000	0	0	0	30,000	10	33,000	CONS	RFT
3.2 Elaboracao de manuais para vistorias de campo	10,000	10,000	0	0	0	20,000	0	20,000	CONS	RFT
3.3 Treinamento de fiscais de campo em vistorias de planos de manejo	15,000	15,000	15,000	0	0	45,000	0	45,000	TRAIN	RFT
A) Desenvolvimento do Sistema GERAL						380,000		411,500		
B) Desenvolvimento do Sistema SANTAREM										
<i>1. Implantacao do sistema de informatizacao</i>										
4.1 Entrada dos dados (documentos):	15,000	0	0	0	0	15,000	10	16,500	TRVL	KFW
4.2 Digitacao e confeccao dos mapas base	15,000	0	0	0	0	15,000	10	16,500	CONS	KFW
4.3 Georeferenciar informacoes de campo	50,000	25,000	0	0	0	75,000	15	86,250	TRVL	KFW
4.4 Sobrevoe para confirmacao de padroes de interpretacao (\$600/hora)	0	12,000	0	0	0	12,000	15	13,800	CONS	KFW
4.5 Integracao dos bancos de dados e mapas	10,000	0	0	0	0	10,000	10	11,000	CONS	KFW
4.6 Treinamento em utilizacao do sistema	15,000	0	0	0	0	15,000	10	16,500	TRAIN	KFW
<i>2. Sistema de codigo de barras para Santarem</i>										
5.1 Criacao do projeto logico	70,000	0	0	0	0	70,000	5	73,500	CONS	KFW
5.2 Treinamento de pessoal	10,000	10,000	0	0	0	20,000	15	23,000	TRAIN	KFW
<i>3. Equipamentos</i>										
2 Computadores (1 Ibama, 1 Sectam)	10,000	0	0	0	0	10,000	5	10,500	EQ	KFW
2 GPSs (2 Ibama, 2 Sectam)	5,000	0	0	0	0	5,000	5	5,250	EQ	KFW
2 Modems (1 Ibama, 1 Sectam)	1,000	0	0	0	0	1,000	5	1,050	EQ	KFW
Leitores oticos e data logger para o sistema de codigo de barras	9,000	0	0	0	0	9,000	10	9,900	EQ	KFW
B) Desenvolvimento do Sistema SANTAREM						257,000		283,750		

C) Implantacao do Sistema SANTAREM

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
1. Vistorias de campo										
1.1 Terceirizacao de vistorias de infracoes	0	100,000	100,000	75,000	50,000	325,000	0	325,000	CONS	KFW
1.2 Vistorias de planos de manejo (terceirizado)	0	30,000	35,000	50,000	50,000	165,000	0	165,000	CONS	KFW
1.3 Auditoria das empresas pelo Ibama/Sectam	0	3,000	3,000	3,000	3,000	12,000	0	12,000	TRVL	Gov
2. Ações de fiscalizacao										
Intervencoes de campo conjuntas com Sectam, etc.	0	9,000	9,000	9,000	9,000	36,000	0	36,000	CONS	KFW
3. Auditorias independentes	0	10,000	10,000	10,000	10,000	40,000	5	42,000	CONS	KFW
4. Manutencao do sistema informatizado de controle										
4.1 Compra de imagens 1:100.000 (80 a cada observacao x \$500)	40,000	40,000	0	40,000	0	120,000	5	126,000	EQ	KFW
4.2 Atualizacao de digitacao de imagens	0	7,500	7,500	7,500	7,500	30,000	10	33,000	CONS	KFW
4.3 Suporte tecnico ao sistema de informatizacao	0	15,000	15,000	15,000	15,000	60,000	10	66,000	CONS	KFW
4.4 Treinamento no uso do sistema	0	15,000	7,500	7,500	7,500	37,500	10	41,250	TRAIN	KFW
5. Equipamentos										
2 pick-ups, cabine dupla 4x4 (38,000/veiculo)	76,000	0	0	0	0	76,000	5	79,800	VEH	KFW
Barco 20 m , motor 160HP	80,000	0	0	0	0	80,000	5	84,000	VEH	KFW
Baterias de rádio (4 x 75/bateria)	300	0	0	0	0	300	5	315	EQ	KFW
Carregadores de bateria (4 x 120/carregador)	480	0	0	0	0	480	5	504	EQ	KFW
Estações de rádio móvel (4 x 930/estação)	3,720	0	0	0	0	3,720	5	3,906	EQ	KFW
Etiquetas de código de barra	0	17,500	17,500	17,500	17,500	70,000	5	73,500	EQ	KFW
Voadeira 45 HP	10,000	0	0	10,000	0	20,000	5	21,000	VEH	KFW
6. Despesas correntes (Ibama e Sectam)										
Combustível e manutencao de barcos (3500/ano/barco)	21,000	21,000	21,000	21,000	21,000	105,000	20	126,000	MAINT	Gov
Combustível e manutencao de pickups (3500/ano/veiculo)	7,000	7,000	7,000	7,000	7,000	35,000	20	42,000	MAINT	Gov
Insumos diversos	15,000	15,000	15,000	15,000	15,000	75,000	20	90,000	MAT	Gov
Material de consumo	5,000	5,000	5,000	5,000	5,000	25,000	20	30,000	MAT	Gov
C) Implantacao do Sistema SANTAREM						1,316,000		1,397,275		

D) Desenvolvimento do Sistema ITACOATIARA

1. Implantacao do sistema de informatizacao										
4.1 Entrada dos dados (documentos):	15,000	0	0	0	0	15,000	10	16,500	TRVL	KFW
4.2 Digitacao e confeccao dos mapas base (hidrografia, estradas, municipios, etc)	15,000	0	0	0	0	15,000	10	16,500	CONS	KFW
4.3 Georeferenciar informacoes de campo	50,000	25,000	0	0	0	75,000	15	86,250	TRVL	KFW

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
4.4 Sobrevôo para confirmação de padrões de interpretação (\$600/hora)	0	12,000	0	0	0	12,000	15	13,800	CONS	KFW
4.5 Integração dos bancos de dados e mapas	10,000	0	0	0	0	10,000	10	11,000	CONS	KFW
4.6 Treinamento em utilização do sistema	15,000	0	0	0	0	15,000	10	16,500	TRAIN	KFW
2. Desenvolvimento de um sistema de monitoramento para a varzea										
5.1 Definição de um sistema para a varzea em processo participativo	100,000	0	0	0	0	100,000	0	100,000	CONS	KFW
3. Equipamentos										
2 Computadores (1 lbama, 1 IPAM)	10,000	0	0	0	0	10,000	5	10,500	EQ	KFW
2 GPSs (2 lbama, 2 IPAM)	5,000	0	0	0	0	5,000	5	5,250	EQ	KFW
2 Modens (1 lbama, 1 IPAM)	1,000	0	0	0	0	1,000	5	1,050	EQ	KFW
D) Desenvolvimento do Sistema ITACOATIARA						258,000		277,350		

E) Implantação do Sistema ITACOATIARA

1. Vistorias de campo

1.1 Terceirização de vistorias de infrações

0 100,000 100,000 75,000 50,000 325,000 0 325,000 CONS KFW

1.2 Vistorias de planos de manejo (terceirizado)

0 30,000 35,000 50,000 50,000 165,000 0 165,000 CONS KFW

1.3 Vistorias anuais de exploração de varzea (terceirizado)

40,000 40,000 40,000 40,000 40,000 200,000 0 200,000 CONS KFW

1.4 Auditoria das empresas pelo lbama/IPAM

0 3,000 3,000 3,000 3,000 12,000 0 12,000 TRVL Gov

2. Ações de fiscalização (intervenções de campo conjuntas com Ipam, etc)

2.1 Ações de terra firme (\$ 3000 por ação)

0 9,000 9,000 9,000 9,000 36,000 0 36,000 TRVL KFW

2.2 Ações na varzea (\$ 40.000 por ação, diárias e insumos)

0 40,000 40,000 40,000 40,000 160,000 0 160,000 TRVL KFW

3. Auditorias independentes

0 10,000 10,000 10,000 10,000 40,000 5 42,000 CONS KFW

4. Manutenção do sistema informatizado de controle

4.1 Compra de imagens 1:100.000 (80 a cada observação x \$500)

40,000 40,000 0 40,000 0 120,000 5 126,000 EQ KFW

4.2 Atualização de digitalização de imagens

0 7,500 7,500 7,500 7,500 30,000 10 33,000 CONS KFW

4.3 Suporte técnico ao sistema de informatização

0 15,000 15,000 15,000 15,000 60,000 10 66,000 CONS KFW

4.4 Treinamento no uso do sistema

0 15,000 7,500 7,500 7,500 37,500 10 41,250 TRAIN KFW

5. Equipamentos

Barcos para ação na varzea (2)

140,000 0 0 0 0 140,000 5 147,000 VEH KFW

Baterias de rádio (8 x 75/bateria)

600 0 0 0 0 600 5 630 EQ KFW

Carregadores de bateria (8 x 120/carregador)

900 0 0 0 0 900 5 945 EQ KFW

Estação central de rádio (1 em Jurua)

5,000 0 0 0 0 5,000 5 5,250 EQ KFW

Estações de rádio móvel (8 x 930/estação)

7,400 0 0 0 0 7,400 5 7,770 EQ KFW

Pick-ups, cabine dupla 4x4 (2 x 36,000/veículo)

76,000 0 0 0 0 76,000 5 79,800 VEH KFW

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
Voadeiras (2 para varzea, a cada 3 anos))	20,000	0	0	20,000	0	40,000	5	42,000	VEH	KFW
6. Despesas correntes (lbama e lpam)										
Combustivel e manutencao de barcos (3500/ano/barco)	14,000	14,000	14,000	14,000	14,000	70,000	20	84,000	MAINT	Gov
Combustivel e manutencao de pickups (3500/ano/veiculo)	7,000	7,000	7,000	7,000	7,000	35,000	20	42,000	MAINT	Gov
Insumos diversos	15,000	15,000	15,000	15,000	15,000	75,000	20	90,000	MAT	Gov
Material de consumo	5,000	5,000	5,000	5,000	5,000	25,000	20	30,000	MAT	Gov
E) Implantacao do Sistema ITACOATIARA						1,660,400		1,735,645		
Comp. 3: Sistema de Monitoramento e Controle						3,871,400		4,105,520		

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
Comp. 4: Apoio ao Manejo Florestal na FLONA Tapajós										
A) Manejo Comunitário da Margem (Based on Doc. May 31, 1996)										
1. Equipe técnica										
..	112,000	116,100	116,100	116,100	116,100	576,400	5	605,220	CONS	KFW
2. Consultores externos e cooperantes locais										
..	5,500	5,500	23,000	5,500	5,500	45,000	0	45,000	CONS	KFW
3. Treinamentos										
..	48,000	39,018	29,000	23,800	22,000	161,818	10	178,000	TRAIN	KFW
4. Equipamento de Apoio Logístico das Equipes										
..	105,714	0	0	0	0	105,714	5	111,000	VEH	KFW
5. Gastos Administrativos										
..	7,200	7,200	7,200	7,200	7,200	36,000	0	36,000	OVHD	KFW
6. Atividades Sociais (a fundo perdido)										
1. Plano de Utilização	0	22,727	0	0	0	22,727	10	25,000	CONS	KFW
2. Organização	77,000	45,000	18,000	0	0	140,000	0	140,000	CONS	KFW
3. Saude	20,000	20,000	5,000	5,000	5,000	55,000	0	55,000	CONS	KFW
7. Atividades Produtivas (Fundo Rotativo)										
1. Manejo Florestal	23,000	50,000	60,000	77,000	50,000	260,000	0	260,000	CONS	KFW
2. SAF	25,000	25,000	50,000	70,000	50,000	220,000	0	220,000	CONS	KFW
						1,622,659		1,675,219		

A) Manejo Comunitário da Margem (Based on Doc. May 31, 1996)

B) Ação de Vigilância, Controle e Fiscalização

1. Demarcação e colocação de marcos dos limites físicos da Flona										
(350 x \$300/km - contratação de serviços)	55,000	50,000	0	0	10,000	115,000	10	126,500	WORK	KFW
2. Sinalização com placas de identificação										
(contratação de serviços)	20,000	0	0	5,000	0	25,000	10	27,500	WORK	KFW
3. Implantação de estrutura de vigilância e apoio										
3.2. Recuperação de 1 posto de apoio	10,000	0	0	0	0	10,000	15	11,500	WORK	KFW
Posto 1: Rodovia Cuiabá-Santarém, limite N*	25,000	0	0	0	0	25,000	15	28,750	WORK	KFW
Posto 2: Rodovia Cuiabá-Santarém, limite S	16,000	0	0	0	0	16,000	15	18,400	WORK	KFW
Posto 3: Rio Cupari	16,000	0	0	0	0	16,000	15	18,400	WORK	KFW
Posto 4: Aveiro	0	16,000	0	0	0	16,000	15	18,400	WORK	KFW
Posto 5: Rio Tapajós	0	0	16,000	0	0	16,000	15	18,400	WORK	KFW
Sistema de captação de água	40,000	0	0	0	0	40,000	15	46,000	WORK	KFW
4. Aquisição de equipamentos para os postos de vigilância										
1 aparelho GPS	1,000	0	0	0	0	1,000	5	1,050	EQ	KFW
1 estação central de rádio (Santarem)	5,000	0	0	0	0	5,000	5	5,250	EQ	KFW
1 lancha voadeira + motor 45 hp	10,000	0	0	0	0	10,000	5	10,500	VEH	KFW
10 estações de rádio móvel (930/estação)	9,300	0	0	0	0	9,300	5	9,765	EQ	KFW
2 pick-ups, cabine dupla 4x4 (38,000/veículo)	76,000	0	0	0	0	76,000	5	79,800	VEH	KFW

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
3 barcos de 10 ton. (20,000/barco)	20,000	20,000	20,000	0	0	60,000	5	63,000	VEH	KFW
4 kits de equipamentos de campo (1,500/kit)	3,000	0	0	3,000	0	6,000	5	6,300	EQ	KFW
5 antenas parabólicas (500/antena)	0	2,500	0	0	0	2,500	5	2,625	EQ	KFW
5 baterias de rádio (75/bateria)	350	0	0	0	0	350	5	368	EQ	KFW
5 botes de alumínio + motor de 25 hp (3,000/conjunto)	6,000	6,000	3,000	0	0	15,000	5	15,750	VEH	KFW
5 carregadores de bateria (120/carregador)	600	0	0	0	0	600	5	630	EQ	KFW
5 grupos geradores de 4.5 kva (5,000/gerador)	15,000	5,000	5,000	0	0	25,000	5	26,250	EQ	KFW
5 kits de utensílios gerais (3,000/kit)	9,000	3,000	3,000	0	0	15,000	5	15,750	EQ	KFW
5 televisores 14" (350/televisor)	0	1,750	0	0	0	1,750	5	1,838	EQ	KFW
móveis e eletrodomésticos (3,000/casa)	12,000	3,000	3,000	0	0	18,000	10	19,800	EQ	KFW
5. Treinamento de vigilantes										
Hospedagem/alimentação	4,250	0	0	4,250	0	8,500	15	9,775	TRAIN	KFW
Material didático	750	0	0	750	0	1,500	15	1,725	MAT	KFW
Transporte	500	0	0	500	0	1,000	15	1,150	TRVL	KFW
Treinamento (terceirizado)	5,000	0	0	5,000	0	10,000	15	11,500	CONS	KFW
6. Contratação de 8 vigilantes (10,000/vigilante/ano - terceirizado)										
Diárias	40,000	60,000	80,000	80,000	80,000	340,000	15	391,000	TRVL	Gov
7. Despesas correntes										
Combustível e manutenção de barcos (3500/ano/barco)	10,500	14,000	17,500	17,500	17,500	77,000	20	92,400	MAINT	Gov
Combustível e manutenção de pickups (3500/ano/veículo)	7,000	7,000	7,000	7,000	7,000	35,000	20	42,000	MAINT	Gov
Material de consumo	12,000	12,000	12,000	12,000	12,000	60,000	20	72,000	MAT	Gov
8. Pessoal do Ibama										
Passagens e diárias	6,000	6,000	7,000	7,000	8,000	34,000	20	40,800	TRVL	Gov
B) Ação de Vigilância, Controle e Fiscalização						1,091,500		1,234,875		

C) Desenvolvimento do Ecoturismo

1. Elaboração do plano										
	20,000	0	0	0	0	20,000	0	20,000	CONS	GTZ
2. Implementação do plano										
2.1. Infraestrutura mínima e equipamento	85,000	0	0	0	0	85,000	7	90,950	EQ	KFW
2.2 Treinamento	0	20,000	20,000	20,000	20,000	80,000	7	85,600	TRAIN	KFW
3. Divulgação										
Contratação de serviços de produção gráfica para folders, cartazes, adesivos, etc.	0	0	45,000	0	0	45,000	5	47,250	WORK	KFW
4. Monitoramento do plano										
	0	0	2,000	2,000	2,000	6,000	5	6,300	CONS	KFW
5. Despesas correntes										
5.1 Locomoção	4,500	1,500	3,000	4,500	3,000	16,500	0	16,500	TRVL	Gov
5.2 Apoio logístico	10,000	12,000	14,000	16,000	16,000	68,000	0	68,000	MAINT	Gov

	Ano 1	Ano 2	Ano 3	Ano 4	Ano 5	Sub-Total	Cont. %	Total	Categoria	Fonte
C) Desenvolvimento do Ecoturismo						320,500		334,600		
D) Prevenção ao Fogo, Caça e Pesca Predatórios										
<i>1. Diagnóstico da realidade</i>										
Identificação de áreas prioritárias	2,500	0	0	0	0	2,500	10	2,750	CONS	GTZ
<i>2. Formação de monitores multiplicadores (20-30)</i>										
1. Treinador (treinamento primeiroO	3,000	3,000	3,000	0	0	9,000	10	9,900	CONS	GTZ
2. Treinador (reciclagem)	0	0	0	2,100	2,100	4,200	10	4,620	CONS	GTZ
3. Transporte, hospedagem e alimentação	3,000	3,000	3,000	0	0	9,000	10	9,900	TRAIN	GTZ
4. Avaliação e acompanhamento	2,000	2,000	2,000	2,000	2,000	10,000	10	11,000	TRVL	GTZ
<i>3. Campanhas educativas</i>										
1. Realização de palestras nas escolas urbanas e rurais	1,500	1,500	1,500	1,500	1,500	7,500	10	8,250	TRAIN	GTZ
2. Produção e divulgação de mensagens nos meios de comunicação (Radio e TV)	7,000	7,000	7,000	7,000	7,000	35,000	10	38,500	TRAIN	GTZ
<i>4. Produção de material didático (informativo e audiovisual)</i>										
Cartilhas e folhetos	6,500	0	0	6,500	0	13,000	10	14,300	MAT	GTZ
<i>5. Seminários de planejamento e avaliação</i>										
1. Seminário de Planejamento	3,000	3,000	0	0	3,000	9,000	15	10,350	TRAIN	GTZ
2. Seminário de Planejamento e Avaliação	0	3,000	0	0	0	3,000	15	3,450	TRAIN	GTZ
3. Seminário de Avaliação	0	0	0	0	3,000	3,000	15	3,450	TRAIN	GTZ
<i>6. Equipe Técnica</i>										
1. Educadores ambientais (2)	20,800	20,800	20,800	20,800	20,800	104,000	5	109,200	CONS	GTZ
2. Contador	1,500	1,500	1,500	1,500	1,500	7,500	10	8,250	CONS	GTZ
<i>7. Equipamentos</i>										
1. 1 veículo utilitário (pick-up cabine dupla)	38,000	0	0	0	0	38,000	5	39,900	VEH	GTZ
2. 1 grupo gerador 3.5 kva, móvel	1,500	0	0	0	0	1,500	5	1,575	EQ	GTZ
3. 1 televisor c/ vídeo-cassete (20")	1,200	0	0	0	0	1,200	5	1,260	EQ	GTZ
4. 1 gravador	200	0	0	0	0	200	5	210	EQ	GTZ
5. 1 equipamento de som	5,000	0	0	0	0	5,000	5	5,250	EQ	GTZ
6. 1 computador 486 + impressora	2,600	0	0	0	0	2,600	5	2,730	EQ	GTZ
7. 1 lancha de alumínio + motor 45 hp	7,000	0	0	0	0	7,000	5	7,350	VEH	GTZ
8. 1 filmadora	2,000	0	0	0	0	2,000	5	2,100	EQ	GTZ
9. 1. Máquina fotográfica	200	0	0	0	0	200	5	210	EQ	GTZ
<i>8. Despesas correntes</i>										
Apoio logístico e manutenção	4,600	5,100	5,600	6,100	6,600	28,000	10	30,800	MAINT	GTZ
D) Prevenção ao Fogo, Caça e Pesca Predatórios						302,400		325,305		
Comp. 4: Apoio ao Manejo Florestal na FLONA Tapajós						3,337,059		3,569,999		

BRAZIL**PILOT PROGRAM TO CONSERVE THE BRAZILIAN RAIN FOREST
FOREST RESOURCES MANAGEMENT PROJECT****ANNEX 8: REPORTS AND DOCUMENTS IN PROJECT FILES**

Del Rey Serviços de Engenharia. Documento Básico para Desenvolvimento de Plano Estratégico para Promoção de Manejo Florestal Sustentado (February 1994).

IBAMA. Draft *portaria* containing the administrative structure of the Technical Secretariat and of the component "FLONA Tapajós", the process of its establishment, its functions and responsibilities, and profiles of key positions (April 1996).

IBAMA. Relatório Exploração Florestal Madeireira, Região Norte (March 1996).

IBAMA. Summary of a quantitative analysis of the forestry sector in the Amazon (April 1996).

IBAMA. Projeto Florestas Nacionais (August 1994).

IMAFLOA. Draft zoning plan - Version 2.1 (March 1996).

IMAFLOA. Projeto de Apoio ao Manejo Florestal na Amazônia. Versão 6.2 (January 1996).

ISPN. Estudo de Impacto Ambiental - Anexo - Diagnóstico Ambiental das Florestas Nacionais (January 1994).

ISPN. Estudo de Impacto Ambiental (January 1994).

MAPPA. Levantamento e Avaliação da Situação Fundiária das FLONAs - Relatório Final (1993).

MMA. Diretrizes para Formulação de uma Política Florestal Brasileira (November 1994).

MMA. Draft *portaria* "Coordenação e Execução Componente Análises Estratégicas" (February 1996).

MMA/IBAMA. Projeto de Apoio ao Manejo Florestal na Amazônia - Versão 6.3. (January 1996).

PRAXIS Projetos e Consultoria. Consultoria em Sociologia e Economia: FLONAs Caxiuana, Tefé e Tapajós (1993).

Projeto Saude e Alegria. Relatório Anual de Atividades (1995).

STCP Engenharia. Gerenciamento Administrativo, Institucional e Florestal (1993).

STCP Engenharia. Modelo de Gestão de Florestas Nacionais (October 1993).

STCP Engenharia. Parte 1: Guia para a Elaboração de Planos de Manejo Integrado, Sustentado e Participativo. Parte 2: Critérios para Identificação da Área Demonstrativa do Projeto nas FLONAs (October 1993).

STR & Grupo de Trabalho/Santarem. Relatório Processo de Definição da Situação Fundiaria (February 1996).

Verissimo, et. al.. Report presenting the results of the pre-selection of the “promising initiatives” component (May 1996).

MAP SECTION

