Global Environment Facility

GEF

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March 28, 2001

Dear Council Member,

UNDP, as the Implementing Agency for the project, *Brazil: Promoting Biodiversity Conservation and Sustainable Use in the Frontier Forests of Northwestern Mato Grosso,* has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures.

The Secretariat has reviewed the project document. It is consistent with the proposal approved by the Council in May 2000 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by UNDP satisfactorily details how Council's comments and those of the STAP have been addressed. I am, therefore, endorsing the project document.

We have today posted the proposed project document on the GEF website at www.gefweb.org. If you do not have access to the Web, you may request the local field office of the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

M. T. El-Ashry

cc: Alternates, Implementing Agencies, STAP

United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY (GEF)

8 January, 2001

Dear Mr. El-Ashry,

Subject: **BRA/00/G31/A/1G/99 – Promoting Biodiversity Conservation and Sustainable Use in the Frontier Forests in Northwestern Mato Grosso**

I am pleased to enclose the project entitled **"Promoting Biodiversity Conservation and Sustainable Use in the Frontier Forests in Northwestern Mato Grosso"** approved by the GEF Executive Council in May 2000. Also enclosed is the response to technical comments provided by the GEF Secretariat and Council.

As per paragraph 29 and 30 of the GEF Project Cycle, we are submitting this project to you for circulation to the Executive Council Members for comments and, subsequently, for your final endorsement.

Thank you in advance for expediting the review and approval of this project.

Yours sincerely,

Emma Torres
Officer-in-Charge and
Deputy Executive Coordinator

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RESPONSE TO GEF COUNCIL COMMENTS (DECEMBER 1999 AND MAY 2000): NW MATO GROSSO PROJECT

GEF COUNCIL COMMENTS	RESPONSE	REFERENCE
France: 1.1. Indicate the activities planned with respect to forest exploitation... what the incentive is for operators to manage their plots in a sustainable manner	All Output 3 activities are directed toward achieving the objective of "Sustainable Forest Management", which implies continuous forest rotations on the same land, consistent with GEF Guidelines. In particular, the project seeks to raise the bar in regional forest management toward FSC-certified operations, to access eco-markets which provide a price premium or preferential access for certified woods. There is now an Association of Certified Wood Buyers in Brazil that has committed to purchasing only certified timber, and similar markets overseas.	Project Brief: Output 3 Prodoc: pars. 28-29 and Objective 3
France: 1.2. Additional information should be provided regarding ProNatura International (capacity to manage the project, composition of the NGO) and on the relationship with the ONF/Peugeot project (a pilot project).	This project is being undertaken by Instituto Pró-Natura (IPN), which although affiliated with Pro-Natura International, is a financially and legally separate organization. IPN has been contracted to provide specific services to ONF/Peugeot toward the achievement of "synergy of the carbon sink with regional sustainable development activities". Full details on IPN's involvement in the project region, project management capacity, and the GEF project's relationship with the carbon sink pilot project are provided in the project documents.	On IPN's institutional capacity, see Project Brief: Annex K. Prodoc: par. 72, 80, and Annex 1 to this table. On the relationship of specific GEF project elements with Peugeot/ ONF carbon sink project, see Annex V (Objectives 1 and 2) and Annex 1 to this table.
France: 1.3. How does this project fit in with PPG7? Is it an associated project?	The GEF project is a follow-on to a PPG-7 (SPRN) funded PGAI segment in Northwest Mato Grosso, which is the baseline to the biodiversity overlay proposed that will ensure conservation and sustainable use of forest resources in the region The PGAI provides the necessary framework for integrated regional environmental management by state and local governments, but does not incorporate steps to ensure private land uses become sustainable.	Project Brief: pars. 24-25 and Output 1 Prodoc: par. 18-20 and Objective 1
France: 1.4. Additional information should be provided on the impact of the project on the local environment.	The project's Global Environmental Objective and expected End-of-Project situation reflects the anticipated impact of the project on local land use decisions and institutional capacity for environmental management. The project will be subjected to thorough socio-economic and environmental Monitoring and Evaluation to determine its effective impacts.	On local environmental impacts, see Project Brief: par. 55; 71-72; and Prodoc: par. 18, 32-33, and 56-60. Measurable socio-environmental results are specified in the Project Logframe, and in Annex II – Project Milestones.
Germany: 2.1. the method "micro-level ecological-economic zoning plan"	FEMA and municipal governments are conducting the regional ecological-economic zoning program with input from all local/regional	Project Brief: Output 1 Prodoc: par 17-20, Objective 1

GEF COUNCIL COMMENTS	RESPONSE	REFERENCE
(should) directly address the specific needs and problems in the project area (and) adapted accordingly, (with) capacity building of key stakeholders and governmental actors. Draw on the lessons learned by PRODEAGRO.	stakeholders, as part of the PGAI, now in its second year of implementation. Pro-Natura is accompanying this process closely, and in particular is working to guarantee stakeholder inputs to the process. As part of the adaptive management approach for landscape planning adopted for the GEF project, the results of initial ecological zoning will be adjusted and sharpened to reflect local realities and evolving concerns. The key lessons learned from PRODEAGRO are that it is extremely difficult to obtain useful information at a macro zoning level that can be applied toward regional land use planning, but it has provided a wealth of broad-scale information that can serve as the basis for more refined zoning and adaptive management.	
Germany: 2.2. The benefits out of non-timber products were overestimated in a previous version of the proposal. The alternative to integrate non-timber forest products into the proposed agro-silvopastoral system deserves further elaboration. Incentives and economic benefits to do so should be specified. In general, how to achieve sustainable use that is environmentally, economically and socially sound in such a complex fabric of actors and stakeholders requires further elaboration and specification.	Non-timber product integration within a mixed smallholder agrosilvopastoral system by settlers will be achieved through a gradual approach. Extensive management systems that employ low-impact gathering and processing of tropical forest products in remaining forest areas within settlements will be encouraged, beginning with a market trial of Brazil nut products. This has begin on the pilot settlement "Vale do Amanhecer" in Juruena, with an inventory of timber and non-timber forest products on a 7,000 hectare area under permanent forest reserve, combined with training of settlers in selection and harvest of seed-bearing mother trees, that will furnish seedlings for in-planting of desirable species for timber and non-timber products within agrosilvopastoral systems. In addition, Rohden Lignea, has already integrated planting of non-timber species within its sustainable forest management blocks after harvesting, including açaí (Euterpe oleracaea), serving as a demonstration for other logging enterprises in the project area. A number of modest initiatives for commercialization of NTFP have been made by small producers in a disorganized fashion. The project will develop initiatives to organize the producers and identify potential buyers for these NTFP. The project will also seek to add value to NTFP, through product marketing strategies (eg., eco-labelling). One such initiative will be launched on project inception, providing technical assistance in NTFP management, processing and marketing to the occupants of the Guariba-Roosevelt Extractive Reserve, where project efforts will also focus	Project Brief: Outcome 2, Annex G Prodoc: par. 24, 44-45, see also Annex VII on PDF-B outcomes.

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	on permanent demarcation of the reserve's boundaries.	
Germany: 2.3. Figures for PGAI under heading "4. Associated Financing" (page 2 of Project Brief) are not consistent with figures in Annex A Incremental Cost Analysis, para. 6 and para. 9 (difference 50,000 USD). It is not clear if the expenditure of 2 Mio USD of the timber operator Rohden Lignea is the company's total expenditure or if this sum is only dedicated specifically to support sustainable harvesting methods instead of regular destructive ones.	This inconsistency in the incremental cost analysis has been corrected. Rohden Lignea's commitment is dedicated to a general expansion in the company's forest-based operations at a cost of > $4 millon, including purchase of additional land and scale and technology improvements at the plant. The $2 million estimate in complementary associated financing is being undertaken to ensure the company's compliance with sustainable timber harvesting criteria. In addition, Rohden Lignea, has already integrated planting of non-timber species within its sustainable forest management blocks after harvesting, including açaí (Euterpe oleracaea), serving as a demonstration for other logging enterprises in the project area.	Associated Financing; Incremental Cost Analysis Project Brief: par. 29 Prodoc: par. 26-27. See also details on projected expenditures by Rohden Lignea/A2R in Annex V-Objective 3.
Switzerland: 3.1. (i) the project will be executed by a single NGO based in far away Rio de Janeiro; (ii) the number of beneficiaries for output 2 and 3 is very limited (10 to 20 local producers, and a single logging company). This seems to indicate weaknesses in the participatory process and consequently in local ownership.	(i) Pro-Natura has operated a research and extension program based in the project region for nearly 10 years. GEF project execution will be managed from this site by a regional coordinator. Our ability to mobilize technically competent support from national universities, agricultural research institutions, etc. is primarily due to the fact that Pro-Natura has close working relations with institutions throughout the country and internationally in numerous projects, which would not be possible if we were limited to this project area. (ii) The number of "beneficiaries" from the project is limited by the fact that GEF resources are not destined toward direct investment in production, but rather in providing the framework for demonstration, capacity-building and broad dissemination and replication of biodiversity-friendly technologies over an immense area. The project is therefore by no means limited to the proposed demonstration sites, (10 farmers and 1 logging company in **each** of 5 municipalities) but rather will involve stakeholders and firms throughout the region, through a range of training, information media and economic instruments. To equate the number of demonstration units with the broad benefits associated with the project is thus inappropriate.	Project Brief: par. 10, 26, 30; Annex K Prodoc: par. 72, 80 and Annex 1 to this table on IPN's capacity to execute the project. On number of direct project beneficiaries, see:Project Brief: par. 45, 52 Prodoc: par. 43, 50, and quantitative targets in Logical Framework Matrix, section C.
Switzerland: 3.2. excessive use of herbicides	The purported environmental damages reported by the press associated with the	See communiqué by Domingos Sávio Arruda, Brazilian

GEF COUNCIL COMMENTS	RESPONSE	REFERENCE
(Roundup) in the Peugeot/ONF "carbon sequestration" project area with drastic consequences to flora and fauna ... Reputational risk for GEF who would be well advised to follow closely the official investigation now under way and to reconsider its relations with these partners accordingly. Any adverse impacts of such activities must be avoided.	Peugeot/ONF/Pro-Natura carbon sink project were determined to have been unfounded by the Federal Public Prosecutor's office (Ministério Público) of Mato Grosso in a definitive brief dismissing the denunciation and related fines against the project on February 10, 2000. This concern resulted in a 7-month delay while IBAMA reviewed the carbon sink project, before committing itself to be a collaborator in the GEF project. The fact that IBAMA has now signed-on to its collaboration in the GEF project indicates that these environmental concerns have now been resolved, and that the carbon sink is considered to represent incremental benefit toward biodiversity conservation and sustainable use in the project region.	Ministério Público, Feb. 10, 2000 Letter of commitment to GEF project by IBAMA President Marília Cerqueira
Switzerland: 3.3. Credibility and transparency of some of the key partners of the proposed GEF project: (i) IPN is proposed as the Operational arm" of the GEF projects executing agency, the State Foundation for Environment (FEMA). It might be more appropriate to work with truly regionally based organizations (they exist) or at least to involve them closely. (ii) Also, what guarantees exist that Peugot/ONF as co-financiers of the GEF project act transparently and based on established procedures and biodiversity conservation principles? It appears that the above-mentioned carbon sequestration activities were not even registered with the Government as required by Brazilian law.	(i) As mentioned under item 3.1., above, IPN has been based in the project region for nearly 10 years, which is longer than many of the colonists and other land users who reside there. It is the only national/international NGO with long-term activities and a commitment to socio-environmental sustainability in the project region. "Truly regionally based organizations", where they exist, are fragile and lack scientific and technical capacity to manage a project of this complexity. However, they have all been involved in planning and will be engaged as partners in execution of this project. (ii) The carbon sink project was amply discussed with federal and state government officials at the outset in 1998, as a pilot project to explore the effectiveness of carbon sequestration by degraded land recuperation in areas deforested in the Amazon forest. Pro-Natura organized a national scientific panel to review the project's execution to date, that has performed an independent audit. As a result of the concerns discussed above, the partners in the carbon sink project determined to revamp their entire approach, and are committed to a full review of the technical merits and environmental benefits of the project, including its complementarity with the GEF project. The executor of the project, ONF, as a forest management agency of the French government, is sensitive to its responsibilities as a part of its technical cooperation mission, to comply with host government policies and national law, and to maintain complete transparency. The project has been duly licensed by FEMA, as required by state	(i) Project Brief: par. 10, 26, 30; Annex K Prodoc: par. 72, 80 and Annex 1 to this table. (ii) See comments by French government representative to GEF Council on this project, above, and remarks on IBAMA's stance under response to question 3.2

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	law.	
Switzerland: 3.4. The GEF project proposal does not provide convincing evidence that it went through an extensive consultation process.	GEF consultants who visited the project area and attended meetings on the project can attest to the strong support to the project expressed by regional stakeholders. IPN has furnished the Brazilian government with formal letters of financial and in-kind commitment from all local governments and several non-governmental organizations and private sector actors involved, as well as from FEMA, INCRA and IBAMA.	Prodoc: para. 62. See also further details on IPN's long-term engagement with regional stakeholders and representative organizations in Annex 1 to this Table, and formal commitment letters on file at UNDP-Brasília and at GEF Focal Point-SEAIN/MOG
Switzerland: 3.5. (i) FEMA figures as the "executing agency" of the proposed GEF project. Nevertheless, its role in this project is not at all clear. In general, implementation does not appear to involve directly the Executing Agency. (ii) Doubts on how much FEMA could gain from this project, since capacity building and technology transfer are not directed at local government agencies and NGOs. (iii) According to point 63 of the brief FEMA has the role of project coordination. However, the same role is foreseen for other state and federal authorities and some other agencies mentioned.	(i) FEMA is the responsible executing agency for the GEF project, having as its operational arm Instituto Pró-Natura based in the project region. FEMA is responsible for state environmental policy implementation and is the logical agency for the project in question, so much so that the PGAI is also under FEMA's management. Insofar as the GEF project represents a logical extension of the PGAI, providing a regional biodiversity conservation and sustainable use overlay to that important baseline effort, FEMA's role as coordinator is doubly warranted. Finally, FEMA's President, acting as National Project Director , will have a direct involvement in project implementation and will assign a Project Liaison Officer, based in the project field office in Juruena. (ii) All capacity-building and technology transfer are primarily directed at local government agencies and NGOs, rather than to the state government, which has already obtained significant support to its own implementation capacity through successive World Bank projects (Prodeagro, PPG-7/SPRN, PGAI, etc.). The latter, however, have not built capacity at the local level, which is the rationale for this focus in the GEF project. However, FEMA's regional and thematic staff responsible for the PGAI and related interventions in the project region will be directly involved in capacity building and training. (iii) FEMA will coordinate the inputs of the remaining state and federal agencies to the GEF project, through the PGAI steering mechanism, which will guide the operational aspects of the project to be carried out by IPN, as clearly laid-out in the Project Brief. Further details on the coordinating and implementation structure have been provided in the Project Document.	(i) Project Brief: par 9, 23 Prodoc: par. 17, 19, 59-60, 73, 79, and details on Executing Agency role and responsibilities at par. 81 and 89. Project Brief: par. 65, 68 Prodoc: Project Coordination Structure, par. 94-97 and Annex III: Project Coordination Arrangements
Switzerland: 3.6. It is not clear how this project will	State and local government environmental agencies and NGOs address the root causes of	Project Brief, par. 42, 58 Prodoc: par. 44

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address the root causes of deforestation. It looks as if it will produce and test some interesting alternatives, but not consider how existing perverse incentives and/or detrimental public policies are affecting land use and land use change in this area. It seems as if the proponents want to address neither the root causes nor conflicts resulting from the current destructive deforestation practices.	landlessness and colonization policies in Brazil, by criticizing and mobilizing to revert those policies and helping to find and promote sustainable alternative uses of the lands that have been opened up to colonization. Since political lobbying is not an appropriate purpose to apply GEF funds, the project will address the conflicting policy frameworks, which affect land use decisions, and test options for incentive structures which address these conflicts. This will be conducted through testing the application of such instruments as conservation easements, value-added tax deductions for sustainable logging and processing, certified timber markets, "green value-added tax" allocations to municipalities that have dedicated lands to permanent conservation, etc. The state government of Mato Grosso is heavily engaged in implementing a number of innovative instruments and incentives, with technical advice from IPN and other regional and international organizations.	
Switzerland: 3.7. The planned establishment of an agro-forestry center with the colonization agency INCRA, which does not focus on research and may be under political pressure to accommodate additional settlers in the area could be a weak point. In this sense, we would welcome more detailed information about INCRA programs and criteria for new settlements in the proposed area of the agro-forest model of IPN. The GEF project should avoid adverse impacts in general and the facilitation of new settlements could indeed be adverse.	INCRA is in the process of divesting itself of its "tutorship" of agrarian reform settlements nationwide, in a search for a more autonomous development model. The agroforestry demonstration and training center will be established within the area of a recent land reform settlement in Juruena on 14,400 hectares, located less than 100 meters from IPN's agroforestry research center. The titled colonists in this settlement, who compose the Association of Vale de Amanhecer Producers, are responsible for planning and developing the use of their properties, in association with the municipal government and IPN. This project does not promote, and indeed is opposed to further agrarian reform settlement in the project area, which is a source of pressure on remaining biodiversity, which the project explicitly seeks to permanently protect. In fact, neither IPN nor INCRA are in favor of expansion in settlement in the region. The Federal Government has committed itself by law to disallow any new colonization projects in areas under primary or advanced secondary forest regrowth. INCRA has also promulgated regulations on its "sustainable settlement" policy. However, there are 8 major settlements either planned or underway in the region, that represent	Project Brief: par. 28, 47 Prodoc: par. 45-46 Provisional Measure containing amendments to the Forest Code, April 2000; Sustainable Settlement regulations, adopted November 2000.

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	a critical source of additional pressure on the resource that the project seeks to absorb in biodiversity-friendly ways.	
Switzerland: 3.8. (i) there are no indications whether other segments from the private sector will be involved, such as rural cooperatives and small sawmill owners from the area. Sustainable forest management for medium-sized forested areas should be supported by this project. (ii)Despite its considerable size and scope the implementation of this project will largely rely on a single NGO and it may therefore be biased towards Pro-Natura's own interests in the region. We fully support the view expressed by the first official reviewer of the project Mr. Kenton Miller from WRI, who pointed out the crucial importance of extensive consultation and engagement of multiple NGOs.	(i) A number of regional sawmill operators of various scales and technical capacity have been engaged in presentation of sustainable logging techniques by IPN, and will continue to be engaged in such efforts throughout the GEF project. Their participation in training of chainsaw operators and logging crews undertaken by IPN under Prodeagro is documented. Local producer associations (ADERJUR and agrarian reform settlement associations) throughout the region are directly involved as partners and beneficiaries of the project, and their role in local timber supply is recognized as part of broader actions to involve local stakeholders in sustainable forest management. (ii) As described above under 3.1. and 3.3., IPN has been involved for many years in a stakeholder participatory process of agroforestry systems and sustainable forestry extension in the project area. The GEF project represents an extension of this participatory development process to a broader area and number of communities, all of which have been consulted in the process of project development, as is documented by the letters of commitment provided to the Brazilian government on behalf of the project. IPN is not serving its "own interests" in its partnerships in this region, and indeed has always stressed capacity-building among local governments and regional NGOs to take on the diverse tasks associated with this and other project initiatives. The exit strategy of this project includes explicit measures to ensure that these local stakeholders become capable of administering long-term land use and environmental management on termination of GEF support.	(i) Project Brief: par. 30, 52 Prodoc: par 27, 52-53. (ii) Project Brief: par. 61-62 Prodoc: par. 64-66
(iii) UFMT is based in distant Cuiaba and has few direct relations with this region. An alternative might be to assign project monitoring duties to local level stakeholders that would then be supported by the university.	(iii) Professors and students of the UFMT are directly involved in ongoing research on agroforestry systems and carbon sequestration in collaboration with IPN and ONF in the project region. During the project, UFMT staff will be responsible for ongoing monitoring,, in the service of local governments and NGOs, the direct users of the information generated through this process, but they will in practice train local stakeholders to gather and manage data that will	Project Brief: par. 49 Prodoc: par. 48, 54 and further details on project monitoring and assessment in Annex VI.

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	enable early warning of environmental impacts.	
Switzerland: 3.9. The promotion of NTFP and agro-forestry systems is not only a technical problem of harvesting and/or production, but also one of product marketing. In this case transportation costs will be a crucial factor for the economic feasibility of the proposed production systems and for their replication. In its current form the project will test some Forest Non Timber Products (FNTPs) but it lacks a convincing strategy for their commercialization.	Pro-Natura is involved with a number of Brazilian and international partners in testing market potential for a range of natural products, and this experience will be applied in the development and commercial testing of products from Juruena, including initially Brazil nuts, and then copaíba, jatobá and açaí. During the PDF-B phase, market potentials and constraints for these products were reviewed through feasibility studies. Annex VII provides more information on commercialization potential of some of the NTFPs assessed during the PDF-B.	Project Brief: par. 27, 46 Annex G Prodoc: par. 24, 44-45 Annex VII
Netherlands: 4.1. The link with the PPG7 is hardly elaborated. It is necessary to strengthen this.	The PPG-7 link is accomplished through the PGAI baseline activities described in depth in the Project Brief, and in a number of documents available to PPG-7/SPRN donors. As mentioned in 1.3., above, the project will rely on the baseline mapping and environmental management capacities developed through the PGAI, applying them to the management and harmonization of productive land uses in the region, and ensuring their long-term adaptation as conditions evolve.	Project Brief: pars. 24-25 and Output 1 Prodoc: par. 18-20 and Objective 1
Netherlands: 4.2. The proposal to introduce agrosilvopastoral models needs to be limited to adapting the activity of cattle raising in the forest to sustainable forest management. It seems unwise to focus on whole ranches but to limit the activities to support forest friendly activities.	It is our view that dealing with land use on a piecemeal basis will constitute grounds for failure in overall regional land use management. We focus adaptively on the pressures that promote continuing deforestation through intensification of ranching and cropping systems in environmentally friendly combinations with forest use on a property-by-property and contiguous corridor basis. This will enable us to achieve the goals of long-term regional biodiversity conservation and sustainable use at a landscape scale.	Project Brief: par. 33 Prodoc: par. 32, 34

FURTHER RESPONSE TO GEF SECRETARIAT AND WORLD BANK COMMENTS ON PROJECT PROFILE

COMMENTS	RESPONSE	REFERENCE
GEFSEC *1 k)… in addressing issues related to colonists, three suggestions are offered above for further clarification to ensure that the colonists adhere to sustainable uses. UNDP should consider this as it further prepares the project document… (to include) 4.…social analysis of beneficiary populations to determine the socio-economic correlates of adoption."*	The Prodoc provides more detailed characterization of the socio-economic correlates of sustainable technology adoption, as well as considerably more detail of the risks associated with this concern. A summary of key issues associated with social factors and gender concerns has been further elaborated based on the discussion in the initial Response to GEFSEC Comments.	Prodoc: Risks and Abatement Measures, especially d., g and h. Annex 2 below
WORLD BANK *2. Output 1 is to produce "Improved Land-Use plans with a biodiversity overlay. . " but this activity is not defined in sufficient detail in relation to different categories of land tenure and land use. The conceptual approach of designing "incentive systems to encourage individuals on both large and small holdings to conform to land use plans and adopt permanent conservation easements. . . " is a good one, but the proposal is mute on how it would be implemented. Since this proposal follows upon years of work in the area by IPN and other groups, it should be possible to describe these incentives more precisely and to set quantitative targets.*	We have responded to the lack of detailed quantification of targets in land use planning and incentive strategies by narrowing the scope of activities in this output primarily toward providing technical assistance to local municipalities in the development of their zoning and land use plans (Result 1.1) and then working with local stakeholders to build capacity and identify pathways toward their implementation (Result 1.2). This will include legal support and negotiations among landowners to secure permanent easements and recuperate legal reserves. Estimates are provided in the Logframe of the number of trainees and products anticipated from these activities. It should be noted that the specific mix of incentive mechanisms that can be brought to play, although detailed in the Prodoc, are currently undergoing considerable evolution. FEMA has assumed its part in the "federative pact", which has devolved significant environmental management authority to the state. New credit lines and fiscal incentives are being established that will offer a range of options for resource conserving land use, while control measures are being more rigidly enforced. Given the state of flux of public policy, it would be presumptuous for us to establish quantitative targets at this stage, but these should become part of the adaptive process adopted in implementation.	Prodoc: Sec. C. Objectives, Results ActivitiesIndicators and Risks: Objective 1 Prodoc: para. 73-76

COMMENTS	RESPONSE	REFERENCE
3. Uncertain institutional coordination. The proposal bravely promises the collaboration of a disparate group of institutions including the State Environmental Secretariat and Operational Agency (SEMA/FEMA), the State Extension Agency (EMPAER), the State Land Agency (INTERMAT), the Federal Environmental Agency (IBAMA) , the Federal Agricultural Research Enterprise (EMBRAPA), the Federal University of Mato Grosso (UFMT), the Federal Land Colonization Agency (INCRA), as well as at least one NGO, a local governing council, and Municipal Governments. The indigenous agency, FUNAI, is not mentioned, although a large portion of the region is under Indigenous Reserves. *In our experience, promoting institutional collaboration across numerous agencies in Brazil is a daunting task. It is unlikely to happen unless roles, responsibilities, budgets, and legal arrangements to underpin the hoped for collaboration have been explicitly defined and agreed in advance. Consequently, we would strongly suggest that an institutional matrix be prepared prior to project approval which sets out the following information… Without such specificity, the intended collaboration is not likely to materialize.*	As requested by the World Bank commentators, a detailed matrix of the specific roles in the project of our governmental, private sector and NGO partners has been provided at Annex V, including the funds committed by each actor, and (where no funds have yet been committed), details of collaborative roles in process of negotiation. It is anticipated that further co-financing and partnerships will emerge as the project is implemented, to complement the considerable GEF support programmed toward the region. In the same light, the Prodoc provides considerably greater details on the modus operandi of orchestrating this diverse set of actors, through formal regional project coordination with ongoing activities of government agencies. Other mechanisms that have arisen in the meantime as fruit of the GEF project's development, such as the newly formed intermunicipal Council on Sustainable Development and Research for Northwest Mato Grosso, will also play an important role in guaranteeing coordination and interchange among stakeholders and support institutions. Finally, the structure of project organization and staffing, including the specific designation of a Project Liaison Officer appointed by FEMA, will assure the adequate delivery of the services and outputs indicated in the Logframe.	Prodoc: Annex V – details on co-financing and complementary regional project activities Prodoc Sections F.1 and F.2 - Project Management, diagram of Project management structure (Annex IV), and detailed staff TORs (Annex IX)
4. Unclear involvement of stakeholders. Building on the previous point, the proposal refers to the involvement of farmers' associations, various state and federal institutions, and some businesses such as sawmill operators. However, it is unclear how these stakeholders will be woven together into a functioning organization or their activities integrated into a whole that will achieve the project	See response to 3., above	See references for 3., above

COMMENTS	RESPONSE	REFERENCE
objectives. Presumably, someone will carry out extension activities with different stakeholder groups and demonstrate alternative techniques for logging, cropping, grazing and gathering of NTFPs.		

Annex 1: Project Development and Implementation Capacity and Experience

The Pro-Natura "family" was initially established in Brazil in 1986 as Instituto Pró-Natura (IPN), a private non-profit organization recognized in 1995 as an entity of "Public Utility" by Presidential Decree. Soon after the Rio Earth Summit in 1992, former sponsors and advisors to the organization created Pro-Natura International, with headquarters in Paris, responsible for a range of projects underway primarily in West Africa, Guatemala and Laos. Pro-Natura USA, a private foundation under the United States tax code, was created in 1995, with headquarters in New York City. One of the aspects of Pro-Natura that makes it unique is that it is one of the few international sustainable development and environment organizations that was born in the South, rather than originating in the industrialized countries, offering a unique perspective and approach to regional social development and natural resource conservation in tropical forest areas.

In its 15 years of existence, IPN has been responsible for administering successful projects in sustainable development, natural resource management, park and nature reserve management planning, health and environmental education throughout Brazil. These projects are often managed through partnerships with state, municipal and federal agencies, in which IPN acts as the executor of government policies at the local level. IPN thus has considerable experience in administering complex projects involving a large number of stakeholders and beneficiaries.

At the international level, the Pro-Natura family is responsible for a growing portfolio of projects in tropical areas worldwide, and now commands an annual budget exceeding $3 million. This does not include projects undertaken in conjunction with other agencies, such as the Peugeot/ONF carbon sink in NW Mato Grosso, which is alone investing over $12 million, or the Shell/Camisea project, which involved investment in indigenous consultations, enviromental safeguards and biodiversity monitoring of over $10 million in 2 years.

Pro-Natura projects have been conducted with financial support from a wide range of organizations, including private corporations, foundations, multilateral agencies and banks. These initiatives in many cases have served as the basis to induce investments at a greater scale, such as those adopted by the World Bank in Mato Grosso through its Prodeagro program.

IPN staff have had broad theoretical training and practical experience in development fields, project monitoring and evaluation. The permanent staff includes professionals with doctoral and advanced graduate degrees at major Brazilian and international universities in: natural resource economics; rural development sociology and economic history; medicine and public health; agronomic and forestry engineering; environmental law and policy; business and public administration; communications and journalism.

Despite advanced training and a wide range of experience, as in many NGOs, project evaluation has not been as systematic as could be. In this regard, IPN will benefit from participation in ongoing efforts by UNDP and GEF to systematize M&E processes.

Annex 2: Social Factors and Gender Concerns Affecting Technology Adoption

POPULATION DYNAMICS

Although population growth is often a root cause of natural resource degradation and settlement expansion, paralleling the demographic transition in many developing countries, Brazil's rate of population growth has declined considerably, from over 2.5% per year in the 1980s to less than 1.4% at the close of the 1990s. This reduced population growth is a function of greater efforts to educate young women, improved health services and a corresponding realization by rural households not only that additional mouths only represent a burden, but that it is no longer necessary to bear as many children, since there is less risk of infant mortality. Furthermore, most remaining growth now gravitates toward urban areas, rather than the frontier, thus reducing some of the historical pressures on the natural resource base. Indeed, there has often been a return migration of colonists who have failed at the frontier.

Even in the frontier state of Mato Grosso, the demographic transition has brought a significant reduction in population growth, with an estimated drop to around 2% annual population growth in the early 1990s, expected to continue declining throughout the remainder of the decade. In Mato Grosso as well, successful policies to promote industrialisation have generated considerably more new jobs in urban centers, where employment has grown by over 80% in the past eight years from a small initial base. This growth is in marked contrast to the overall job loss in the rest of the Brazilian economy, where industrial employment has dropped over 24% over the same period. These data indicate that as sustainable development pathways are adopted in Mato Grosso and other areas of the Center-West (*cerrado* region), population growth will be progressively incorporated into settled areas, reducing direct pressure on the tropical forest resource base.

However, as has been clear for many years, population growth pressures alone do not account for deforestation and biodiversity loss. While highly correlated, the causal link between population growth and deforestation is equally dependent on local land tenure structure and resource access, as well as colonists' access to appropriate technologies and awareness of environmental fragility. In the past colonists were often forced to settle in inhospitable terrain with little technical or financial support, and ended up resorting to resource destructive practices that lead to later abandonment and ongoing frontier devastation.

PROPERTY RIGHTS

Land tenure and distribution remains one of the most important factors that affect adoption of biodiversity conserving land uses in the Amazon region. Absence of property rights delineation, whether in public or private hands, acts as an invitation to resource degradation. On the other hand, parcelization and distribution of land to colonists has also acted both as a spur to deforestation and to later concentration of land tenure as colonists fail and sell their holdings.

In contrast to many areas at the Amazon frontier that suffer the consequences of open access, much land in the project region is in private property in areas destined for colonization, ranching or timber management. In the Juruena Colonization project initiated in the mid-1970s, plots of different scales were sold to southern farmers and investors. Property rights are thus well delimited, establishing specific rights and responsibilities, including the 50% permanent forest reserve, and protection of water courses. In further contrast to colonization projects in other areas such as neighboring Rondônia, due to financial failure some

larger properties have been offered for sale to INCRA for new land settlements, and the tendency is toward gradual deconcentration of land ownership.
Another important recently recognized social issue at the frontier is that of the growing interdependence of the rural and urban economy. About half of the total municipal population in Juruena and Cotriguaçu (5,000 and 8,500, respectively in the 1991 census) reside in urban areas, where they are occupied in commercial and industrial (chiefly wood products) employment. Many of those classified as "landless" and candidates for lots in new settlements are actually underemployed workers residing in the urban areas who had initially came to the region as colonists, but were unable to succeed in agriculture. It is expected that colonists will increasingly be involved in dual occupations (termed "rurban"), engaged in both agrosilvopastoral activities on colonization lots, and urban occupations, which are often seasonal, due to market and access conditions affecting the timber industry. Strengthening urban enterprise founded on processing of agroforestry products and NTFP thus represents an important complement to technology diffusion, offering employment opportunities that can help to reduce the pressure on remaining biodiversity resources.

Local organization and the role of women

In all the municipalities in the project region, local producer organizations have been founded among colonists and timber enterprises, which have been increasingly involved through IPN's intervention in wide-ranging debate and pilot projects oriented toward sustainable resource use. Associations such as ADERJUR were later complemented by the establishment of Municipal Agriculture and Rural Development Councils, under the auspices of local government, which has taken an increasingly active role in channelling resources toward sustainable regional development. Experience in trial of agrosilvopastoral models through the efforts of these organizations has led to a perception on the part of participants in these efforts that these practices can provide a basis for sustainable rural livelihoods, if adequately supported with credit and enabling incentives.

Among the key community and governmental leaders involved in IPN's projects in NW Mato Grosso, several are women, and their role has been and will be crucial to building consciousness in all the municipalities involved in the proposed project. For example, Dona Luiza, who served as the first president of ADERJUR, remains a source of inspiration to mobilize Juruena's rural families in the search for sustainable livelihoods. Their efforts have been key to the adoption of alternative technologies.

Although it is rare that women hold title to property, or be considered the primary source of household income, as wives and mothers, they have been instrumental in directing resources toward activities that benefit family and community health and education. For example, the Health Pastoral of Juruena, a Church-based organization, is led by women who train their peers to offer families in remote settlements with basic health care assistance, using and herbal remedies planted in their own gardens. These activities are specifically targeted for support and technical assistance throughout the proposed GEF project, which will seek to identify promising NTFP that can be integrated within homegardens and "live pharmacies" initiated through PDF-B activities.

United Nations Development Programme
Government of Brazil

Project Number: BRA/00/G31/A/IG (GEF)
Title: Promoting biodiversity conservation and sustainable use in the frontier forests of northwestern Mato Grosso
Duration: 7 years
Executing Agency: NEX - National Execution
State Environmental Secretariat of Mato Grosso (FEMA)
Implementing Agency: NEX - National Execution
Instituto Pro-Natura (IPN)
Revision Type: Initial

Summary of GEF and Cost-Sharing Inputs in US$

INPUTS

GEF	
1G-GEF Full Project	**6,704,112**
1G-GEF PDFB	**279,950**
Total GEF:	**6,984,062**
Co-Financing	
State of Mato Grosso	**764,706**
Municipalities	**705,884**
ADEJUR	**335,294**
INCRA	**1,100,000**
IBAMA	**50,000**
CNPT	**55,000**
ONF/Peugeot	**3,450,000**
Bank Axial	**2,000,000**
Rohden Lignea S.A.	**588,235**
Total Co-financing	**9,049,119**
TOTAL	**16,033,181**

Brief Description: The long-term goal of this project is the consolidation in northwest Mato Grosso (an area comparable in size to Panama) of an integrated matrix of different land uses consisting of contiguous blocks of intact primary forest cover on private lands, corridors of secondary regeneration and more intensive agrosilvopastoral systems and permanent forest management. Accelerated development pressures currently threaten the globally significant biodiversity in this area mainly due to the absence of a coherent land-use planning framework (coordinated across municipalities) that can curtail unplanned settlement and development, and the existence of significant barriers to adoption of agroforestry and sustainable forest management systems. If current trends are allowed to continue unchecked, the default scenario is one of extreme habitat destruction, and the loss of native forests over the coming decade is expected to extend over 20,000 km^2. The project will demonstrate a widely replicable, integrated approach to the protection and sustainable use of biodiversity on private lands to mitigate this default scenario and secure global benefits through the conservation of native and endemic floral and faunal species in forested areas and soils. Project outputs will include a greater emphasis on biodiversity protection in ecological-economic zoning and the identification of high biodiversity areas for protection. There will also be strengthened municipal planning, development of supportive policies and instruments and monitoring through the incorporation of biodiversity conservation values. The project will help to remove barriers to the adoption of systems, practices and management techniques that integrate non-timber forest products and mitigate unsustainable pressures on biologically diverse habitats.

Approved and Signed by:	***Signature:***	***Date:***	***Name/Title:***
Government (ABC):			Elim S. Dutra – Diretor Geral da ABC
Executing Agent:			
UNDP:			Walter Franco – Resident Representative

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List of Acronyms

ADERJUR	Rural Development Association of Juruena (*Associação de Desenvolvimento Rural de Juruena*)
CGAI	Council for Integrated Environmental Management (*Conselho de Gestão Ambiental Integrada*)
CNPT	National Center for Sustained Development of Traditional Peoples (*Centro Nacional de Desenvolvimento Sustentado das Populações Tradicionais*)
CONAMA	National Environmental Council (*Conselho Nacional do Meio Ambiente*)
EEZ	Ecological-Economic Zoning
EMBRAPA	Brazilian Corporation for Agricultural and Livestock Research (*Empresa Brasileira de Pesquisa Agropecuária*)
EMPAER	State Corporation for Rural Technical Assistance and Extension (*Empresa Matogrossense de Assistência Técnica e Extensão Rural*)
FEMA	State Foundation for the Environment (*Fundação Estadual do Meio Ambiente do Mato Grosso*)
FIOCRUZ	Oswaldo Cruz Foundation for Public Health (*Fundação Oswaldo Cruz*)
FSC	Forest Stewardship Council
GIS	Geographic Information System
IBAMA	Brazilian Institute for the Environment and Renewable Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*)
IMAFLORA	Instituto for Forest Management and Agricultural Certification (*Instituto de Certificação do Manejo Florestal e Agricola*)
INCRA	National Institute for Colonization and Land Reform (*Instituto Nacional de Colonização e Reforma Agrária*)
INPA	National Institute for Amazon Research (*Instituto Nacional de Pesquisa Amazônica*)
INTERMAT	State Land Institute of Mato Grosso (*Instituto de Terras do Estado de Mato Grosso*)
IPN	Instituto Pró-Natura
MMA	Ministry of the Environment (*Ministério do Meio Ambiente*) – formerly titled Ministry of Environment, Legal Amazonia, and Water Resources
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration (USA)
NTFPs	Non-Timber Forest Products
ONF	National Forest Office (*Office National des Fôrets-France*)
PGAI	Program for Integrated Environmental Management of the Northwest Area (*Programa de Gestão Ambiental Integrada da Área Noroeste do Mato Grosso*)
PNMA	National Environmental Program (*Programa Nacional do Meio Ambiente*)
PPG-7	Pilot Program for the Conservation of the Brazilian Tropical Forests
PROCERA	Program of Credit to Agrarian Reform Beneficiaries (*Programa de Crédito e Reforma Agrária*)
PRODEAGRO	Program for Agro-Environmental Development (*Programa de Desenvolvimento Agro-Ambiental do Estado de Mato Grosso*)
PRONAF	National Program for Family Farming (*Programa Nacional de Agricultura Familiar*)
SEAIN/MPO	International Affairs Secretariat of the Ministry of Planning and Budget (*Secretaria de Assuntos Internacionais do Ministério de Planejamento e Orçamento*)
UFMT	Federal University of Mato Grosso (*Universidade Federal de Mato Grosso*)

A. PROJECT CONTEXT

1. DEVELOPMENT PROBLEM

1. Human populations have occupied the Amazon for millennia, initially through indigenous migrations and, since Conquest, by Europeans. Indigenous hunter-gatherers manipulated native species to facilitate access to prized foods and attract game, with little noticeable impact on biodiversity. In contrast, occupation of the area dramatically increased in the latter part of the current Century – principally from 1970 to the present – and has transformed nearly 700 thousand km^2 (15% of Brazil's original tropical rainforest) for agriculture and other purposes. During the last thirty years, with State-directed and spontaneous colonization, mining and infrastructure development, destructive occupation affected widening areas along corridors opened by road building. This expansion was driven by the prospect of extracting valuable resources and offered an escape valve to reduce population pressure in problematic regions (Northeast and Southern Brazil).

2. The Amazon basin contains about 56% of the world's broad-leaved tropical rainforests, with a total land area of about 8 million km^2. Most of the Amazon forest (67%) is located in Brazil. The project target area is found in the extreme northwest of Mato Grosso State, on the margin of the Juruena River, and is bounded to the north with the state of Amazonas and to the west with Rondônia. This area (see Maps 1 and 2, Annex VIII) includes the municipalities of Aripuanã, Castanheira, Cotriguaçu, Juína and Juruena. Its land area totals 108,624.5 km^2, or about 2% of the Brazilian Amazon. Here, tropical forest ecosystems are interlaced with *Cerrado* (savanna) woodlands in a complex and diverse mosaic. Rainforests (*florestas ombrófilas*) prevail in the northern part of the area while, to the south, transitional forests blend rainforest and *Cerrado* biomes.

3. Recent colonists often originated from areas ecologically distinct from that of their final destination. In NW Mato Grosso, as in neighboring Rondônia, most colonists were recruited directly from Southern Brazil, among families of European origin expelled from mechanized agriculture based on monocultures high-input grains. Attracted to sell their meager southern holdings by promises of cheap abundant land, they were encouraged to plant coffee by government authorities and private colonization companies who assured them markets would be found. Most colonists soon found themselves faced with costly and seasonally precarious transport, negligible storage and nonexistent credit or technical assistance. Many colonization efforts succumbed to the infertile tropical soils, torrential rains and unfamiliar pests. A few thrived after successfully adopting agroforestry systems composed of specialized perennial fruits and spices. But most were faced with gaining a foothold on their lots using slash-and-burn practices to produce rice, beans and cassava for local consumption. Due to low productivity, they were soon forced to advance further into the forest, and to convert cropland to pastures for cattle ranching. Many soon failed as farmers and moved to local towns and cities, where they swelled urban settlements which now account for over 60% of the total Amazon regional population. In the more recently settled NW area of Mato Grosso, most (57%) of the 1996 population of 66,146 still live on rural lots, where they continue slash-and-burn production activities.

4. Cattlemen typically acquire the land abandoned by colonists, rapidly converting land to pasture, burning forests from which economically valuable trees have been harvested, eliminating nearly all remaining biodiversity. Pasture productivity declines, accompanied by reduced stocking rates (from 1 head/ha at the beginning to 0.3 head/ha or less after 10 years). Within 15 years, pastures are degraded. The remaining forests are gradually encroached upon for timber extraction. This is a temporary activity, limited to fewer than 6-10 species. Timber typically is removed in several cycles, provoking successively increased damage to forest ecosystem function. Logging roads and tree felling are random, and vines are not cut, provoking severe loss in remaining vegetation and biodiversity. Extraction sites become much more vulnerable to forest fires due to logging roads, openings from treefall, and drought promoted by an overall regional warming tendency.

5. Producers export timber and other goods in raw or semi-processed form, generating little value-added or local income that could stimulate linked activities. Local food processing and manufacture is nonexistent or negligible; even the smallest frontier towns are supplied with food trucked-in from distant coastal regions. Timber extraction becomes migratory, establishing itself briefly in boomtowns that soon lose their impetus, fading to ghost towns when timber is exhausted. Employment in wood industry for former agriculturists becomes scarce, leading to further abandonment. This cycle of boom and bust, migration, failure and repeat migration, has become commonplace throughout the Amazon region, and represents the root cause of threats to biodiversity conservation.

6. Deforestation is the major proximate threat to biodiversity in Mato Grosso, reaching 23.4% (11.9 million ha) of the state's original forest area by 1996. With the highest rate of deforestation in Brazil, averaging 1.3% per year from 1989-96, Mato Grosso was responsible for 35% of all Amazon clearing as well as widespread and damaging forest fires. Nearly half of all fire points sighted with NOAA satellite imagery in the Brazilian Amazon during the 1990s were located in Mato Grosso.

7. This deforestation is largely a result of colonization and timber extraction, activities that are increasingly concentrated in the northwest part of the state – including the municipalities of Aripuanã, Castanheira, Cotriguaçu, Juína, and Juruena. Northwest Mato Grosso lies along one of the three concentrated swaths of deforestation that have been distinguished across the Amazon. Occupation there began in the 1970s with the construction of a main access road and consequent occupation by settlers, large and small, along the road, and the construction of feeder roads into the forest by private timber companies. About 5,632 km^2 (over 5.2% of the region's total area) had been deforested by 1994 (satellite imagery analysis), at a rate of approximately 350 km^2/yr. This rate has continued apace since that time.

8. Present land use patterns in northwest Mato Grosso are summarized in Table 1. Approximately 18,626 km^2 (17.1% of the total area) lies in indigenous or extractive reserves but only 5,520 km^2 (5.1% of the total area) is in two conservation units, one of which is superimposed on an indigenous reserve (Annex VIII, Map 3).

Table 1: Characterization of land use patterns in project area

Total Land Area	108,624.5 km^2
Of which,	
State or private land with intact forest cover	80%
Unprotected forest (57.8%)	
Four indigenous and one extractive reserve (17.1%)	
Two ecological reserves (Iquê and Rio Madeirinho) (5.1%)	
Private land under exploitation	20%
Forest extraction units of 25,000ha and over (16%)	
Pasture lots of 1,000 – 20,000 ha (3.5%)	
Agricultural settlement lots between 40 and 120 ha (0.5%)	

Source: Governo do Mato Grosso (1997); Fernandes (1992); Pro-Natura/ICI-Zeneca (1991)

9. *Slash and burn agriculture in new colonization areas.* As far as land under exploitation is concerned, approximately 4% of the land area is occupied by new settlers relocated in forest margin areas, faced with making a living in an area that is ecologically very distinct from the areas they came from. Once resources are depleted after slash and burn agropastoral occupation, colonists are compelled to continue opening frontier areas to new settlement, constituting a "second wave" of deforestation along the "Arc of Destruction". These primarily small-farmer colonists have little experience, know-how and guidance on technologies that can increase returns to labor, capital and land while at the same time stabilizing the forest

frontier – technologies that could serve as an alternative to their current slash and burn practices. Approximately 1.7% of the region's land will shortly be directed toward new settlements[1].

10. Implicit in the land use decisions of colonists in the project area is a marked undervaluation of biodiversity. There are two factors that motivate the current practice of land clearing and deforestation: (i) the absence of clearly demonstrable private benefits to leaving portions of their lands in a natural state compared to the demonstrated immediate benefits from conversion to cropland or pastures, and (ii) declining returns on their lands under prevalent agricultural and livestock management practices. Under prevailing circumstances, these small farmer colonists whose decision are affecting adversely forest cover and biodiversity see little benefit from maintaining intact forest cover on their lands, and would have to bear entirely the costs and risks associated with testing new alternatives. Not only are farmers living in the area unlikely to change their land use patterns in the face of this economic calculus, but also, new farmers moving in to the area cannot be influenced to adopt an alternative approach despite the best intentions of INCRA.

11. *Inappropriate timber extraction.* The remaining 16% of lands under exploitation are being subjected to inappropriate timber extraction. Selective logging continues to encroach in areas of intact forest leading to increased deforestation and biodiversity loss. Subsequent conversion of logged-out forests to pasture and cropland makes this loss permanent. Those engaged in timber extraction view this as a highly temporary activity and lack the technical wherewithal and experience to promote permanent forest management systems that address the goals of maximizing long-term returns to the exploitation of timber resources and that of biodiversity conservation. In the absence of demonstrated benefits from the long-term husbandry of their forest resources, timber operators opt for forest "mining".

12. *Forest fires and land degradation.* The slashing and burning of forests for agriculture often leads to forest fires in areas adjacent to timber extraction units. They result in significant loss of remaining forest products and biodiversity. Emissions of CO_2 to the atmosphere by forest burning range from 65 to 150 mt/ha. Deforestation over large areas leads to reduced stream flows, aggravated by the area's normal 4-6-month dry season. Erosion and consequent rapid loss of soil fertility is exacerbated by slash and burn practices, which interrupt the nutrient cycle.

13. In the case of both the small farmers and timber operators, the perceived risks associated with alternatives that could stabilize the forest frontier areas and a lack of experience, knowledge, and successful demonstrations of the same alternatives pose significant barriers to adoption. Being generally ill informed of prospects and risks associated with alternatives, they are unable to bear the risks inherent in developing new products and sustainable use systems. The distance to consuming centers increases this risk and militates against investment in any but the most rudimentary technologies. The lack of adoption in turn implies a continuation of the business-as-usual scenario with sustained deforestation and biodiversity loss at the hands of colonists.

14. Under the baseline situation deforestation and biodiversity loss is expected to continue largely unchecked in the project area. The loss of native forests over the coming decade is anticipated to extend over 20,000 km^2. Based on current land ownership patterns and proximity to roads and settlements, this will increase the area's exposure to human pressures. The baseline scenario for the project area is thus one of extreme habitat destruction brought on by:

i. the absence of a coherent and enforceable land use planning framework (coordinated across municipalities) that can curtail unplanned settlement and development in the project area by promoting a melded mosaic of land uses (including conservation and sustainable use) thus providing varied habitats for plants and wildlife,

[1] INTERMAT has approved 8 new settlements in northwest Mato Grosso on an area totaling over 182,600 hectares.

ii. lack of viable alternatives that can influence farmers' land-use decisions away from slash and burn agropastoral activities, and

iii. forest "mining" for commercial species that may begin reflecting elements of sustainable timber yields but is unlikely to include pre- and post-felling activities that go beyond commercial species to include species important for maintaining ecosystem health and conserving biodiversity.

2. LESSONS LEARNED FROM PRIOR EXPERIENCE – PROJECT "BASELINE"

15. With the expressed priority in federal and state level policy to conserve forests and biodiversity, the promotion of non-destructive alternatives and of measures and mechanisms that would conserve remaining biodiversity have received increasing attention on the part of public agencies. The entities officially responsible for developing and disseminating appropriate practices and enforcing environmental codes are actively seeking partnerships with non-governmental organizations and scientific institutions to furnish technical expertise regarding agrosilvopastoral systems and sustainable forest management that addresses sustainable logging, sustainable use of NTFPs and biodiversity conservation. There is a general awareness that practical instruments exist for sustainable land use management. It is important, however, that public officials be better trained in applying and enforcing such instruments to guarantee biodiversity protection. With these measures, and with the perception that alternatives exist for use of forest resources, local residents will begin to treat the forest as the foundation for sustainable livelihoods rather than as an obstacle to be overcome.

16. The state and municipal governments, local producer associations, NGOs and some private timber operators have begun activities that represent small yet significant steps towards improving the sustainable development dimension of activities in the project area. These are explained below insofar as they provide a baseline on which to build and integrate specific measures to ensure biodiversity conservation.

Ecological-economic zoning, conservation areas and regulatory framework

17. As part of needed actions to revert destructive trends, the government of the state of Mato Grosso, under FEMA's supervision and with financial support from the World Bank-assisted PRODEAGRO program, is carrying out a thorough EEZ at a macro level (1:250,000 scale) over the entire state, as a basis to direct future land uses. This macro zoning process is expected to be complete in 1999. However, the state-level EEZ cannot serve as an effective tool to regiment municipal-level land use, due to: (i) its overly superficial detail and scale, and (ii) a lack of economic incentives and enforcement capacities to promote adherence to the zones established at a local level.

18. The state government hence allocated $6.05 million in PPG-7 funds for a three-year program begun in 1998, to institute a pilot micro-level EEZ process in the project area of northwest Mato Grosso. The objective of this project is primarily to identify threatened resources (forests and watersheds) and map areas that are suitable for settlements, managed timber extraction and mining. It will also undertake relevant update of environmental legislation and the building of monitoring and control capacities to promote effective environmental management. One if its components will promote agroforestry and NTFP systems, with one demonstration in each municipality, and this is discussed below along with other baseline efforts directed to agrosilvopastoral systems. The PGAI program will largely serve to mitigate adverse local environmental impacts associated with development in the project area. It will also strengthen to some degree partnerships with civil society organizations, whose participation is crucial.

19. The regional ecological-economic zoning program being conducted by FEMA and municipal governments with input from all local/regional stakeholders, as part of the PGAI, is now in its second year

of implementation. IPN is accompanying this process closely, and in particular is working to guarantee stakeholder inputs to the process. The key lessons learned from PRODEAGRO are that it is extremely difficult to obtain useful information at a macro zoning level that can be applied toward regional land use planning, but it has provided a wealth of broad-scale information that can serve as the basis for more refined zoning and adaptive management.

20. However, the PGAI program will not place significant emphasis on protection of biodiversity. Rather, it is intended to guide productive activity and environmental enforcement. Only two conservation units exist in the area that, together with indigenous and extractive reserves, provides some protection toward remaining biodiversity (Annex VIII, Map 3). Yet, these protected areas do not lie in areas vulnerable to colonization. In order to ensure that the planning of land-use in the project area is not guided solely by the long-term productive potential of natural resources, an issue that is in national sustainable development interest, but also by biodiversity conservation concerns that benefit the global community, additional interventions are going to be needed.

Agrosilvopastoral systems and NTFPs

21. The dominant model of agropastoral systems on settlers' lands typically includes cultivation of a few annual crops with little emphasis on a more diversified crop production system that includes perennials, cover crops, trees, and natural hedges. Declining productivity of lands under cultivation will continue to spur encroachment on forested segments of farmers' lands rendering it increasingly difficult to meet the legal requirement that 50% of private land holdings be under forest cover. Local organizations of farmers and entrepreneurs in Juruena and surrounding municipalities have requested assistance to apply environmentally appropriate alternatives. In response, through multi-year trials at its Juruena technology center, IPN is developing and testing an agrosilvopastoral model adapted to local environmental conditions, farmers' capabilities and income requirements, as well as market variables. This model primarily includes a diversified system that includes annual crops, domesticated perennial fruit trees, fast-growing timber species, and cattle, but does not as yet include non-timber forest products (see Annex VII for more details). The PGAI program will allocate modest resources to promoting agroforestry in three of the five municipalities that compose the project area (Aripuanã, Cotriguaçu and Castanheira).

22. However, there are several barriers to the adoption of the alternative agrosilvopastoral model and under the baseline these barriers will continue to impede adoption of the alternative system that can enhance biodiversity values within productive landscapes and also allow larger areas to remain under forest cover. The high risks and initial investment associated with testing new technologies or systems acts as the primary deterrent making it important to pilot successful demonstrations of the integrated system. Demonstrations need to be undertaken in well-distributed sites established with farmer cooperation on their lands to promote access and visibility and amplify adoption. Furthermore, farmers and extension workers will need to be trained in adapting and applying these systems.

23. The agrosilvopastoral model tested by IPN on an experimental basis has not as yet included non-timber forest products. As PDF-B results have shown, NTFPs cannot on their own act as a deterrent to deforestation and biodiversity loss. But when integrated as one part of an agroecological system that is capable of generating multiple products, NTFPs can play an important role in enhancing the private benefits to farmers from standing forests and from integrating biodiversity enhancing measures within their agropastoral systems. This will cause farmers to internalize, to a greater extent, biodiversity values in their land use decisions thus acting an incentive to curb deforestation and biodiversity loss.

24. Although the baseline situation includes modest investments for agroforestry, the integration and sustainable utilization of NTFPs in this system remains to be addressed. NTFP-based activities in the project area were until recently limited to unsustainable extraction of palmito from *Euterpe precatoria,* a species that does not regenerate naturally once harvested. A small private palmito cannery currently

operates in Juruena. In 1997, the municipal government began to distribute palm seedlings of *açaí* (*Euterpe oleracaea*) – a multi-stemmed palm species found in the Amazon estuary, which has been successfully, managed (Pollak and others, 1995). Farmers' knowledge of NTFP harvesting is rudimentary. For example, *copaiba* resin is only obtained during timber harvest by collection from the stump rather than from bore holes in standing trees that are later plugged to ensure survival. Systematic development of NTFPs with partial support from the PDF-B has been limited to an initial characterization of available resources, evaluation of chemical characteristics of *copaíba* and *jatobá* resins, and test of Brazil nut extraction and marketing. IBAMA's Center for Traditional Peoples collaborated with IPN in market and viability studies for management and utilization of NTFPs in the project area through PDF-B sponsored activities. A trial of collection and marketing of Brazil nuts in the shell by local producers is planned under the baseline as a direct outcome of these PDF activities, under the enterprise assistance included within the PGAI.

25. Other resources that could become available for agroforestry investments include subsidized credit formerly available to new settlements under INCRA's PROCERA program. Early in 1999, PROCERA was eliminated and merged with a federal program to strengthen small farming by rural families in general (PRONAF). Some funds in this program are now earmarked toward investment in agro-environmental management in new settlements and host communities. Family farm credit furnishes resources partially through a sinking fund, available to provide for the immediate needs of the settler and his family during the period immediately after taking over their lot, and for investments such as improved cattle, seed and equipment. Some resources are also allocated for investments at the settlement level, directed toward providing for collective needs such as schools, health posts and installations for storage and processing. However the precise volume of this support is as yet undetermined, and due to the many new settlements in progress, is in short supply.[2] INCRA and IPN have entered into an agreement to jointly assist settlers in the project area to diagnose natural resource potentials and protect biodiversity, develop management plans, train settlement leaders and implement agroforestry and forest management demonstration units. These efforts will be strengthened and broadened during the project.

Sustainable forest management

26. Under current law, timber extraction in the Amazon is subject to a rigorous management plan, whose recently amended rules incorporate sustainable harvesting criteria (see footnote 2). However, despite efforts by IBAMA to strengthen its monitoring and control functions, most exploitation areas have been degraded and subject to follow-on conversion of forest to other land uses. No efforts have been made to protect NTFP or other biological resources during timber harvesting. Under pressure from government and markets, timber producers in the target area are now anxious to adopt sustained management practices and to add value through processing technology and a diversified product mix rather than continued migration. Incipient efforts are also underway to adopt renewable energy alternatives based on wood processing residues. The largest timber industry in the area (Rohden Lignea), with 25,000 ha. of forests under recent management has installed an energy generation plant using industrial residues, and initiated recovery of degraded forests and pastures through reforestation with fast-growing native species (*açaí* and *caixeta*). Rohden has expressed interest in expanding its sustainable forest management systems to obtain timber and NTFPs (*copaiba* resin, palm heart, etc.).

27. IPN has demonstrated experimental forest management treatments on 100 ha of the Rohden exploitation area. Rohden furnished the land, equipment, field labor and supplies; the PRODEAGRO program financed technical expertise in forest inventory and management. Demonstration practices

[2] The revamped credit program places funds for collective investment under the direct responsibility of the settlers, and will offer subsidized production credit initially, but will treat agrarian reform beneficiaries as any other farm family eligible for PRONAF support once this initial phase is terminated. Settlers are now required to undertake their own plans, and to contract technical assistance, with funds provided through the program.

included timber inventory (three size classes in 100 m^2 plots), vine-cutting, selective harvesting, low-impact access layout, directional felling, and enrichment planting. Under the baseline, Rohden will continue investing in the testing and application of these low-impact logging techniques. Comparative cost analysis by Barreto and others (1998) suggests that the costs involved in sustainable management practices are about 33% superior to those in conventional selective harvesting, while they result in a reduction of up to 50% in the management rotation cycle, thus reducing long-term costs as well as biodiversity loss associated with expansion in exploitation areas. While some of these practices thus appear technically and economically justifiable in the long-term, protection and recovery of remaining biodiversity are not in the firms' immediate financial interest unless such practices were to result in a price advantage for final products.

28. Concern over the contribution of international trade in rare tropical hardwoods to deforestation has led to preferential market treatment for sustainably managed sources certified through Forest Stewardship Council (FSC) accredited bodies. To date, Brazil has only one accredited forest management certifier (IMAFLORA) and one FSC-certified Amazon timber producer (Mil Madeireira in Itacoatiara). Interest in obtaining certification is growing among regional timber industries, but they lack knowledge of how to obtain certification, and access to alternative timber markets that would reinforce sustainable harvesting. It is a combination of regulatory demands, financial resources and market pressures that will eventually bring about a positive change in forest management technology. Indeed, the vast majority of tropical timber produced in Brazil (86% of Amazon wood supplies) is destined for national markets, as was recently documented (FOE/Imazon/Imaflora, 1999). There is growing concern in domestic wood consuming enterprises for sustainably managed timber sources. This trend is clearly represented by the adoption of FSC criteria as a basis for purchase contracts for furniture retail by the nation's leading company in this sector, Tok & Stok, in November 1998, followed by the formation in April 2000 of an Association of Certified Wood Buyers composed of nearly 50 companies and government agencies. A concerted effort is being made by a network of NGOs and concerned industry groups to support this trend at a global level.

29. Based on recent legislation requiring sustainable forest management, IBAMA has restricted the traditional exploitation of timber, and has cancelled the licences of the majority (87.5%) of existing management plans in Mato Grosso alone, in 1999. For operating timber companies to comply with these new restrictions, they will be required to adopt far more rigorous management plans. These requirements, though more rigorous than current practice, still do not measure up to FSC certification criteria.

30. With the expressed priority in federal and state level policy to conserve forests and biodiversity, the promotion of non-destructive alternatives and of measures and mechanisms that would conserve remaining biodiversity have received increasing attention on the part of public agencies. The entities officially responsible for developing and disseminating appropriate practices and enforcing environmental codes are actively seeking partnerships with non-governmental organizations and scientific institutions to furnish technical expertise regarding agrosilvopastoral systems and sustainable forest management that addresses sustainable logging, sustainable use of NTFPs and biodiversity conservation. There is a general awareness that practical instruments exist for sustainable land use management. It is important, however, that public officials be better trained in applying and enforcing such instruments to guarantee biodiversity protection. With these measures, and with the perception that alternatives exist for use of forest resources, local residents will begin to treat the forest as the foundation for sustainable livelihoods rather than as an obstacle to be overcome. Although there is skepticism that biodiversity can be conserved through promoting sustainable uses, policy makers recognize that the whole landscape can seldom be converted to protected areas, implying a need for a balance between the two. To achieve this balance a system of adaptive management that enables rapid learning through field-testing is critical, and therefore underlies the conceptual approach of this project.

3. PROJECT OBJECTIVES AND CONCEPTUAL APPROACH

Global environmental objective

31. The Amazon basin contains the world's largest contiguous surviving tropical rainforest. Brazilian legislation and institutional initiatives now offer a more coherent framework from which public agencies may guide development consonant with the nation's commitment to biodiversity protection and sustainable use. This project will demonstrate a widely replicable and integrated approach to ensure long-term adoption of practices that enhance biodiversity protection on private lands, promoting conservation of tropical forest values of global significance while also improving welfare and stability for local communities. It will encourage the incorporation of new agroforestry and forest management practices that in turn may promote a greater conservation of biodiversity, while at the same time reducing regional vulnerability to climate change. These objectives will be ensured by efforts to reduce use of fire, protect native vegetation and redirect extractive practices, thus avoiding degradation of soil fertility, and by encouraging reforestation with native species of significant agroecological and economic value.

Project objective

32. Based on the prevailing situation in the project area and on the analyses and results from PDF-B activities, as described above, the long-term goal of the project is to promote a matrix of land uses which, when integrated across the landscape, both conserves globally significant biodiversity through sustainable use and safeguards it through conservation units on private lands. This will be achieved through (i) introducing biodiversity conservation parameters into the prevalent land use planning and enforcement framework, (ii) helping to remove critical barriers to the adoption of alternatives to current agropastoral activities, and (ii) helping to remove barriers to adoption of alternatives to temporary forest management primarily for timber. The removal of barriers will in turn allow an integrated matrix of different land uses to emerge in the project area in the long-term, consisting of contiguous blocks of intact primary forest cover on private lands, corridors of secondary regeneration and more intensive agrosilvopastoral systems and permanent forest management. On the one hand there is skepticism about conserving biodiversity through promoting sustainable uses, on the other a recognition that the whole landscape can seldom be converted to protected areas, implying a need for a balance between the two. To achieve this balance a system of adaptive management that enables rapid learning through field-testing is critical, and therefore underlies the conceptual approach of this project.

33. The project will address barriers to adoption of such measures by colonists and native inhabitants.Several alternative land use practices – requiring interventions of differing timing and intensities – can help to restore degraded tropical forestlands and curtail the steady conversion of remaining native forests. These include natural regeneration, post-harvest enrichment, reforestation and agrosilvopastoral systems. Forest regeneration may aid significantly in broad ecosystem recovery. Secondary forests generate multiple products (wood, medicine, foodstuffs), and services such as soil fertility recovery, carbon sequestration and corridors for faunal migration. More intensive interventions require increasing management to cope with greater physical complexity and interactions with external forces such as market fluctuations. It is for this reason that land users – primarily colonists unfamiliar with the complexity of rainforest ecosystems – commonly adopt extensive practices requiring minimal human resources or financial capital. The project objective is therefore chiefly to demonstrate how people can work with nature, rather than against it, to meet social and environmental goals.

4. PROJECT STRATEGY

34. Given these long-term project objectives, and the equally long-term interventions necessary to achieve them, the project follows a phased-approach grounded in adaptive management. Establishing a strong institutional foundation that engages continuous cooperation among private sector stakeholders and public institutions will be important in ensuring this phased and adaptive management approach to the conservation of biodiversity through a public-private partnership toward management of land use on a regional scale The strengthening of the planning, management, and monitoring capacities of public and civil society organizations will enable them to fully assist private sector and community stakeholders in these activities after GEF support has terminated.

35. The alternative strategy will be implemented through three integrated objectives involving direct beneficiary participation, each insufficient alone to achieve the project purpose, but whose synergy can help to remove barriers to biodiversity conservation and sustainable use in the target area Project activities will be planned in two phases. In Phase I (three years), the project will focus efforts in the municipalities of Juruena and Cotriguaçu. In Phase II, the experience will be implemented in three adjoining municipalities (Aripuanã, Castanheira and Juína), beginning in the fourth year, after evaluation of Phase I results. During Phase I, officials and producers from the municipalities to be reached under Phase II will be invited to demonstration visits and training activities, and will take part in workshops to plan and organize activities in preparation for the second phase. Evaluation and refinement of techniques and delivery mechanisms will be accomplished not only as we move from Phase I to II, but also on an annual basis. Annex II highlights the main milestones expected over the seven years of the project through GEF and non-GEF financing. For the longer-term vision, the table also provides an indicative listing of activities to be continued after the seven-year period. Some GEF resources will be allocated to monitoring in Phase 3. Project interventions are summarized in the logframe matrix, and elaborated below.

Objective 1: By end of project, all five municipalities in the project region will have elaborated and disseminated zoning plans and incentive approaches to encourage a matrix of sustainable land uses. [GEF - US$ 2,136,944; Co-financing – US$ 1,970,590]

36. The baseline Program for Integrated Environmental Management (PGAI) will set the policy, incentive and regulatory framework within which the alternative course of action can become effective.

37. The project staff will work with municipal governments and local organizations to identify areas that are important to maintain ecological processes and that harbor threatened and vulnerable species. This process will lead toward the preparation of municipal ecological-economic zoning plans, providing technical assistance in survey, assessment and demarcation of critical areas for biodiversity conservation. It is envisioned that these plans will encourage the maintenance of contiguous corridors of forest reserves, sustainably managed forests and agroforestry systems within occupied areas. Furthermore, efforts would be made to achieve consensus on the need to demarcate additional areas for permanent conservation, whether in public or private lands. For this purpose, project activities will extend land use planning activities to involve neighboring properties and settlements, seeking avenues to maintain contiguous blocks of intact forest cover and reduce fragmentation.

38. To promote the effective implementation of local zoning plans, the project will furthermore train government officials and civil organizations in techniques for ongoing inventory, monitoring and field observation of land use change and biodiversity impacts. Toward this end, the project will empower municipal governments and an inter-municipal network of civil organizations in collection, interpretation and use of remote sensing data and field observations to monitor local land use change. This will involve making available GIS facilities and related technical training to an inter-municipal network of civil organizations, working together to update maps and to devise an early warning communication system that can effectively mobilize local governments and other authorities in cases of irregularities.

39. The biodiversity inventory element will also identify areas with significant occurrence of non-timber forest species. These could constitute new resources with a potential to increase the economic value of standing forests, expanding on initial assessments undertaken in Juruena by the PDF-B to other municipalities in the project area. Such resource appraisal would also benefit from exposure to traditional knowledge of regional indigenous and extractivist groups who regularly use these resources in a sustainable way.

40. Disseminating and achieving consensus toward approval of local zoning plans would be the first step toward implementation. But equally important will be the application of incentives to encourage individuals on both large and small holdings to conform to land use plans and adopt permanent conservation easements and other tools to enable private land owners to contribute to biodiversity conservation in their own interest. Application and adoption of this approach will depend on a combination of compatible public policy incentives and work to convince landowners that alternatives exist to predatory land use. The project will explore several policy options drawing from related experience in other parts of Brazil and the developing world.[3] As part of technical assistance, the project will undertake policy assessments, suggest technical options and furnish legal advice to landowners and government authorities interested in setting land aside as permanent reserves and securing appropriate fiscal incentives. The project will also train local schoolteachers and provide didactic materials for environmental education purposes, recognizing that a change in land use behavior is a long-term proposition which must begin with expanding awareness from an early age.

Objective 2: Pilot sites demonstrating biodiversity-enhancing and NTFP-enriched agrosilvopastoral systems are established and disseminated with active involvement of small farmer colonists. [GEF - US$ 2,357,084; Co-financing – US$ 4,490,294]

41. The project will introduce, disseminate and encourage adoption of agroforestry and silvopastoral practices by colonists in the area. Agrosilvopastoral practices enable maintenance and recovery of biological diversity, as has been well proven and documented. For example, research conducted in other tropical habitats by the Smithsonian Institution's Migratory Bird Center found that inter-planted perennial species such as coffee and cocoa under native forests allow coexistence of up to 50% of those bird species found in the primary forest. Similar effects have been identified in shaded cocoa under native Atlantic forests in southern Bahia, but are as yet undocumented in the Brazilian Amazon. The adoption of these systems in the project area is expected to not only enhance biodiversity values within productive areas on farmer lots, but also reduce pressures on natural forests by making settlements more stable and productive. These measures coupled with land use planning frameworks that encourage native forests on adjoining lots to be located so as to maintain contiguous blocks of native forests can reduce habitat fragmentation and biodiversity loss.

42. While biodiversity-enhancing agrosilvopastoral systems can generate multiple benefits at the farm-level and therefore reduce the incentive to deforest, there are several factors that militate against their adoption by colonist farmers in the project area. These systems require more intensive management, and colonists have little experience and know-how in applying them. Moreover, the initial investment costs associated with an uncertain outcome serve as a disincentive for investment. The project will, therefore, address these barriers through on-farm demonstrations of such practices with associated technical training.

[3] Under existing federal law, private nature reserves (RPPN) have become attractive to large landowners as a means to reduce property taxes, but small and medium landowners are increasingly adopting this option as well. Another option is the "Ecological Value-Added Tax" now under consideration by the Mato Grosso state legislature (already in place in several southeastern Brazilian states), that will allocate funds to local governments constituting 7% of state value-added taxes, based on the proportion of municipal area that has been set aside for permanent protection.

43. Demonstration activities will be initiated during the first three years of the project in the municipalities of Juruena and Cotriguaçu. In Juruena, agrosilvopastoral demonstrations will be established in conjunction with ADERJUR's programs of crop diversification and value-added production. In Cotriguaçu, demonstrations will initially concentrate on lands surrounding a 10,000 ha property, within which a 3,000 ha "carbon sink" is being established on degraded pasture by Pro-Natura in partnership with ONF (France) with support from Peugeot. During the final four years, these activities will be upscaled to properties in all five municipalities in the area. In each case, model systems developed through IPN's multi-year research and trials will be initially adapted to on-farm conditions with a selected group of up to 10 farmers whose experience will serve as nuclei for diffusion to their neighbors along corridors delineated by settlement "lines" (access roads). On-farm demonstrations will also be accomplished within new INCRA settlement areas. The results and experiences of these demonstration plots will be closely monitored and documented by the project team. For more details on the IPN model see Annex VI.

44. To increase the value of intact forest on colonist tracts, the project will encourage sustained utilization of native populations and gradual incorporation of selected NTFP species into agrosilvopastoral systems. Based on studies conducted through the PDF B, several species have been identified whose products are of interest to the food, cosmetics and agro-chemical industries (see Annex VII). The prospects for attaining this potential will depend on a combination of screening and technological assessment of applications together with local resource management to protect and find lucrative uses for in situ resources that will reinforce their protection. However, enough is known of their economic potential to begin their introduction as components of a diversified agrosilvopastoral system, and building colonists' capacity to engage themselves in management and utilization of native species for small-scale enterprise such as Brazil nut oil expression, through local producer associations.

45. Non-timber product integration within mixed smallholder agrosilvopastoral systems will be achieved through a gradual approach. Extensive management systems that employ low-impact gathering and processing of tropical forest products in remaining forest areas within settlements will be encouraged, beginning with a market trial of Brazil nut products. These activities will be initiated on a pilot settlement ("Vale do Amanhecer") in Juruena, with an inventory of timber and non-timber forest products on a 7,000 hectare common area under permanent forest reserve. This will be combined with training of settlers in selection and harvest of seed-bearing mother trees, that will furnish seedlings for in-planting of desirable species for timber and non-timber products within agrosilvopastoral systems. The project will also develop initiatives to organize producers and identify potential buyers for these NTFP. The project will seek to add value to these products, through marketing strategies (e.g., eco-labelling).

46. Demonstration activities will be complemented by the establishment of an Agrosilvopastoral Training Center in Juruena within one of the region's new INCRA settlements, which will offer regular training sessions and internships to local youth who will participate in technology demonstration and diffusion. At the training center and through a regular program of visits to demonstration plots and interchange with other communities in the region, producers will be exposed to alternatives, and learn to adapt their land use practices in accordance with locally diverse environmental conditions and management capacities.

47. To identify additional incentives to motivate sustained use of biodiversity by landowners, the project will work closely with municipal governments in the region, to consider legislation and budget allocations that offer incentives toward maintaining forested areas and recuperation of degraded lands. These include, for example, technical assistance, access to municipal equipment, and provision of tree seedlings. Official credit sources would also be approached to grant priority in access to credit by firms or producers whose projects have been prepared with an emphasis on agroecological sustainability and biodiversity protection. Such an approach would be consistent with the federal "Green Protocol", signed in 1995 by all official development banks at the instigation of the President, providing for public credit

incentives to sustainable production. This has not been applied to date as a mechanism to promote biodiversity conservation in natural forest regions.

48. The agroforestry demonstration activities will be closely monitored and will be subject to periodic economic, biodiversity and social assessments. IPN and the Federal University of Mato Grosso (UFMT) have signed an umbrella agreement that will permit professors and graduate students of the University to conduct research associated with ongoing project activities in NW Mato Grosso. The university will provide research support services, facilities and equipment in exchange for access to IPN field facilities, transport and experimental areas. Monitoring components are expected to include: (i) independent evaluation and monitoring of productivity, biodiversity benefits and carbon sequestration in the agrosilvopastoral models established at IPN's Juruena research center, carbon sink properties and on farmers' fields; (ii) analysis of successional processes and diversity of flora and fauna as degraded land is recovered through trials of natural and enrichment-based regeneration on demonstration farms; (iii) assessment of technical viability of NTFP management and processing systems; and (iv) development of fitomedicinal and food products. It is anticipated that these analyses will be reviewed in their design phase as well as during execution by an independent scientific panel from EMBRAPA regional centers, with advice from an international expert group under subcontract. (Evaluation and monitoring will be accomplished under similar institutional arrangements for Objectives 2 and 3.)

Objective 3: Pilot sites demonstrating sustainable forest management are established and disseminated in the project area with active participation of timber operators.
[GEF - US$ 2,210,084; Co-Financing – US$ 2,588,235]

49. The project will work with timber operators in the project area to encourage permanent forest management using sustainable logging practices to improve the sustainability of the forest industry and to restrain predatory expansion so as to avert the present trend of degradation and clearing for agropastoral settlement. These low-impact practices including reduced road building, pre-harvest commercial inventories and site planning, vine cutting, regeneration and enrichment with economically desirable species, will be financed through non-GEF resources.

50. The sustainable logging segment of the project will operate through demonstration units in timber companies' forest properties. In the initial three years of the project, two demonstrations (averaging 100 hectares each) will be established in Juruena and Cotriguaçu. In addition, the project will work closely with Rohden Lignea (Juruena) to plan a significant expansion in its forest management enterprise under certified management practices. For the demonstration site in Cotriguaçu, the project will result in detailed land capability assessment and resource inventories for low-impact management of timber in intact forest surrounding the ONF/Peugeot carbon sink. At least 5,000 ha of this property will remain under permanent conservation. By the fourth year of the project, additional sustainable logging demonstration units will have been established in the three remaining municipalities of the region.

51. The biodiversity overlay on the sustainable logging segment of the project will include a combination of measures: an initial inventory of non-commercialized species, careful marking to avoid disturbance to seed-bearing trees, including areas of conservation significance as set-asides in forest management plans, and integration of NTFPs identified during the PDF-B in the enrichment and regeneration phase (including technical assistance with planting, protection and eventual sustainable harvesting).

52. Because these activities have an uncertain outcome in terms of benefits to timber operators, there is little motivation to test these techniques or invest in the additional skills required to apply them. Timber operators in the project area have little knowledge or access to differentiated markets that can provide the necessary incentive to adopt biodiversity-friendly extraction practices. GEF resources will, therefore, play a catalytic role by financing demonstrations on timber operators' properties, providing associated technical

assistance, and increasing producers' knowledge and facilitating access to growing markets for certified tropical hardwoods and to accredited certification organizations.

53. In addition to demonstration sites, the project will work closely with municipal timber enterprises and their representative associations to increase awareness of biodiversity values and investment in sustained management practices that ensure their maintenance. The principal factor that will motivate the wood industry in this direction is that of improving access to differentiated markets that can cover at least a part of the increased investment costs associated with these practices. To raise awareness, the project will organize seminars and courses for employees and managers on themes such as tropical timber certification, sustained management principles and techniques, directional felling methods (for chainsaw operators), and inventory and exploitation planning for minimum impact to biodiversity. Field visits to demonstration sites will also be organized.

54. Sustainable forest management demonstrations will be closely monitored and will be subject to periodic economic, biodiversity and social assessments. To discern the effectiveness of current low-impact techniques in conserving biodiversity values, the project will monitor the impact of different extraction systems on the trial lot in Juruena, and also demarcate additional plots for long-term monitoring. These will be oriented toward assessing the successional processes underway after timber harvesting in biodiversity sensitive models, controlling on traditional and low-impact practices, and their relative effects on floral and faunal species diversity that emerges on disturbed sites. The project will also explore means for post-project monitoring of these plots by faculty at UFMT, under agreement with demonstration plot owners.

55. For all outputs, project activities will be planned in two phases. In Phase I (three years), the project will focus efforts in the municipalities of Juruena and Cotriguaçu. In Phase II, the experience will then be spread and implemented in three adjoining municipalities (Aripuanã, Castanheira and Juína), beginning in the fourth year, after evaluation of Phase I results. During Phase I, officials and producers from the municipalities to be reached under Phase II will be invited to demonstration visits and training activities, and will take part in workshops to plan and organize activities in preparation for the second phase. Evaluation and refinement of techniques and delivery mechanisms will be accomplished on an annual basis.

5. EXPECTED END-OF-PROJECT SITUATION AND BENEFICIARIES

56. The following conservation and development outcomes are expected from the project. All five municipalities in the project area of northwest Mato Grosso will possess ecological-economic zoning maps and land use plans, officially adopted by local legislative bodies. Additional public conservation units totaling at least 1,000 km^2 will have been identified and delineated, and their enabling statutes presented to the state or municipal legislature. Permanent conservation areas totaling an additional 4,200 km^2 surrounding managed forest tracts and in contiguous corridors between colonist lots will have been identified and formalized in deeds of title and through agreements for permanent conservation easements, to be monitored by local civil organizations and municipal governments. Agrosilvopastoral and forest management demonstration trials will have been conducted in each municipality, and through training, technical assistance, and material inputs such as native tree seedlings, a majority of local landowners will have begun to adopt land use options and management practices for sustainable use of regional biodiversity resources. Regulatory instruments and investment incentives will reinforce their commitment. Producer associations and local civil organizations will have capacity to monitor and provide early warning on incursions against conservation areas and activities damaging to forests and biodiversity. Knowledge of biodiversity benefits from sustainable agrosilvopastoral and forest management systems will have been enhanced through tangible evidence and credible research.

57. To achieve the project's overall purpose to protect and conserve the forests and biodiversity of Northwest Mato Grosso (Brazil), by the end of the project, all five municipalities in the project region will

have advanced toward adopting and implementing zoning and environmental controls encouraging a matrix of sustainable land uses in occupied areas of the region. This matrix will be composed of agrosilvopastoral systems, biodiversity corridors, sustained forest management units, carbon sinks, conservation units and both indigenous and extractive reserves. Such a mix of land uses will be achieved by encouraging community-based conservation and sustained use of natural resources through establishment and diffusion of model agrosilvopastoral systems, sustained forest management practices, environmental monitoring and regulatory instruments.

58. The primary vehicle by which sustainability of alternative agroforestry and sustainable forest management approaches initiated by the project will be ensured is by involving and empowering the primary actors whose decisions have a direct bearing on biodiversity, namely, farmers, colonists, and local timber operators. The project allows for the active involvement of municipal and state government agencies responsible for sound environmental management and biodiversity conservation in the State, and will therefore greatly strengthen relevant in-country human resource and institutional capacity. The pivotal role played by the main NGO active in this area, IPN, will also contribute to long-term continuity of efforts initiated under this project. Risks associated with achieving project outputs and activities are presented in the Logical Framework matrix.

59. The project aims to work at different levels to influence decision-making by the principal users of natural resources and their representative associations in the project area:

- Local producer associations, to work with settlers in colonization lots and new settlements, to address barriers to establishment of permanent agroforestry and silvopastoral systems in pastures, crop fields, homegardens and orchards of native species.
- Timber enterprises and their associations, to demonstrate and assist in application and certification of improved permanent forest management practices that include protection of remaining biodiversity, management of NTFPs, and the reforestation and enrichment of harvested stands with promising native non-timber species.
- Local municipal authorities, to collaborate in introducing biodiversity conservation parameters in planning and devising appropriate instruments to regiment the use of land and natural resources of each municipality.
- State and federal institutions (FEMA, IBAMA, INCRA, MMA), to collaborate on a set of resource management alternatives, including incentive structures for benefit-sharing and regulatory instruments to improve policy decisions and enable dissemination of alternatives to similar areas of the Amazon.

60. Direct project beneficiaries include local governments, agricultural and forestry enterprises and producer associations in the project region. GEF resources are not destined toward direct investment in production, but rather to provide a framework for demonstration, capacity-building, broad dissemination and replication of biodiversity "friendly" technologies. Project activities go beyond the proposed demonstration sites to involve stakeholders and firms throughout the region, using a variety of training, information, regulatory and incentive instruments. Official entities responsible for conservation and management of forest and biodiversity resources in Brazil and in Mato Grosso in particular (IBAMA and FEMA), as well as those charged with the implementation of new colonization projects (INCRA) will thus have access to a package of alternative strategies to improve resource management in the Amazon, proven sufficiently to guarantee their effectiveness and subsequent diffusion in other areas facing similar problems. Last but not least, the global community will also stand to benefit from measures that promote the conservation of biodiversity and associated options and intrinsic values.

61. The project will be implemented directly with stakeholders residing in the project area, through local organizations and municipal governments, based on a philosophy of conservation and sustainable use of

biodiversity through community participation. All pilot demonstration activities will take place on farmers' and timber operators' lands with their participation. This strategy, by involving key private sector stakeholders directly in testing and adapting production alternatives, is central to a public-private partnership that will guarantee long-term effectiveness in achieving project objectives.

62. Thus far, participation of the local private sector and public elected officials in preparation of the project strategy has been intense and continuous. IPN, the executor of the PDF-B, has been working in the project area since 1991 and has been instrumental in the organization of Juruena's local producers' association, ADERJUR. The close working relationship that IPN has established with stakeholders through PDF-B financed activities and previous work, is a precursor to continuation of this partnership.

63. Involvement in the project of the remaining municipalities in the northwest area of Mato Grosso has been initiated through consultations with local officials and landowners. These municipalities (Aripuanã, Castanheira, Cotriguaçu and Juína) together with Juruena have agreed to participate actively in the training and demonstration activities proposed, formally committing in-kind resources to the task, and have already adhered and begun to implement the regional environmental management project, PGAI.

64. Finally, the project will be executed in coordination with state and federal authorities and agencies, particularly FEMA, IBAMA, INCRA, MMA and SEAIN that have participated in project formulation and planning missions, and will be involved in continuously adjusting targets as the project is implemented, in line with the adaptive management approach being adopted by the project.

65. As an initial priority, all actions carried out by public authorities over the three years preceding project implementation will be assessed, serving as a basis for discussion with stakeholders in Juruena and Cotriguaçu in a workshop coordinated by the project executors. These meetings will be carried out separately according to stakeholder group: farmers and settlers, timber operators, each with involvement of municipal governments. Public agencies will be engaged in these meetings, to solicit the identification of responsible officials so as to operationalize partnerships from the outset. The accumulated experience of IPN indicates that this form of partnership with public agencies ensures their greater participation in project execution. The results of these meetings will offer a renewed vision of the lessons learned from previously implemented activities, and will offer an essential indicator to guide the adoption of complementary actions in the proposed project.

66. Action plans based on the results of the initial meetings will then be defined with the responsible officials of each agency, for a two-year planning horizon. Additional meetings will be organized on a semestral basis to discuss progress and barriers encountered in the achievement of initially defined objectives. These meetings will serve as an instrument to measure project progress and suggest avenues for redirection should this prove necessary.

67. As partners of government initiatives, NGOs play an increasingly important role in isolated areas to promote improvement in environmental protection. IPN will identify new partners in the course of project implementation. Together with existing NGOs such as ADERJUR, the Association of Small Farmers of the Vale do Amanhecer and the 13 de Maio settlement in Juruena, and of the Farmers Association of Gleba in Cotriguaçú, their members will be trained, and will act as multipliers and co-managers of the demonstration units that will be created. Technicians who serve the municipal governments will also participate in courses and educational activities throughout the project.

68. With regard to the timber industry, the strategy for stakeholder engagement will also operate through representative local organizations. A recent survey by IBAMA (1999) identified a series of irregularities in management plans of regional enterprises. Based on this diagnosis and meetings with timber enterprise representatives, lines of action based on training and demonstration will be proposed, leading to the definition of management plan improvements suitable for each enterprise type.

6. REGULATORY FRAMEWORK

69. The Brazilian Constitution of 1988 defines the Amazon forest as a "national patrimony" and thus is subject to public control to avert further loss. The Pilot Program for the Conservation of the Brazilian Tropical Forests (PPG-7) and the National Environmental Program (PNMA) are both responses to global concern over Amazonian burning. The Ministry of the Environment (MMA) coordinates both programs, providing opportunities for state and local municipal governments and NGOs to become partners in the execution of projects aimed at environmental management, conservation and sustainable use. Through these efforts, greater attention has gone to monitoring and enforcement of cutting and burning, and the area and number of protected areas has grown. The Constitution called for municipal land use control subject to a Master Plan (*Plano Diretor*), and a 1997 ruling of the National Environmental Council (CONAMA) allows environmental review and licensing by municipal governments. The Government has also pursued Ecological-Economic Zoning (EEZ) to discipline private land use consistent with resource suitability. These instruments offer policy tools to strengthen local environmental protection and management capacity.

70. The Brazilian Institute for Environment and Renewable Natural Resources (IBAMA), subordinated to the MMA, is broadly responsible for regulating overall forest and renewable resource utilization, in coordination with state environmental agencies (in Mato Grosso, the State Environment Foundation (FEMA) is the responsible agency). The National Center for Sustained Development of Traditional Peoples (CNPT) within IBAMA promotes the management and utilization of non-timber forest products (NTFPs), through projects that principally support indigenous groups and inhabitants of extractive reserves. Agricultural extension services are the responsibility of state agencies, while agricultural and forestry research is coordinated by the Brazilian Corporation for Agricultural and Livestock Research (EMBRAPA) in cooperation with allied state research institutions (EMPAER) and universities. IBAMA and state extension services are the entities that have the greatest local presence in the Amazon, while EMBRAPA's attention is focused on specific crop and livestock technology development for commercial enterprise, through its centers for agrosilvopastoral research. Municipal governments possess limited technically trained staff and financial capacity to develop and implement programs of natural area protection, environmental management and promotion of appropriate land uses. Municipal Environmental Councils have been established in several Amazon municipalities to review the environmental impacts of development proposals. This has not yet occurred in the target area, where representative Municipal Councils address environmental matters with the technical assistance of EMPAER extensionists and local NGOs.

71. The Forest Statute (enacted in 1965) permits timber extraction on uncleared private and public lands subject to a "management plan"; once approved, property taxes are reduced, thus stimulating expanded timber enterprise on private lands. Due to predatory logging, such areas become increasingly vulnerable to occupation and fires. With recent uncontrolled Amazon burning, the Federal Government decreed far more rigorous criteria for forest management plans in late September 1998.[4] The Forest Statute also stipulates in Article 44 that at least 50% of original forests be preserved on private lands in the Amazon.[5] However, although financial incentives for pasture establishment in the Amazon were eliminated

[4] Initially, management plans defined little more than a list of the species found on the property and the volume of each that would be removed over a given period. Government agencies made efforts to monitor and enforce these plans. However, continued deforestation, widespread damage due to burning, the recent influx of Asian timber corporations and threat of extinction of mahogany led the government in 1996 to annul previously approved plans pending review, while new management plans for mahogany extraction were suspended. On 29 Sept 1998, management provisions were amended to institute more rigorous criteria for sustained management of natural forests, promoting multiple use (including NTFPs, biodiversity and environmental protection), but exempting sites with approved management plans from environmental impact assessment.

[5] Revisions to the Forest Code are under discussion, which may affect the proportion of private lands permitted to be

in 1988, reducing one element of deforestation pressure, the resurgence of an agrarian reform movement brought government response, with an ample program to distribute public and private holdings in the area to landless families. The National Institute for Colonization and Agrarian Reform (INCRA) is responsible for the majority of new settlement and has given growing attention to the environmental limitations associated with colonization efforts in the Amazon.[6] It has hence adopted a sustainable settlement program that would promote planting of appropriate crops and other land uses, and ensure colonists adequate access to markets. This as yet insufficiently tested approach offers an opportunity to enhance biodiversity protection and sustainable use within existing and future agrarian settlements. INCRA is an active partner in the project, having committed resources and personnel to effectively integrate its sustainable settlement approach in the project area.

72. Non-governmental organizations (NGO) play an increasingly vital role in isolated areas as partners of government institutions, to promote improvement in environmental protection. Instituto Pró-Natura (IPN), an international environmental NGO founded in Brazil in 1986, has promoted integrated protection and sustainable use of Amazon forest resources in NW Mato Grosso since 1991, selecting the municipality of Juruena as a demonstration site for a 20-year program. With support from a range of sponsors, IPN established an experimental agroforestry and forest management station of 100 ha in Juruena with a resident agroforestry extension officer on site backstopped by national and international specialists through agreements with universities, research centers, state and local government agencies and other NGOs. Through close working relationships with local government, entrepreneurs and producers, IPN assisted in the creation and then channeled support to Juruena's Rural Development Association (ADERJUR) and promoted NTFPs industries and agrosilvopastoral systems. IPN also demonstrated practical sustained forest management techniques in partnership with Rohden Lignea S.A., with support from the World Bank-financed PRODEAGRO program.

7. NATIONAL RESOURCES COMMITTED TO THE PROJECT

73. Within the state of Mato Grosso, FEMA is responsible for state environmental policy implementation. FEMA is responsible for administering statewide EEZ undertaken under PRODEAGRO, and pilot environmental management activities in the northwest area through PGAI. The GEF project represents a logical extension of both PRODEAGRO and the PGAI, providing a regional biodiversity overlay to these important baseline efforts. FEMA will coordinate the inputs of other state and federal agencies to the GEF project, through the existing PGAI steering mechanism, which will guide the operational aspects of the project to be carried out in the project region.

74. Other state agencies are expected to be closely involved with the implementation of the proposed project. The state Secretariat of Agriculture and Land Tenure Affairs in collaboration with the Association of Forestry Engineers has launched a Program for Forest Development (Prodeflora) in the state, which will allocate resources to private landowners who commit themselves to recuperate degraded areas and to manage forests for sustainable timber production. At the same time, the state Secretariat for Industry, Commerce, Mining and Energy has created a parallel program (Promadeira) that will provide tax incentives to wood products industries that obtain raw materials from sustainable supplies. These two innovative programs offer important stimulus to motivate a change in land use and forest management in the project

deforested in the Legal Amazon.

[6] Studies by INPE and IBAMA and regional NGOs found that nearly 50% of recent Amazon burning was detected in units under 50 ha in 1995, and 41% in 1996, although these data do not reflect the size of a property but rather the area burned. These data brought Congress to question increasing colonization in the region, since 88% of new settlement areas are targeted for the Amazon. Congress then considered imposing a moratorium on new Amazon settlement, but eight such projects have already been approved for the project region.

region. Representatives of the two programs will serve on the project Steering Committee, to coordinate their actions in the region.

75. At the federal level, IBAMA has taken a stronger position in both monitoring forest management plans and protecting threatened biodiversity resources. Over 75% of timber harvest plans were revoked in the state of Mato Grosso alone in 1999. IBAMA now provides direct Internet access to satellite images showing newly deforested areas in Amazon municipalities, serving as a basis for civil society action. The recently approved environmental crimes regulations provide for fines of up to R$50 million, serving as a far more effective disincentive to illegal deforestation and burning than the previous symbolic fines. Although the agency's presence in the northwest region of Mato Grosso as in most of the Amazon remains diffuse, its monitoring and control actions have been focused through the PGAI in cooperation with FEMA. IBAMA has made a commitment to collaborate with the proposed project, allocating time and resources of its existing personnel and environmental protection activities in the project region.

76. INCRA has also committed itself to provide resources toward the planning and management of sustainable land reform settlements in the project region, beginning with the Vale de Amanhecer project in Juruena. INCRA funds will be used by land reform beneficiary associations to directly contract services of IPN and other service providers to plan and provide training and technical assistance for seed collection, installation of nurseries, establishment of agroforestry systems and sustainable forest management practices. The latter are to be executed on common forestlands managed in condominium by settlers.

B. RATIONALE FOR UNDP-GEF SUPPORT

77. The project falls within the second broad thematic area of UNDP Country Cooperation Framework (CCF) for Brazil: Modernization and Environmentally Sustainable Development. The CCF commits UNDP to continue to work closely with the Government in its efforts to promote the sustainable use of Brazil's natural resources, while at the same time protecting the environment. Implementation of the project will produce lessons and experience for replication in this and other programs and regions of Brazil where UNDP is involved, thus enhancing the potential for replicating and leveraging results of the project. At the same time, the lessons and experience from the programs mentioned above will be made available to the Mato Grosso project. The project is to be executed within the framework of the Global Environment Facility (GEF) and respective international environmental conventions, particularly the Convention on Biological Diversity (CBD). It meets the objectives and principles articulated in the CBD in several ways. The project's principal activities would develop a framework for sustainable use of biodiversity components in agrosilvopastoral systems and sustainably managed forests (Article 10). By integrating conservation objectives into ecological-economic zoning and land use plans at a local and regional level, the project would fulfil Article 6 of the CBD (General Measures for Conservation and Sustainable Use). By encouraging the establishment of conservation areas on private lands, Article 8, In Situ Conservation, would be fulfilled. The status of components of biodiversity would be monitored by local civil society and municipal governments (Article 7, Identification and Monitoring); whose management capacity would be strengthened by providing training and technical assistance (Article 12); imparting conservation awareness (Article 13); and facilitating information exchange with other sustainable use experiences in the Amazon region (Article 17).

78. The project's adaptive management approach will be cost-effective, since it will spread responsibilities for addressing conservation needs amongst a range of actors, including state and municipal governments, federal agencies, local producer organizations and private enterprise. In addition, the participatory approach will engender greater stakeholder "ownership" of conservation efforts, improving the chances that stable conservation outcomes will be secured. Relative to the traditional "command and control" model, this paradigm is likely to prove highly cost-effective by reducing the long-run costs of

surveillance and policing functions. Project financing is modest relative to the potential benefits that will accrue from implementation.

79. FEMA as the Mato Grosso state agency responsible for environmental protection and control of public and private sector activities is empowered to serve as Executing Agency for the proposed project. Over the past decade, FEMA has strengthened its capacity in this field through successive initiatives (Prodeagro, PPG-7), which have involved staff training and institutional strengthening to assume former IBAMA responsibilities in environmental licensing and monitoring. Its experience in implementation of the PGAI provides essential lessons learned that will minimize project risk. FEMA is thus well suited and capable to perform its responsibilities in the proposed project.

80. IPN has operated a research and extension program based in the project region for nearly 10 years. The organization is also active in other biomes of Brazil and other tropical regions on three continents, where it has demonstrated ability to mobilize expertise from national universities and research institutions toward sustainable rural development. Its local insertion and global perspective make IPN uniquely competent to execute the proposed project, as the only national/international NGO with long-term activities and a commitment to socio-environmental sustainability in the project region. Based on IPN's long-term involvement in a participatory stakeholder extension program for agroforestry systems and sustainable forestry adoption in Juruena, the proposed project represents an upscaling of this participatory development process to Northwest Mato Grosso as a whole. Most regionally based organizations lack the scientific, organizational and technical capacity to manage a project of this complexity on their own. However, all local municipal governments and stakeholder organizations were consulted in the process of project development, and will be engaged as partners in its execution. Their commitment is attested by official letters provided to the Ministry of Planning on behalf of the project, and the recent creation of a Regional Consortium for Research and Sustainable Development among pertinent state, municipal and service organizations active in the project region.

C. PROJECT OBJECTIVES, RESULTS, ACTIVITIES, INDICATORS AND RISKS

OBJECTIVES, RESULTS AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	RISKS
OBJECTIVE 1: By end of project, all five municipalities in the project region will have elaborated and disseminated zoning plans and incentive approaches to encourage a matrix of sustainable land uses. Result 1.1: Ecological economic zoning and land use plans will have been prepared for Juruena and Cotriguaçú by end of year 2, and for three remaining municipalities, by year 5, including identification of areas suitable for creation of new conservation units. Activities 1.1.1- Review Prodeagro, PGAI, INCRA, and municipal initiatives to identify advances and shortfalls, as a basis for regional environmental management. 1.1.2- Establish, structure and maintain project GIS facilities in Juruena, and prepare base maps for planning purposes. 1.1.3- Access and interpret existing macro zoning maps and remote sensing data on regional land use trends and property rights to identify threats to biodiversity. 1.2.1- Train all project technicians and at least 2 staff members of each municipality in methodologies for participatory land use planning. 1.1.4- Conduct a spatially referenced, multi-taxa baseline assessment of remaining biological resources in the project region, with a particular focus on NTFP. 1.1.5- Conduct at least 5 intensive planning workshops to inform municipal officials of the purpose and application of zoning and land use plans. 1.1.6- Carry out at least 3 inter-municipal workshops to discuss and plan creation of regional biodiversity corridors and new conservation units. 1.1.7- Finalize preparation of municipal ecological-economic and land use plans.	• Data on prior initiatives has been reviewed and cataloged. • GIS facilities installed and in operation. • Biodiversity threats detailed and updated. • Project staff trained in bioregional planning methodologies. • Baseline bioregional assessment completed • Municipal officials knowledgeable of purpose of zoning plans • Corridors and conservation units identified in zoning plans. • Municipal plans prepared and distributed among stakeholders.	• Review of PGAI and Prodeagro implementation; database. • Equipment purchase records. On-site verification of mapping capabilities. • Catalog of data accessions; evaluation of current threats. • Training session records; skills assessment. • Bioregional assessment report. • Performance evaluation of training activities and products. • Municipal zoning and land use plans. • Municipal zoning and land use plans; stakeholder testimony.	• Increasing skepticism regarding the realization of conservation objectives through promoting sustainable uses in the productive landscape. • EEZ and other baseline environmental management activities planned by FEMA are not completed due to lack of funding and/or agency capacity. • Settlement projects proceed with delimitation and occupation of lots without initial land-use planning and designation of permanent conservation blocks.

OBJECTIVES, RESULTS AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	RISKS
Result 1.2: Ecological-economic zoning plans for Juruena and Cotriguaçu will have been disseminated, stakeholders conscious of conservation needs and incentives and capable of achieving consensus and monitoring compliance with plans by end of year 3, and in the remaining three municipalities by end of year 5.			
Activities			
1.2.1- Detail use of incentive instruments, easements (RPPN) and related financing to remove barriers toward establishment of new conservation units, and disseminate to local stakeholders through at least 1 regional workshop.	• Stakeholders knowledgeable of conservation financing options.	• Report on existing and potential incentives for conservation; workshop records	• Consensus amongst stakeholders on conservation objectives is not achieved, threatening demarcation of new public or private conservation units, and the goal of halting settlement expansion.
1.2.2- Furnish technical and legal assistance to remove barriers to regularization of existing conservation units, beginning with the Guariba-Roosevelt Extractive Reserve, to establish property rights and stimulate sustainable use.	• Existing conservation units and extractive reserve regularized.	• Public registry of conservation unit demarcation	
1.2.3- Furnish technical and legal assistance toward creation of at least 3 new municipal conservation units, and to delineate and characterize remaining forests on at least 5 private properties or settlements to create permanent conservation easements.	• Conservation units and easements delineated in zoning plans.	• Local property registry of titles with RPPN and legal reserve delimitation.	
1.2.4- Disseminate ecological-economic zoning plans, and hold at least 1 workshop in each municipality to establish consensus on shared goals and responsibilities for land use and environmental management among local stakeholders.	• Stakeholders agree on zoning plans and environmental objectives.	• Workshop records; municipal stakeholder accord on plans.	• Inability / unwillingness of governments to adopt participatory management strategies, resulting in a lack of perceived ownership by local communities over conserva-tion interventions.
1.2.5- Train at least 2 municipal officials and 3 civil society representatives in each municipality to access, interpret and use remote sensing data, and to carry out biodiversity inventory, monitoring and conflict resolution through modular courses in Juruena (years 2 and 3) and in one other municipality (years 5 and 6).	• Trainees identify and monitor critical biodiversity components, interpret, manage and use GIS data.	• Course records; trainee performance evaluation and follow-up skills assessment.	
1.2.6- Undertake participatory biodiversity monitoring exercises in areas under threat identified during the initial baseline assessment, by the end of years 4 and 7.	• Chief biodiversity threats identified by local participants.	• Testimony of stakeholders; biodiversity threat inventory.	
1.2.7- Plan and provide technical support to establish an "early warning system" with a network of local residents through 1 workshop in each municipality and annual network support meetings thereafter.	• Early warning network established and supported.	• Workshop records; network affiliation registry.	• The public policy context and political support toward project objectives is not maintained over the life of the project.
1.2.8- Prepare, test and publish a locally referenced manual for environmental education in the project region, including biodiversity conservation and sustainable use.	• Educators receive environment-al education manual.	• School visitation.	
1.2.9- Train at least 10 local primary schoolteachers, NGOs and municipal staff in environmental education techniques through 1 didactic skills workshop in each municipality.	• Trainees able to present key environmental concepts to landowners and local youth.	• School visitation; educational skills assessment.	

OBJECTIVES, RESULTS AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	RISKS
OBJECTIVE 2: Pilot sites demonstrating biodiversity-enhancing and NTFP-enriched agrosilvopastoral systems are established and disseminated with active involvement of small farmer colonists.			
Result 2.1: Collaborating agencies and stakeholders will have approved an operational and technical plan for execution of agrosilvopastoral activities by the end of year 1.			
Activities			
2.1.1- Review literature and practical initiatives in Amazon agroforestry, and visit innovative projects in the Amazon region with local leaders for interchange.	• Literature review and project database prepared and in use.	• Site visit records, participant testimony; agroforestry review.	
2.1.2- Conduct a detailed baseline assessment of current socio-economic conditions and trends in the region, and of the sustainability of current production practices.	• Limitations/potentials for agroforestry adoption defined.	• Socio-economic baseline study.	
2.1.3- Ensure that areas apt for agroforestry systems establishment are identified in municipal ecological-economic zoning plans.	• Agroforestry areas delimited in zoning plans.	• Municipal ecological-economic zoning maps.	
2.1.4- Prepare an ecological-economic assessment of the agrosilvopastoral model tested by IPN in Juruena.	• IPN model verified, validated and improved.	• External assessment of IPN model.	
2.1.5- Prepare a study to identify NTFP suitable for integration with agroforestry systems and derived from native resources, based on the PDF-B and biodiversity inventory.	• Regional NTFP potential known	• NTFP mapping and inventory.	
2.1.6- Define proposed agrosilvopastoral models and project demonstration techniques.	• Agroforestry models and demonstration methods defined	• Report on agroforestry models and demonstration methods.	
2.1.7- Prepare a project communication strategy report and draft divulgation materials.	• Extension methods reflect local understanding and literacy.	• External evaluation of divulgation materials.	
Result 2.2: At least 6 Agroforestry Demonstration Units (DU) of at least 1 ha. each will have been established and farmers trained in Juruena and Cotriguaçú by end of year 3, and at least 10 additional DUs and training undertaken in remaining municipalities by end of year 7.			
Activities			
2.2.1- Train at least 10 local residents in each municipality to demarcate seed-bearing trees, collect and condition seeds of native species (timber and NTFP) for seedling production in local nurseries through at least 5 field workshops.	• Seed collectors certified; seed trees demarcated.	• Training session records; seed collector certifications.	
2.2.2- Conduct at least 1 practical agroforestry-training course including DU field days with at least 25 participants annually in each project municipality.	• Participants are knowledgeable of agroforestry techniques.	• Field day records; producer testimony.	
2.2.3- Select participating farmers in each municipality and enter into long-term agreements for DU implementation, including shared provision of inputs.	• Demonstration units installed under farmer management.	• DU visits.	
2.2.4- Accompany DU progress, through monthly field visits, registering input and resource usage, as well as factors affecting seedling survival and performance including socio-economic conditions.	• Detailed data exists on DU input use and performance	• Technical and financial reports on agroforestry DUs.	

OBJECTIVES, RESULTS AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	RISKS
2.2.5- Contract 2 interns from each municipality, for placement in 6-month internships, training them to impart agroforestry practices to their families and neighbors.	• Interns demonstrate knowledge of agroforestry practices.	• Internship evaluations; intern placement records.	
2.2.6- Demarcate and establish baseline conditions in at least 2 monitoring plots in each municipality for comparison of agroforestry treatment effects, and undertake annual assessment of biodiversity and socio-economic impacts of DU's.	• Agroforestry DUs sustain and promote biodiversity.	• Floral regeneration, fauna monitoring, socio-economic data.	
2.2.7- Install 5 local nurseries for native tree seedling production in collaboration with partner institutions and farmers.	• Nurseries installed and under local management.	• Nursery inspections; seedling production protocols.	
2.2.8- Produce at least 200,000 seedlings/yr for reforestation and establishment of agroforestry DUs.	• Seedling production and distribution targets are met.	• Nursery seedling production and distribution records.	
2.2.9- Provide technical assistance toward establishment of 5 municipal watershed management programs.	• Target watershed protection sites are identified.	• Watershed protection and recuperation plans.	
2.2.10- Evaluate and disseminate results of agroforestry trials, through local field days.	• Agroforestry systems assessed; local producers knowledgeable.	• Assessment report; field day registry; stakeholder testimony	
Result 2.3: Eco-markets and certification prospects for products of agroforestry systems and NTFP will have been identified and tested for products of the Guariba-Roosevelt RESEX, Juruena and Cotriguaçú by end of year 3 and remaining municipalities by the end of year 7.			
Activities 2.3.1- Organize a test of Brazil nut harvesting in the Guariba-Roosevelt RESEX, and evaluate community organizational capacity for production and processing.	• Brazil nut harvesting and production options assessed.	• Brazil nut test evaluation;	• Involvement of local farmers in NTFP activities is limited, due to lack of practical experience.
2.3.2- Investigate and test potential markets with samples of agroforestry products and NTFP, analyze financial viability and propose techniques for community management, harvesting, and processing of agroforestry products and NTFP.	• Market potentials and trends characterized and technical-economic viability assessed	• Market potential analysis; product viability studies; harvesting/management system	
2.3.3- Provide legal and technical assistance to rural producer associations toward formation of at least 3 local and 1 regional cooperative, to facilitate marketing.	• Producers able to structure and establish cooperatives.	• Technical assistance records; cooperative statutes.	• Economic viability and market premiums for certified agroforestry and NTFP do not materialize, contradicting efforts to promote adoption of alternative production techniques.
2.3.4- Furnish training for at least 8 cooperative managers and financial staff in marketing opportunities and strategies, and in administrative procedures.	• Cooperative managers define market opportunities/strategies	• Training session records; performance evaluation.	
2.3.5- Prepare an assessment of certification criteria for agroforestry and NTFP management, in consultation with accredited organs, identifying adoption barriers.	• Certification criteria defined.	• Report on certification criteria; barriers assessment.	
2.3.6- Assist at least 3 producer associations to identify and contract recognized certification organs to obtain pre-certification assessments of production practices.	• Producers knowledgeable of certification requirements.	• Certifier referrals; pre-certification results.	
2.3.7- Train 1 manager of at least 3 producer associations on procedures for conducting periodic audits to ensure and maintain product quality and credibility.	• Managers knowledgeable of certification audit procedures.	• Training session records; auditors' reports.	

OBJECTIVES, RESULTS AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	RISKS
OBJECTIVE 3: Pilot sites demonstrating sustainable forest management are established and disseminated in the project area with active participation of timber operators.			
Result 3.1: An operational and technical plan for execution of sustainable forest management activities will have been prepared and approved by collaborating entities by end of year 1.			
Activities			
3.1.1- Review Prodeagro (IPN/Rohden), PGAI and IBAMA documents and actions related to forest management planning in the project area and wider Amazon.	• Data on prior initiatives has been reviewed and cataloged.	• Rapid timber enterprise diagnosis records.	
3.1.2- Conduct a rapid diagnosis of existing management plans, production technology and technical capacity of field teams with at least 1 timber enterprise in each municipality to define required interventions.	• Baseline forest management conditions are reassessed, interventions defined.	• Timber management survey report.	
3.1.3- Ensure that areas apt for sustainable forest management are identified in municipal ecological-economic zoning plans.	• Timber management areas delimited in zoning plans.	• Municipal ecological-economic zoning plans.	
3.1.4- Visit at least 2 timber enterprises already certified or engaged in the certification process in the Amazon with managers of regional timber companies.	• Local timber managers are aware of sustainable forestry.	• Trip reports. Timber managers' testimony.	
3.1.5- Define criteria for sustainable forest management models and project demonstration techniques.	• Sustainable forestry models and criteria defined.	• Report on proposed sustainable management model.	
3.1.6- Prepare a project communication strategy report and draft divulgation materials.	• Extension methods reflect local understanding and literacy.	• Draft divulgation materials. Timber managers' testimony.	
Result 3.2: At least 1 Sustainable Forest Management DU on a minimum of 100 ha each will have been established in each of Juruena and Cotriguaçú by the end of the year 2, and in each remaining municipality by end of year 5, including training and field demonstrations.			
Activities			
3.2.1- Select partner enterprises to establish sustainable forest management DUs, and enter into long-term agreements, including shared provision of inputs.	• Partners observe terms of sustainable management trials.	• Formal agreements with DU enterprises.	
3.2.2- Delimit permanent biodiversity protection areas on all selected properties, conduct pre-harvest commercial and biodiversity inventories, establishing monitoring plots.	• Biodiversity protection and monitoring units demarcated.	• Property maps; protection area demarcation croquis.	
3.2.3- Provide technical assistance to each partner enterprise in pre-harvest planning, including preservation of seed-bearing trees and critical habitat, vine cutting, felling direction, road and patio layout to minimize harvest impact.	• Pre-harvest practices in forestry DUs effective in minimizing harvest impacts.	• Exploitation plans and DU site inspections.	
3.2.4- Provide technical assistance toward post-harvest treatments, including enrichment with NTFP and timber species, as well as in nursery establishment.	Post-harvest treatments promote natural regeneration.	• Regeneration plot monitoring reports; DU site inspection.	

OBJECTIVES, RESULTS AND ACTIVITIES	INDICATORS	MEANS OF VERIFICATION	RISKS
3.2.5- Conduct 1 training session in each municipality for forest enterprise managers and directors and 1 technical session for regional foresters. 3.2.6- Conduct 1 training session and field demonstration annually for machine and chainsaw operators. 3.2.7- Evaluate and disseminate results of sustainable forest management trials through field days with participating timber enterprises. Result 3.3: Timber enterprises in Juruena and Cotriguaçu will have been informed of the advantages and procedures for sustainable management and forest product certification by end of year 2, and in remaining municipalities by the end of year 5. Activities 3.3.1- Conduct a review of assessment and monitoring criteria for sustainable forest management in consultation with accredited certifying institutions. 3.3.2- Prepare a report on barriers to certification in the project region, identifying necessary investments and market prospects. 3.3.3- Organize 1 workshop annually regarding specialized timber markets, available financing and incentives toward sustainable forest management meeting certification criteria. 3.3.4- Provide assistance to at least 3 timber enterprise managers and local foresters to identify and contract pre-certification assessments to adapt their operations toward sustainable forest management criteria. 3.3.5- Train managers and local foresters associated with at least 3 timber enterprises to conduct periodic audits to ensure maintenance of product quality and credibility.	• Managers, foresters, machine and chainsaw operators aware and able to apply sustainable forest management practices. • Forestry systems assessed; local enterprises knowledgeable. • Assessment and monitoring criteria are defined. • Barriers to certification in project region are identified. • Trainees aware of financing sources, incentives and markets for sustainable forestry. • Local forest managers aware of certification requirements • Local forest managers knowledgeable of audit procedures.	• Training session records; interviews with managers, foresters, field workers. • Assessment report; field day registry; stakeholder testimony • Report on requirements for adaptation to FSC criteria • Report on barriers to forest management certification. • Workshop records; report on financing, incentives, markets for sustainable forestry. • Technical assistance records; pre-certification reports. • Training session records; performance evaluation.	• Economic viability and market premiums for certified sustainable tropical timber products do not materialize, contradicting efforts to promote adoption of alternative production techniques. • The domestic market does not adhere to international consumer trend to demand certified sustainable wood products.

D. INPUTS

81. FEMA, acting as Executing Agency will ensure cooperation in the project region by technical and administrative personnel associated with the baseline PGAI. In addition, FEMA will name a Project Liaison Officer who will be placed with the IPN field team, and responsible on behalf of the NPD to accompany project activities in the region and to participate in project evaluation and PSC meetings. Details of activities in support of project objectives by the Executing Agency and other project partners are provided in Annex V.

82. The agreed incremental costs of securing global environmental benefits through this project are detailed in Annex I in standard format, and summarized below. Incremental costs to be financed by the GEF amount to US$6,704,112. GEF investments complement Brazil's commitments to biodiversity conservation and sustainable development (the baseline has been estimated at US$9,848,333). The project budget is outlined below. See Annex V for details on project co-financing.

OBJECTIVES	GEF BUDGET	CO-FINANCING	TOTAL PROJECT
1. Municipal ecological-economic zoning plans	**2,136,944**	**1,970,590**	**4,107,534**
2. Agrosilvopastoral demonstrations	**2,357,084**	**4,490,294**	**6,847,378**
3. Sustainable forest management demonstrations	**2,210,084**	**2,588,235**	**4,798,319**
TOTAL	**6,704,112**	**9,049,119**	**15,753,231**

Note: GEF allocation for outputs 2 and 3 include US$150,000 as outlays for monitoring in the 3-year post-GEF phase.

83. Commitments of financing to activities complementary with the project include inputs to training and demonstration in recuperation of degraded lands on Peugeot/ONF carbon sink reforestation sites in collaboration with IPN, and provision of seedlings for agroforestry trials in colonist settlements. Other significant financing supportive to project objectives is anticipated through investments toward expansion in sustainable logging and associated demonstration activities by Rohden Lignea S.A. (including financing from environmental funds manager A2R Ltda.), and by INCRA toward its sustainable settlements program in NW Mato Grosso. In addition, project co-financing, mainly in kind, will also be provided by IBAMA, CNPT, state and municipal governments and local associations. Details of co-financing commitments to the project are provided in Annex V.

84. UNDP will, jointly with the project national executing agency, undertake program support activities, provide advice on planning and implementation as well as carry out technical, substantive, monitoring and evaluation missions in the course of project execution (utilizing resources allocated for that purpose under budget line 16.71). UNDP will collaborate in the identification and selection of project professional personnel, who, upon approval by the project coordination, will be hired by UNDP. Upon request of the national executing agency, UNDP will place at its disposal mechanisms for the acquisition of goods and services for the benefit of the project, in accordance with the corresponding approved budget (and under the appropriate budget lines). The provision of the said physical and human inputs shall be made according to procedures for national execution of technical cooperation projects, agreed upon by the Brazilian Government and UNDP, and may include:

- Recruitment and hiring of national and international consultants and experts, including administration of the corresponding contracts;
- Analysis of personnel terms of reference;
- Subcontracting of public and private sector services;
- Analysis of the technical specifications of equipment;

- Support in the conduct of competitive bidding procedures;
- Evaluation and adjudication of competitive bidding;
- Financial monitoring of projects.

The hiring of project professional personnel shall not exceed the duration of the project, and shall not, under any circumstances, constitute an employment link with the executing agency.

The rules and procedures for contracting of services, acquisition of non-disposable material and hiring of consultants as well as the regulations on project execution are described in a specific annex to this document. These rules, procedures and regulations comply with those contained in the UNDP National Project Execution Manual.

The above mentioned assistance not only for technical support but also for support to national execution may be requested by the National Project Director or proposed by the UNDP Resident Representative, as required within the scope of the project document agreed upon with the Government. The financial resources for such assistance are to be provided by the project and its implementation shall likewise follow UNDP financial rules and regulations and, in operational terms, national execution procedures.

85. Detailing of Inputs:

1. Full time national staff

1.1 Project Technical Unit
- National Project Coordinator
- Operational Technical Manager
- Financial Manager
- Project Secretary and Administrative Manager
- Computer and Graphics Assistant

1.2 Project Field Staff
- Regional Field Coordinator (1)
- Project Liaison Officer (1 – responsible for FEMA liaison)
- Field Managers (5 – one in each municipality in the project area)
- Local Administrative Assistants (5 – one in each municipality)
- Agroforestry Technicians (5 – one in each municipality)
- Communications Officer

2. Short-term personnel

2.1 International consultants
- Bioregional Planning Expert
- Participatory Diagnosis and Land-Use Planning Expert

2.2 Short-term national consultants
- Socio-Institutional Analyst
- Resource Economist
- Legal Advisor
- Environmental Education Specialist
- Bioregional Planning and GIS Specialist
- Agroforestry and NTFP Advisor
- Agroforestry Systems Assessment Advisor

- Forest Management and Certification Advisor
- Miscellaneous training and capacity-building consultancies

3. Duty Travel
- In-country travel to project sites
- Interchange visits with stakeholders to other project areas
- International travel by International Consultants and for presentation of project results

4. Mission Costs
- Three Independent Evaluations in years 3, 5 and 7
- Post-Project Monitoring for 3 years after project completion

5. Sub-contracts [7]
- Monitoring and Evaluation
  a. socio-economic
  b. biodiversity assessments
- GIS mapping and database preparation
- Lessons Learned
- Temporary field labor and nursery installation

6. Equipment [8]
- Computers, office equipment, GIS software, scanners and plotters
- Field equipment, including handheld GPS, tents, climbing cable for seed collection, radios, etc.
- 4-wheel-drive utility vehicles and boat

7. Training and Workshops
- Environmental education, participatory land-use planning, agroforestry and forest management demonstration field days, etc.

8. Miscellaneous Expenses
- Fuel and supplies, including satellite imagery
- Routine operations and maintenance, including dedicated Internet facilities
- Reporting

86. The following tables describe the allocation of principal inputs by Objective and Result.

COMMON PERSONNEL FOR ALL OBJECTIVES

	Yr 1 – Yr 3	**Yr 4 – Yr 7**
	Juruena/Cotriguaçu	**All 5 municipalities**
Administrative Support	4	7
Basic Technical Team	10	16
Legal Advisor	1	1
Sub-contracts (Lessons Learned)	1	1

[7] See annex XI.
[8] An equipment list is provided in annex X.

OBJECTIVE 1: By end of project, all five municipalities in the project region will have elaborated and disseminated zoning plans and incentive approaches to encourage a matrix of sustainable land uses.

Result 1.1: Ecological economic zoning and land use plans will have been prepared for Juruena and Cotriguaçú by end of year 2, and for remaining municipalities, by year 5, including identification of areas suitable for creation of new conservation units.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	5	-	-
Sub-contracts	2	-	-
GIS Facilities	-	5	10
Workshops	-	8	200
Training	-	10	100

Result 1.2: Ecological-economic zoning plans for Juruena and Cotriguaçu will have been disseminated, stakeholders conscious of conservation needs and incentives and capable of achieving consensus and monitoring compliance with plans by end of year 3, and in the remaining three municipalities by end of year 5.

	Personnel during project period	**quantity**	**Persons trained**
Advisors	4	-	-
Sub-contracts	2	-	-
GIS Facilities	-	6	-
Workshops	-	11	250
Training	-	9	70

OBJECTIVE 2: Pilot sites demonstrating biodiversity-enhancing and NTFP-enriched agrosilvopastoral systems are established in the project area with active involvement of small farmer colonists.

Result 2.1: Collaborating agencies and stakeholders will have approved an operational and technical plan for execution of agrosilvopastoral activities by the end of year 1.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	5	-	-
Sub-contracts	1	-	-
Agroforestry Field Trip	-	1	-

Result 2.2: At least 6 Agroforestry Demonstration Units (DU) of at least 1 ha. each will have been established and farmers trained in Juruena and Cotriguaçú by end of year 3, and at least 10 additional DUs and training undertaken in remaining municipalities by end of year 7.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	3	-	-
Sub-contracts	2	-	-
Workshops	-	5	50
Training	-	26	650
Demonstration Units	-	16	1.000 Families

Result 2.3: Eco-markets and certification prospects for products of agroforestry systems and NTFP will have been identified and tested for products of the Guariba-Roosevelt – Resex, Juruena and Cotriguaçú by end of year 3 and of remaining municipalities by the end of year 7.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	3	-	-
Sub-contracts	-	-	-
Training	-	2	11
Workshops	-	-	-

OBJECTIVE 3: Pilot sites demonstrating permanent sustainable management of forest values are established in the project are a with active participation of timber operators.

Result 3.1: An operational and technical plan for execution of sustainable forest management activities will have been prepared and approved by collaborating entities by end of year 1.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	2	-	-
Forest Mgmt Field Trip		1	10

Result 3.2: At least 1 Sustainable Forest Management DU on a minimum of 100 ha each will have been established in each of Juruena and Cotriguaçú by the end of the year 2, and in each remaining municipality by end of year 5, including training and field demonstrations.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	2	-	-
Sub-contracts	1	-	-
Workshops	-	-	-
Training		7	140
Demonstration Units		5	5 Enterprises

Result 3.3: Timber enterprises in Juruena and Cotriguaçu will have been informed of the advantages and procedures for sustainable management and forest product certification by end of year 2, and in remaining municipalities by the end of year 5.

	Personnel during project period	**Quantity**	**Persons Trained**
Advisors	2	-	-
Sub-contracts	-	-	-
Workshops	-	7	20
Training	-	2	20

E. PROJECT RISKS, PROBABILITY AND ABATEMENT MEASURES

87. The primary vehicle by which sustainability of alternative agroforestry and sustainable forest management approaches initiated by the project will be ensured is by involving and empowering the primary actors whose decisions have a direct bearing on biodiversity, namely, farmers, colonists, and local timber operators. The project allows for the active involvement of municipal and state government agencies responsible for sound environmental management and biodiversity conservation in the State, and will therefore greatly strengthen relevant in-country human resource and institutional capacity. The pivotal role played by IPN, as the main NGO active in this area, will also contribute to long-term continuity of efforts initiated under this project.

88. Risks associated with achieving project outputs and activities are presented in the Logical Framework matrix and described below, as to probability of occurrence and means of avoidance.

a) Description of Risk: Increasing skepticism regarding the realization of conservation objectives through promoting sustainable uses in the productive landscape.

Estimated Probability: Medium; While such skepticism exists, many in the conservation community now believe that unless accorded with a tangible value it will be very difficult to create appropriate incentives for biodiversity conservation and also that it is seldom possible to convert entire landscapes into protected areas. The Mato Grosso state government and federal agencies have made considerable advances in demarcating indigenous, extractive and biological reserves in the project region. Most remaining forests remain on private lands.

Abatement Measures: The proposed project seeks to demarcate some private areas as protected, including corridors, and promote sustainable uses in the productive landscapes. To achieve this balance a system of adaptive management that enables rapid learning through field-testing is critical, and therefore the project focuses on establishing a strong institutional foundation that can implement this by engaging continuous cooperation among private sector stakeholders and key public institutions for enforcing and sustaining project activities. This institutional structure coupled with a phased approach, where evaluation of one phase determines the design and implementation of the next phase, is designed to ensure continuous adaptive management. A team of public and private sector representatives will work together to evaluate feedback and lessons from demonstration sites and adapt the project strategy to mitigate risks and improve chances of success.

b) Description of Risk: Settlement projects proceed with delimitation and occupation of lots without initial land-use planning and designation of permanent conservation blocks.

Estimated Probability: Low; given the early substantive and financial collaboration established with INCRA on this project. INCRA has adopted as its baseline policy a "sustainable settlement" strategy, which is being tested for the first time in the Amazon in its colonization projects in NW Mato Grosso in collaboration with IPN.

Abatement Measures: The proposed project will enable IPN and INCRA to jointly build on this initial experience, to leverage adoption of these criteria in the remaining settlements planned for the NW region, and to disseminate this experience elsewhere in the Amazon.

c) Description of Risk: EEZ and other baseline environmental management activities planned by FEMA are not completed due to lack of funding and/or agency capacity.

Estimated Probability: Medium; Prodeagro and PGAI activities have proceeded, and have been provided with the necessary logistical support and staffing by the state government, but there have been serious delays in funding flows and accomplishments. Prodeagro dedicated considerable resources to the establishment of a macro ecological-economic zoning framework for state environmental management that

is still incomplete. The PGAI nourished considerable expectations in the project region to establish a framework for local land use management and a state government presence. Its implementation, however, has been primarily directed toward the installation of a physical operating base for municipal environmental councils and the development of state legislation for natural resource management. In retrospect, the program's objectives although sound are now perceived as having been overly optimistic, suggesting a need for extending its time horizon.

Abatement Measures: The proposed project overcomes some of the problems in previous state programs by focusing technical assistance and activities on the target region. The project staff will work in direct collaboration with PGAI personnel and within the same project coordination structure. Its demonstration activities and municipal planning component will largely complement the PGAI objectives, but neither can replace the need for baseline ecological economic zoning at a macro scale.

d) Description of Risk: Inability/unwillingness on the part of government agencies and municipalities to adopt participatory management measures in the place of traditional, top down conservation strategies, resulting in a lack of perceived ownership on the part of local communities over conservation interventions.

Estimated Probability: Low; Development programs in Northwest Mato Grosso are in their infancy, making it possible to mould approaches and methods without facing undue institutional rigidities. Municipalities and farmers' organizations have shown considerable interest in effecting a participatory management model under the project. However, the *modus operandi* of public participation in biodiversity conservation is sometimes poorly understood among governmental agencies, and decision-makers may not be fully cognizant of the implications of embracing a truly participatory paradigm. Responsibility will need to be shared between government managers and local community representatives if an active, rather than passive participation regime is to be achieved. For example, the elaboration of land use and economic-ecological zoning plans are often perceived as a top-down approach.

Abatement Measures: A direct involvement from the outset of communities and regional representatives will be essential to achieve effectiveness of conservation and development strategies. The project's considerable training emphasis will build broad-based capacity in participatory learning and action, public relations and other skills to facilitate public participation. IPN has long-term experience in participatory approaches in Juruena and other regions in Brazil demonstrating that this concept can be successfully put into practice. The objectives of land use concepts and agroforestry models will be discussed extensively with farmer organizations to ensure the model matches actual demand and to guarantee active participation during implementation. Training programs will be designed to build participatory management skills, and geared to addressing the skills development needs of local authorities and technicians, as well as representatives of local communities. Forest inventories, management plans, monitoring programs and sustainable use support activities would all be planned using participatory learning and action tools, so as to gear interventions to address community perceptions and needs.

e) Description of Risk: The public policy context and political support toward project objectives is not maintained over the life of the project.

Estimated Probability: Medium; The wide range of partners involved in the execution of the project and upon which its institutional and political support depends, makes it difficult to guarantee full support during the entire 7-year project period, considering the fast changing political environment in Brazil. Federal and state authorities might enter into dispute over their respective realms of responsibility and influence and support may be affected by the outcomes of public elections.

Abatement Measures: The project will involve local institutions and governmental agencies directly in the Steering Committee and local project management teams, to build ownership and responsibility. Community and private sector support will contribute to long-term political support. Federal agencies (IBAMA, INCRA) will need to be involved directly at all management levels in order to avoid that political

shifts alter policies supportive to project objectives. These institutions will also be essential for promoting transfer of models successfully implemented in the project region to other parts of the Amazon.

f) Description of Risk: Consensus amongst stakeholders on conservation objectives, particularly large landowners and timber enterprises, is not achieved, threatening demarcation of new public or private conservation units, and the goal of halting settlement expansion.

Estimated Probability: Medium, but changes in the policy and institutional framework for land use in the Amazon is beginning to alter long established parameters, particularly in Juruena, where IPN has already established a solid constituency among a broad range of stakeholders. Large timber companies show growing interest in establishing more sustainable extraction practices and smallholder organizations already consider agroforestry practices an appropriate alternative to cattle ranching and annual crops. However, the number of smallholders may grow with time if land is subdivided into smaller plots. Such changes could alter socio-economic dynamics and result in an increase in demand for additional settlement areas. In addition, smallholders tend to be less organized, increasing the transaction costs of consultation and consensus building.

Abatement Measures: The project field staff will carefully monitor implementation and stakeholder participation, vigilant to conflicts among stakeholders. The project explicitly includes an environmental education program, focused on municipal authorities, local communities, large landowners and settlers. Stakeholder assessments will be undertaken as part of ongoing socio-economic monitoring measures, being particularly vigilant to changing group composition. Measures to resolve conflicts will be adopted as necessary. The project will also promote a dynamic exchange of experiences among timber companies and farmers involved in sustainable projects and those not yet involved.

g) Description of Risk: Difficulties of involvement of local farmers in NTFP-activities, due to the lack of experience and practice.

Estimated Probability: Medium; However, interest among farmers and timber companies in learning to use and manage NTFP is high. Additionally, indigenous and extractivist groups reside in the region whose economy is traditionally based on NTFP extraction. Their often-weak relations with colonist communities may combine to exclude these groups from conservation and development efforts, and militate against transfer of technology.

Abatement Measures: Intervention methods including participatory inventories based on farmers' knowledge, will stimulate interest among colonists in making NTFP feasible. The project will seek mechanisms to share knowledge and skills in NTFP-related project activities through a targeted approach that seeks to strengthen institutional capacities for conservation among local user groups. Interchanges with producer groups that have successfully integrated NTFP into agroforestry systems will be promoted, to initiate introduction of NTFP species in forest management and agroforestry systems to avoid dependency on extractive methods alone.

h) Description of Risk: Economic viability and market premiums for certified agroforestry, NTFP and sustainable timber products do not materialize, contradicting efforts to promote adoption of alternative production techniques.

Estimated Probability: Low; There is an increased demand for sustainably harvested and produced natural products in the global market and in Brazil itself. The greatest need is to build local capacity to manage enterprises and financing to promote new sustainable business opportunities, as well as knowledge of market opportunities and trends. With reference specifically to agroforestry systems, a principal preoccupation is to ensure immediate economic returns to smallholders while perennial products mature to avoid discouraging them from undertaking these investments.

Abatement Measures: IPN and its partners have considerable experience in promotion of sustainable forest business opportunities and in elaborating business plans for these enterprises. Demonstration of these economic solutions to landowners and timber companies will help to remove barriers to their adoption. Investments in common infrastructure (nurseries, training facilities, etc.) at the settlement level will require partial subsidies from INCRA, PRONAF and other sources, and will be technically monitored by project personnel in order to reduce their implementation risks and costs. Rural credit will become an important tool for farmer involvement

i) Description of Risk: The domestic market does not adhere to international consumer trend to demand certified sustainable wood products.

Estimated Probability: Medium. As documented in a recently published analysis by Friends of the Earth, Imaflora and Imazon (*Hitting the Target: timber consumption in the Brazilian domestic market and promotion of forest certification*, June 1999), it is true that the vast majority of tropical timber produced in Brazil (86% of Amazon wood supplies) is destined for national markets. Although in the past, there was little concern in domestic wood consuming enterprises for use of sustainable management technology, this trend is growing. FSC criteria were adopted as a basis for purchase contracts for furniture retail by the nation's leading company in this sector, Tok & Stok, in November 1998, and an Association of Certified Tropical Wood Buyers was created in May 2000. There is a concerted effort on the part of a network of NGOs and concerned industry groups to support this trend, which has already led to adoption of FSC criteria by all 17 of the leading pulp and paper manufacturers in Brazil for their plantation practices. IBAMA now requires timber companies to adopt more rigorous management plans. These requirements do not however measure up to FSC certification criteria.

Abatement measures: It is a combination of regulatory demands, financial resources and market pressures that will eventually bring about a positive change in forest management technology. Among those economic incentives currently in process of legislative adoption in the state of Mato Grosso which will reinforce the redirection of productive activities in this direction are progressively reduced tax incidence in timber operations that adopt sustainable forest management, recycling of wood residues for energy generation, and value-added wood processing to improve economic viability. Instituto Pró-Natura is a co-manager of this program. Other important initiatives being adopted by partners in the GEF undertaking will further reinforce these incentives, including the creation of a Forest Fund to finance certified sustainable forest management, involving private international investors, leveraging social and environmental investments with advice from Pró-Natura.

F. PROJECT MANAGEMENT

1. ROLES AND RESPONSIBILITIES OF INVOLVED INSTITUTIONS

89. The project will have as its Executing Agency the State Environmental Secretariat of Mato Grosso (and its operational branch FEMA), whose PGAI is the centerpiece of the state's efforts to develop a decentralized environmental management structure, with an initial pilot under implementation now in northwest Mato Grosso. FEMA has established offices in each municipality to manage this regional baseline program in collaboration with local governments and NGOs.

90. Instituto Pro-Natura (IPN), through its existing local offices in the project region, and headquarters in Rio de Janeiro, will act as Project Implementation Agency and in this capacity will implement and report on project activities to FEMA and to the Project Steering Committee (see below). As Executing Agency, FEMA would sign-off on the project's implementation by IPN, which will assume responsibility for securing continuing commitments from co-financing agencies and private organizations.

91. This structure should serve to mobilize ongoing support and buy-in from the responsible local, state and federal government agencies, with particular involvement by INCRA, IBAMA, FEMA, the state Secretariat of Agriculture, EMPAER and municipal government agriculture and environment secretariats. Local extension and regulatory staff of these agencies will be directly engaged in project activities and training. At a local level, farmers and timber enterprises would participate in demonstrations, training sessions, etc. related both to agroforestry and forest management. Through their representative organizations, they, other local NGOs and their elected municipal officials would also be engaged in the process. A diagram summarizing the project coordination, implementation and execution arrangements is provided in Annex III.

2. PROJECT COORDINATION STRUCTURE

92. Extensive consultations have been undertaken with state, federal and multilateral organizations as well as private institutions and stakeholders involved in baseline activities in the project area, with a view to coordinating respective project interventions. As part of the baseline PGAI project, FEMA organized a regional Coordinating Unit and a Consultative Council (CGAI) composed of representatives of each of the five municipalities in the region, other state and federal agencies and civil society organizations. It was initially anticipated that the CGAI will provide a forum for linking the project with associated baseline initiatives in environmental management and EEZ programmed for 1998-2000 in northwest Mato Grosso. However, the CGAI has now been replaced by a Working Group among municipal and state authorities. This will provide the nucleus for establishment of a permanent institutional structure to guarantee continuity, coordination and adaptive management during and beyond the immediate proposed investments.

93. The proposed GEF project will seek to ensure continuity of this coordinative structure as an oversight entity that will review progress toward its objectives on a periodic basis. The same actors already engaged in the PGAI will share operational, decision-making and advisory responsibilities for the proposed project. As Executing Agency of the project, FEMA would designate the leader of a Project Steering Committee (PSC). The PSC would also include local representatives from municipal governments and civil society organizations, state agencies (FEMA, INTERMAT, EMPAER) and federal agencies (INCRA, IBAMA, EMBRAPA). The PSC will be installed during the first 3 years of the project, and would be institutionalized as a full-fledged regional Commission over the final 4 years, after which it would operate independently.

94. The PSC would serve as the project's primary decision-making body, providing a participatory forum for project oversight and promote cross-sectoral integration of policies and programs. The National Project Coordinator (NPC) will serve as Secretary to the Committee. Donor agencies and private sector entities involved in associated financing and others will be invited to attend the PSC meetings. Meetings would be held twice annually in the first three years and annually thereafter, with an additional, extraordinary meeting convened in year 4 following the first Independent Evaluation of the Project. The meetings would be held in the project region, on a schedule to be determined by the NPC in consultation with the NPD.

95. The PSC will perform the following functions:

- reviewing the Annual Project Report (APR), Terminal Report, Independent Evaluations and lessons learned documentation;
- evaluating project outcomes and feedback into strategic planning;
- ensuring implementation of recommendations made by Independent Evaluation Teams;
- evaluating the efficacy of efforts to jointly program project activities with baseline initiatives; and
- provide policy guidance to participating agencies based on lessons learned under the project.

3. PROJECT STAFFING AND ADMINISTRATIVE PROCEDURES

96. An organogram of the core project staff structure is provided in Annex IV. The Secretary of Environment of Mato Grosso (FEMA President) or his designated representative would serve as National Project Director (NPD) and Chairman of the Project Steering Committee, and would be accountable for the mobilization of inputs and achievement of outputs.

97. A National Project Coordinator (NPC) will serve as the focal point for project accountability, convening Project Steering Committee meetings, overseeing progress in implementation, coordinating actions with other line agencies, and reporting. He or she would be responsible for proposing project staff and sub-contractor candidates and Terms of Reference for approval by the NPD, and for supervising allocation of the project budget.

98. To guide its technical tasks, IPN would name a Consultative Council composed of scientists, NGOs and business leaders knowledgeable of the region, including faculty of the Federal University of Mato Grosso.

99. A Project Technical Unit (PTU) would be established within IPN to supervise and co-ordinate activity implementation and operations. The PTU would report to the NPC, and be staffed with an Operational and Technical Manager and a Financial and Administrative Manager at the headquarters level. In the project region, a Regional Field Coordinator, Field Managers and Administrative Assistants in each municipal project office will support day-to-day field operations. Terms of Reference for all project staff are provided in Annex IX. UNDP program and operations personnel at the Country Office will train headquarters staff in UNDP Project Execution/Implementation procedures. The PTU would be responsible for operational management of the project and administering assigned inputs.

100. UNDP-Brazil will be the depository of project funds, and will disburse monies upon the request of the NPD for purposes stipulated in the Project Document and according to UNDP rules and procedures.

101. Members of research and academic institutions may be invited to complement IPN's internal project staff to implement components of the project relating to participatory diagnosis and planning for sustainable settlements, training and organization of stakeholder groups, the evaluation of the agroforestry and forest management systems proposed for dissemination in the project region, and of the impacts of the project on socio-economic conditions and regional biodiversity. NGOs/research institutions would be pre-selected according to criteria such as previous field experience and technical capacity, availability of personnel and equipment. In all cases, selection of NGOs/institutions will be based on competitive processes, following UNDP's procedures and rules for National execution. The PTU will prepare Terms of Reference clearly specifying functions, responsibilities, deliverables, measures for ensuring financial accountability and reporting requirements.

G. MONITORING AND EVALUATION

102. The project's Monitoring and Evaluation (M&E) arrangements encompass the collection, analysis, and dissemination of data and information on issues related to implementation progress and impact assessment (indicators along with sources of verification are outlined in the logical framework matrix in section C., above). The Project Implementation Unit (PIU) will monitor the progress of project implementation and impact in the middle, at the end, and after completion of the project.

103. Critical to effective monitoring and evaluation will be the participation of affected stakeholders in determining, assessing, and analyzing project progress and overall impact. Consequently, the M&E strategy will include an independent stakeholder task force responsible for providing substantive feedback to the

PIU on a biannual basis with recommendations and practical alternatives. These will be analyzed and reflected in annual work plans and project implementation strategies. The lessons learned from implementation of activities will be compiled, published and disseminated to raise public awareness of the Project and substantiate its credibility.

104. Current UNDP project monitoring and reporting strategies (Tripartite Project Review, Program Performance Evaluation Reports, Mid Term- and Final independent Reviews) will be applied and complemented by GEF M&E procedures such as the annual Project Implementation Review (PIR). Resources have been explicitly allocated in the project budget for these purposes, as well as post-project monitoring of the project's effectiveness in meeting its medium term objectives. Project milestones to guide M&E activities are described in Annex II. A provisional schedule of reporting activities is provided, below.

SCHEDULE OF PROJECT REVIEWS AND EXTERNAL EVALUATIONS

ProDoc Signature:	March 2001 [9]
Project Commencement:	April 2001

Reporting Activity Description

1.	Inception Report	April 2001
2.	1st Project Steering Committee (PSC) meeting	June 2001
3.	2nd PSC Meeting	December 2001
4.	1st Annual Project Report (APR)	April 2002
5.	3nd PSC meeting	June 2002
6.	4th PSC meeting	December 2002
7.	2nd APR	April 2003
8.	First Independent Evaluation	May 2003
9.	5th PSC meeting	June 2003
10.	3rd APR	April 2004
11.	6th PSC meeting	June 2004
12.	4th APR	April 2005
13.	Second Independent Evaluation	May 2005
14.	7th PSC meeting (in light of 2nd IE)	June 2005
15.	5th APR	April 2006
16.	8th PSC meeting	June 2005
17.	6th APR	April 2007
18.	9th PSC meeting	June 2006
19.	Terminal Report and PSC evaluation	April 2007
20.	Terminal Evaluation and Project Review	May 2007

In addition to the above, progress reports will be prepared, as per UNDP requirements.

[9] Project inception date is dependent on UNDP and Brazilian government procedures.

H. LEGAL CONTEXT

This Project Document shall be the instrument required in the Supplementary Project Document Provisions, Annex XIV.

I. WORK PLAN

YEARS 1 AND 2 (TRIMESTRAL BASIS)

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
OBJECTIVE 1: By end of project, all five municipalities in the project region will have elaborated and disseminated zoning plans and incentive approaches to encourage a matrix of sustainable land uses.								
Review Prodeagro, PGAI, INCRA, and municipal initiatives to identify advances and shortfalls, as a basis for regional environmental management.								
Establish, structure and maintain project GIS facilities in Juruena, and prepare base maps for planning purposes.								
Access and interpret existing macro zoning maps and remote sensing data on regional land use trends and property rights to identify threats to biodiversity.								
Train all project technicians and at least 2 staff members of each municipality in methodologies for participatory land use planning.								
Conduct a spatially referenced, multi-taxa baseline assessment of remaining biological resources in the project region, with a particular focus on NTFP.								
Conduct at least 5 intensive planning workshops to inform municipal officials of the purpose and application of zoning and land use plans.								
Carry out at least 3 inter-municipal workshops to discuss and plan creation of regional biodiversity corridors and new conservation units.								
Finalize preparation of municipal ecological-economic and land use plans.								

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
Detail use of incentive instruments, easements (RPPN) and related financing to remove barriers toward establishment of new conservation units, and disseminate to local stakeholders through at least 1 regional workshop.								
Furnish technical and legal assistance to remove barriers to regularization of existing conservation units, beginning with the Guariba-Roosevelt Extractive Reserve, to establish property rights and stimulate sustainable use.								
Furnish technical and legal assistance toward creation of at least 3 new municipal conservation units, and to delineate and characterize remaining forests on at least 5 private properties or settlements to create permanent conservation easements.								
Disseminate ecological-economic zoning plans, and hold at least 1 workshop in each municipality to establish consensus on shared goals and responsibilities for land use and environmental management among local stakeholders.								
Train at least 2 municipal officials and 3 civil society representatives in each municipality to access, interpret and use remote sensing data, and to carry out biodiversity inventory, monitoring and conflict resolution through modular courses in Juruena (years 2 and 3) and in one other municipality (years 5 and 6).								
Undertake participatory biodiversity monitoring exercises in areas under threat identified during the initial baseline assessment, by the end of years 4 and 7.								
Plan and provide technical support to establish an “early warning system” with a network of local residents through 1 workshop in each municipality and annual network support meetings thereafter.								

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
Prepare, test and publish a locally referenced manual for environmental education in the project region, including biodiversity conservation and sustainable use.								
Train at least 10 local primary schoolteachers, NGOs and municipal staff in environmental education techniques through 1 didactic skills workshop in each municipality.								
OBJECTIVE 2: Pilot sites demonstrating biodiversity-enhancing and NTFP-enriched agrosilvopastoral systems are established and disseminated with active involvement of small farmer colonists.								
Review literature and practical initiatives in Amazon agroforestry, and visit innovative projects in the Amazon region with local leaders for interchange.								
Conduct a detailed baseline assessment of current socio-economic conditions and trends in the region, and of the sustainability of current production practices.								
Ensure that areas apt for agroforestry systems establishment are identified in municipal ecological-economic zoning plans.								
Prepare an ecological-economic assessment of the agrosilvopastoral model tested by IPN in Juruena.								
Prepare a study to identify NTFP suitable for integration with agroforestry systems and derived from native resources, based on the PDF-B and biodiversity inventory.								
Define proposed agrosilvopastoral models and project demonstration techniques.								
Prepare a project communication strategy report and draft divulgation materials.								

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
Train at least 10 local residents in each municipality to demarcate seed-bearing trees, collect and condition seeds of native species (timber and NTFP) for seedling production in local nurseries through at least 5 field workshops.								
Conduct at least 1 practical agroforestry-training course including DU field days with at least 25 participants annually in each project municipality.								
Select participating farmers in each municipality and enter into long-term agreements for DU implementation, including shared provision of inputs.								
Accompany DU progress, through monthly field visits, registering input and resource usage, as well as factors affecting seedling survival and performance including socio-economic conditions.								
Contract 2 interns from each municipality, for placement in 6-month internships, training them to impart agroforestry practices to their families and neighbors.								
Demarcate and establish baseline conditions in at least 2 monitoring plots in each municipality for comparison of agroforestry treatment effects, and undertake annual assessment of biodiversity and socio-economic impacts of DU's.								
Install 5 local nurseries for native tree seedling production in collaboration with partner institutions and farmers.								
Produce at least 200,000 seedlings/yr for reforestation and establishment of agroforestry DUs.								
Provide technical assistance toward establishment of 5 municipal watershed management programs.								
Evaluate and disseminate results of agroforestry trials, through local field days.								

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
Organize a test of Brazil nut harvesting in the Guariba-Roosevelt RESEX, and evaluate community organizational capacity for production and processing.								
Investigate and test potential markets with samples of agroforestry products and NTFP, analyze financial viability and propose techniques for community management, harvesting, and processing of agroforestry products and NTFP.								
Provide legal and technical assistance to rural producer associations toward formation of at least 3 local and 1 regional cooperative, to facilitate marketing.								
Furnish training for at least 8 cooperative managers and financial staff in marketing opportunities and strategies, and in administrative procedures.								
Prepare an assessment of certification criteria for agroforestry and NTFP management, in consultation with accredited organs, identifying adoption barriers.								
Assist at least 3 producer associations to identify and contract recognized certification organs to obtain pre-certification assessments of production practices.								
Train 1 manager of at least 3 producer associations on procedures for conducting periodic audits to ensure and maintain product quality and credibility.								

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
OBJECTIVE 3: Pilot sites demonstrating sustainable forest management are established and disseminated in the project area with active participation of timber operators.								
Review Prodeagro (IPN/Rohden), PGAI and IBAMA documents and actions related to forest management planning in the project area and wider Amazon.								
Conduct a rapid diagnosis of existing management plans, production technology and technical capacity of field teams with at least 1 timber enterprise in each municipality to define required interventions.								
Ensure that areas apt for sustainable forest management are identified in municipal ecological-economic zoning plans.								
Visit at least 2 timber enterprises already certified or engaged in the certification process in the Amazon with managers of regional timber companies.								
Define criteria for sustainable forest management models and project demonstration techniques.								
Prepare a project communication strategy report and draft divulgation materials.								
Select partner enterprises to establish sustainable forest management DUs, and enter into long-term agreements, including shared provision of inputs.								
Delimit permanent biodiversity protection areas on all selected properties, conduct pre-harvest commercial and biodiversity inventories, establishing monitoring plots.								
Provide technical assistance to each partner enterprise in pre-harvest planning, including preservation of seed-bearing trees and critical habitat, vine cutting, felling direction, road and patio layout to minimize harvest impact.								

OBJECTIVES / ACTIVITIES	1ST Q	2ND Q	3RD Q	4TH Q	5TH Q	6TH Q	7TH Q	8TH Q
Provide technical assistance toward post-harvest treatments, including enrichment with NTFP and timber species, as well as in nursery establishment.								
Conduct 1 training session in each municipality for forest enterprise managers and directors and 1 technical session for regional foresters.								
Conduct 1 training session and field demonstration annually for machine and chainsaw operators.								
Evaluate and disseminate results of sustainable forest management trials through field days with participating timber enterprises.								
Conduct a review of assessment and monitoring criteria for sustainable forest management in consultation with accredited certifying institutions.								
Prepare a report on barriers to certification in the project region, identifying necessary investments and market prospects.								
Organize 1 workshop annually regarding specialized timber markets, available financing and incentives toward sustainable forest management meeting certification criteria.								
Provide assistance to at least 3 timber enterprise managers and local foresters to identify and contract pre-certification assessments to adapt their operations toward sustainable forest management criteria.								
Train managers and local foresters associated with at least 3 timber enterprises to conduct periodic audits to ensure maintenance of product quality and credibility.								

YEARS 3 THROUGH 7 (SEMESTRAL BASIS)

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
OBJECTIVE 1: By end of project, all five municipalities in the project region will have elaborated and disseminated zoning plans and incentive approaches to encourage a matrix of sustainable land uses.										
Establish, structure and maintain project GIS facilities in other municipalities, and prepare base maps for planning purposes.										
Access and interpret existing macro zoning maps and remote sensing data on regional land use trends and property rights to identify threats to biodiversity.										
Train all project technicians and at least 2 staff members of each municipality in methodologies for participatory land use planning.										
Conduct a spatially referenced, multi-taxa baseline assessment of remaining biological resources in the project region, with a particular focus on NTFP.										
Conduct at least 5 intensive planning workshops to inform municipal officials of the purpose and application of zoning and land use plans.										
Carry out at least 3 inter-municipal workshops to discuss and plan creation of regional biodiversity corridors and new conservation units.										
Finalize preparation of municipal ecological-economic and land use plans.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
Detail use of incentive instruments, easements (RPPN) and related financing to remove barriers toward establishment of new conservation units, and disseminate to local stakeholders through at least 1 regional workshop.										
Furnish technical and legal assistance to remove barriers to regularization of existing conservation units, beginning with the Guariba-Roosevelt Extractive Reserve, to establish property rights and stimulate sustainable use.										
Furnish technical and legal assistance toward creation of at least 3 new municipal conservation units, and to delineate and characterize remaining forests on at least 5 private properties or settlements to create permanent conservation easements.										
Disseminate ecological-economic zoning plans, and hold at least 1 workshop in each municipality to establish consensus on shared goals and responsibilities for land use and environmental management among local stakeholders.										
Train at least 2 municipal officials and 3 civil society representatives in each municipality to access, interpret and use remote sensing data, and to carry out biodiversity inventory, monitoring and conflict resolution through modular courses in Juruena (years 2 and 3) and in one other municipality (years 5 and 6).										
Undertake participatory biodiversity monitoring exercises in areas under threat identified during the initial baseline assessment, by the end of years 4 and 7.										

OBJECTIVES / ACTIVITIES	**YEAR 3**		**YEAR 4**		**YEAR 5**		**YEAR 6**		**YEAR 7**	
Plan and provide technical support to establish an "early warning system" with a network of local residents through 1 workshop in each municipality and annual network support meetings thereafter.										
Train at least 10 local primary schoolteachers, NGOs and municipal staff in environmental education techniques through 1 didactic skills workshop in each municipality.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
OBJECTIVE 2: Pilot sites demonstrating biodiversity-enhancing and NTFP-enriched agrosilvopastoral systems are established and disseminated with active involvement of small farmer colonists.										
Conduct a detailed baseline assessment of current socio-economic conditions and trends in the region, and of the sustainability of current production practices.										
Ensure that areas apt for agroforestry systems establishment are identified in municipal ecological-economic zoning plans.										
Prepare a study to identify NTFP suitable for integration with agroforestry systems and derived from native resources, based on the PDF-B and biodiversity inventory. (Review the basic step)										
Define alternatives agrosilvopastoral models and project demonstration techniques.										
Review the project communication strategy reports and drafts divulgation materials.										
Train at least 10 local residents in each municipality to demarcate seed-bearing trees, collect and condition seeds of native species (timber and NTFP) for seedling production in local nurseries through at least 5 field workshops.										
Conduct at least 1 practical agroforestry-training course including DU field days with at least 25 participants annually in each project municipality.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
Select participating farmers in each municipality and enter into long-term agreements for DU implementation, including shared provision of inputs.										
Accompany DU progress, through monthly field visits, registering input and resource usage, as well as factors affecting seedling survival and performance including socio-economic conditions.										
Contract 2 interns from each municipality, for placement in 6-month internships, training them to impart agroforestry practices to their families and neighbors.										
Demarcate and establish baseline conditions in at least 2 monitoring plots in each municipality for comparison of agroforestry treatment effects, and undertake annual assessment of biodiversity and socio-economic impacts of DU's.										
Install 5 local nurseries for native tree seedling production in collaboration with partner institutions and farmers.										
Produce at least 200,000 seedlings/yr for reforestation and establishment of agroforestry DUs.										
Provide technical assistance toward establishment of 5 municipal watershed management programs.										
Evaluate and disseminate results of agroforestry trials, through local field days.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
Organize a regional of Brazil nut harvesting in the Guariba-Roosevelt RESEX, and evaluate community organizational capacity for production and processing.										
Organize other timber products regional harvesting										
Investigate and test potential markets with samples of agroforestry products and NTFP, analyze financial viability and propose techniques for community management, harvesting, and processing of agroforestry products and NTFP.										
Provide legal and technical assistance to rural producer associations toward formation of at least 3 local and 1 regional cooperative, to facilitate marketing.										
Furnish training for at least 8 cooperative managers and financial staff in marketing opportunities and strategies, and in administrative procedures.										
Prepare an assessment of certification criteria for agroforestry and NTFP management, in consultation with accredited organs, identifying adoption barriers.										
Assist at least 3 producer associations to identify and contract recognized certification organs to obtain pre-certification assessments of production practices.										

OBJECTIVES / ACTIVITIES	**YEAR 3**		**YEAR 4**		**YEAR 5**		**YEAR 6**		**YEAR 7**	
Train 1 manager of at least 3 producer associations on procedures for conducting periodic audits to ensure and maintain product quality and credibility.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
OBJECTIVE 3: Pilot sites demonstrating sustainable forest management are established and disseminated in the project area with active participation of timber operators.										
Conduct a rapid diagnosis of existing management plans, production technology and technical capacity of field teams with at least 1 timber enterprise in each municipality to define required interventions.										
Ensure that areas apt for sustainable forest management are identified in municipal ecological-economic zoning plans.										
Visit at least 2 timber enterprises already certified or engaged in the certification process in the Amazon with managers of regional timber companies.										
Define criteria for sustainable forest management models and project demonstration techniques.										
Prepare a project communication strategy report and draft divulgation materials review.										
Select partner enterprises to establish sustainable forest management DUs, and enter into long-term agreements, including shared provision of inputs.										
Delimit permanent biodiversity protection areas on all selected properties, conduct pre-harvest commercial and biodiversity inventories, establishing monitoring plots.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
Provide technical assistance to each partner enterprise in pre-harvest planning, including preservation of seed-bearing trees and critical habitat, vine cutting, felling direction, road and patio layout to minimize harvest impact.										
Provide technical assistance toward post-harvest treatments, including enrichment with NTFP and timber species, as well as in nursery establishment.										
Conduct 1 training session in each municipality for forest enterprise managers and directors and 1 technical session for regional foresters.										
Conduct 1 training session and field demonstration annually for machine and chainsaw operators.										
Evaluate and disseminate results of sustainable forest management trials through field days with participating timber enterprises.										
Conduct a review of assessment and monitoring criteria for sustainable forest management in consultation with accredited certifying institutions.										
Prepare a report on barriers to certification in the project region, identifying necessary investments and market prospects.										

OBJECTIVES / ACTIVITIES	YEAR 3		YEAR 4		YEAR 5		YEAR 6		YEAR 7	
Organize 1 workshop annually regarding specialized timber markets, available financing and incentives toward sustainable forest management meeting certification criteria.										
Provide assistance to at least 3 timber enterprise managers and local foresters to identify and contract pre-certification assessments to adapt their operations toward sustainable forest management criteria.										
Train managers and local foresters associated with at least 3 timber enterprises to conduct periodic audits to ensure maintenance of product quality and credibility.										

J. BUDGET

1. GEF/CO-FINANCING BUDGET BY RESULT

	GEF	CO-FINANCING	PROJECT TOTAL
OBJECTIVE 1: ECOLOGICAL-ECONOMIC ZONING			
Result 1.1 - Plans elaborated and disseminated			
Full-time project personnel	326,644	400,000	726,644
Short-Term & subcontracts	279,420	150,000	429,420
Mission costs	25,000		25,000
Equipment	64,507	100,000	164,507
Supplies and fuel	99,000	100,000	199,000
Services and travel expenses	220,679	235,295	455,974
Sub-Total Result 1.1	**1,015,250**	**985,295**	**2,000,545**
Result 1.2 - Stakeholders enabled to implement plans			
Full-time project personnel	326,644	400,000	726,644
Short-Term and subcontracts	284,104	150,000	429,420
Mission costs	25,000		25,000
Equipment	64,507	100,000	264,507
Supplies and Fuel	99,000	100,000	399,000
Services and travel expenses	220,679	235,295	655,974
Sub-Total Result 1.2	**1,019,935**	**985,295**	**2,005,229**
SUB-TOTAL OBJECTIVE 1	**2,035,185**	**1,970,590**	**4,005,774**
Sources of Co-Financing (see Annex V for details)		State govt.: 764,706 IBAMA: 50,000 Municipal govts.: 705,884 ONF/Peugeot: 450,000	

OBJECTIVE 2: AGROFORESTRY SYSTEM DEMOS	GEF	CO-FINANCING	PROJECT TOTAL
Result 2.1 - Operational plan developed			
Full-time project personnel	217,763	100,000	317,763
Short-Term and subcontracts	169,503	50,000	219,503
Mission costs	41,667		41,667
Equipment	29,802	200,000	229,802
Supplies and Fuel	66,000	100,000	166,000
Services and travel expenses	174,068	100,000	274,068
Sub-Total Result 2.1	**698,803**	**550,000**	**1,248,803**
Result 2.2 - Demonstration units installed / monitored			
Full-time project personnel	217,763	200,000	417,763
Short-term and subcontracts (including nurseries)	333,020	250,000	583,020
Mission costs	41,667		41,667
Land and Equipment	29,802	1,425,000	1,454,802
Supplies and Fuel	66,000	1,000,000	1,066,000
Services and travel expenses	174,068	265,294	439,362
Sub-Total Result 2.2	**862,320**	**3,140,294**	**4,002,614**
Result 2.3 – Certification and ecomarketing			
Full-time project personnel	217,763	150,000	367,763
Short-term and subcontracts	154,420	205,000	359,420
Mission costs	41,667		41,667
Equipment	29,802	150,000	179,802
Supplies and Fuel	66,000	100,000	166,000
Services and travel expenses	174,068	75,000	249,068
Sub-Total Result 2.3	**683,720**	**680,000**	**1,363,720**
SUB-TOTAL OBJECTIVE 2	**2,244,843**	**4,490,294**	**6,615,137**
Sources of Co-Financing (see Annex V for details)		INCRA: 1,100,000 CNPT: 55,000 ONF/Peugeot: 3,000,000 ADERJUR: 335,294	

OBJECTIVE 3: SUSTAINABLE FORESTRY DEMOS	GEF	CO-FINANCING	PROJECT TOTAL
Result 3.1 - Operational plan developed			
Full-time project personnel	217,763	100,000	317,763
Short-term and subcontracts	144,253	75,000	219,253
Mission costs	41,667		41,667
Equipment	29,802	25,000	54,802
Supplies and Fuel	66,000	50,000	116,000
Services and travel expenses	180,568	150,000	330,568
Sub-Total Result 3.1	**680,053**	**400,000**	**1,080,053**
Result 3.2 – Demonstration units installed / monitored			
Full-time project personnel	217,763	100,000	317,763
Short-term and subcontracts	207,770	150,000	357,770
Mission costs	41,667		41,667
Equipment	29,802	750,000	779,802
Supplies and Fuel	66,000	235,000	301,000
Services and travel expenses	180,568	353,235	533,803
Sub-Total Result 3.2	**743,569**	**1,588.235**	**2,331,805**
Result 3.3 – Certification and ecomarketing			
Full-time project personnel	217,763	100,000	317,763
Short-Term contracts and subcontracts	145,420	150,000	295,420
Mission costs	41,667		41,667
Equipment	29,802	200,000	229,802
Supplies and Fuel	66,000	100,000	166,000
Services and travel expenses	180,568	50,000	230,568
Sub-Total Result 3.3	**681,219**	**600,000**	**1,281,220**
SUB-TOTAL OBJECTIVE 3	**2,104,841**	**2,588,235**	**4,693,078**
Sources of Co-Financing (see Annex V for details)		Axial Bank: 2,000,000 Rohden Lignea: 588,235	
TOTAL PROJECT (not including PDF-B)	**6,704,112**	**9,049,119**	**15,753,231**

2. UNDP BUDGET: GEF RESOURCES

BRA/00/G31 - Northwestern Mato Grosso
Budget " A"

Main Source of Funds: 1G - Global Environment Trust Fund
Executing Agency: NEX - National Execution

Sbln	Description	Implementing	Funding		Total	2000	2001	2002	2003	2004	2005	2006
010	PERSONNEL											
011	International Consultants											
011.01	International Consultants	NEX		Net Amount	90,000	5,000	45,000		40,000			
				Total	90,000	5,000	45,000		40,000			
011.99	Line Total	----------		Net Amount	90,000	5,000	45,000		40,000			
				Total	90,000	5,000	45,000		40,000			
013	Administrative Support											
013.01	Administrative Support	NEX		Net Amount	513,600	6,720	127,680	67,200	78,000	78,000	78,000	78,000
				Total	513,600	6,720	127,680	67,200	78,000	78,000	78,000	78,000
013.99	Line Total	----------		Net Amount	513,600	6,720	127,680	67,200	78,000	78,000	78,000	78,000
				Total	513,600	6,720	127,680	67,200	78,000	78,000	78,000	78,000
015	Monitoring and Evaluation											
015.01	Duty Travel	NEX		Net Amount	689,500	9,850	187,150	98,500	98,500	98,500	98,500	98,500
				Total	689,500	9,850	187,150	98,500	98,500	98,500	98,500	98,500
015.99	Line Total	----------		Net Amount	689,500	9,850	187,150	98,500	98,500	98,500	98,500	98,500
				Total	689,500	9,850	187,150	98,500	98,500	98,500	98,500	98,500

016	Mission Costs									
016.01	Official Travel	NEX	Net Amount	200,000	3,000	27,000	60,000		50,000	60,000
			Total	200,000	3,000	27,000	60,000		50,000	60,000
016.71	Mission Costs	NEX	Net Amount	161,393	2,200	41,800	22,000	22,000	22,000	22,000	29,393
			Total	161,393	2,200	41,800	22,000	22,000	22,000	22,000	29,393
016.99	Line Total	--------- -	Net Amount	361,393	5,200	68,800	82,000	22,000	72,000	22,000	89,393
			Total	361,393	5,200	68,800	82,000	22,000	72,000	22,000	89,393
017	National Consultants									
017.01	National Consultants	NEX	Net Amount	2,604,472	38,605	678,484	311,043	445,335	390,335	370,335	370,335
			Total	2,604,472	38,605	678,484	311,043	445,335	390,335	370,335	370,335
017.99	Line Total	--------- -	Net Amount	2,604,472	38,605	678,484	311,043	445,335	390,335	370,335	370,335
			Total	2,604,472	38,605	678,484	311,043	445,335	390,335	370,335	370,335
019	PROJECT PERSONNEL TOTAL	--------- -	Net Amount	4,258,965	65,375	1,107,114	558,743	683,835	638,835	568,835	636,228
			Total	,258,965	65,375	1,107,114	558,743	683,835	638,835	568,835	636,228
020	CONTRACTS									
021	Contract A									
021.01	Subcontracts	NEX	Net Amount	469,700	9,440	134,360	44,400	106,000	66,000	36,000	73,500
			Total	469,700	9,440	134,360	44,400	106,000	66,000	36,000	73,500
021.99	Line Total	--------- -	Net Amount	469,700	9,440	134,360	44,400	106,000	66,000	36,000	73,500
			Total	469,700	9,440	134,360	44,400	106,000	66,000	36,000	73,500
022	Contract B									
022.71	NEX Support	NEX	Net Amount	64,463	1,004	16,479	7,419	12,187	9,373	8,373	9,628
			Total	64,463	1,004	16,479	7,419	12,187	9,373	8,373	9,628
022.99	Line Total	--------- -	Net Amount	64,463	1,004	16,479	7,419	12,187	9,373	8,373	9,628
			Total	64,463	1,004	16,479	7,419	12,187	9,373	8,373	9,628

	SUBCONTRACTS	---------	Net							
029	TOTAL	-	Amount	534,163	10,444	150,839	51,819	118,187	75,373	44,373	83,128
			Total	534,163	10,444	150,839	51,819	118,187	75,373	44,373	83,128
040	EQUIPMENT										
045	Equipment										
	Expendable		Net								
045.01	Equipment	NEX	Amount	587,000	6,200	123,800	59,000	149,000	83,000	83,000	83,000
			Total	587,000	6,200	123,800	59,000	149,000	83,000	83,000	83,000
	Non-Expendable		Net								
045.02	Equipment	NEX	Amount	308,183	15,368	145,131		147,684			
			Total	308,183	15,368	145,131		147,684			
			Net								
045.03	Operations	NEX	Amount	193,388	3,013	49,437	22,256	36,562	28,119	25,118	28,883
			Total	193,388	3,013	49,437	22,256	36,562	28,119	25,118	28,883
	Equipment -		Net								
045.04	Maintenance	NEX	Amount	814,613	3,113	135,583	78,720	131,203	148,469	148,469	169,056
			Total	814,613	3,113	135,583	78,720	131,203	148,469	148,469	169,056
		---------	Net								
045.99	Line Total	-	Amount	1,903,184	27,694	453,951	159,976	464,449	259,588	256,587	280,939
			Total	1,903,184	27,694	453,951	159,976	464,449	259,588	256,587	280,939
	EQUIPMENT	---------	Net								
049	TOTAL	-	Amount	1,903,184	27,694	453,951	159,976	464,449	259,588	256,587	280,939
			Total	1,903,184	27,694	453,951	159,976	464,449	259,588	256,587	280,939
050	MISCELLANEOUS										
053	Sundries										
			Net								
053.01	Sundries	NEX	Amount	7,800	900	1,900	1,000	1,000	1,000	1,000	1,000
			Total	7,800	900	1,900	1,000	1,000	1,000	1,000	1,000
		---------	Net								
053.99	Line Total	-	Amount	7,800	900	1,900	1,000	1,000	1,000	1,000	1,000
			Total	7,800	900	1,900	1,000	1,000	1,000	1,000	1,000
	MISCELLANEOU	---------	Net								
059	S TOTAL	-	Amount	7,800	900	1,900	1,000	1,000	1,000	1,000	1,000
			Total	7,800	900	1,900	1,000	1,000	1,000	1,000	1,000
		---------	Net								
099	BUDGET TOTAL	-	Amount	6,704,112	104,413	1,713,804	771,538	1,267,471	974,796	870,795	1,001,295
			Total	6,704,112	104,413	1,713,804	771,538	1,267,471	974,796	870,795	1,001,295

BRA/00/G31 - Northwestern Mato Grosso
Budget " A"

Main Source of Funds: 1G - Global Environment Trust Fund
Executing Agency: NEX - National Execution

Sbln	Donor	Funding		Total	2000	2001	2002	2003	2004	2005	2006
999			Net Contrib.	6,704,112	104,413	1,713,804	771,538	1,267,471	974,796	870,795	1,001,295
			Total	6,704,112	104,413	1,713,804	771,538	1,267,471	974,796	870,795	1,001,295

ANNEX I: INCREMENTAL COST ANALYSIS

Broad Development Goals

1. The Brazilian Constitution of 1988 defines the Amazon forest as a "national patrimony" and thus subject to public control to avert further loss. The government reaffirmed its position on biodiversity conservation by ratifying the *Convention on Biological Diversity* in February 1994. As a response to global concern over Amazonian burning, the Ministry of the Environment (MMA) is coordinating the Pilot Program for the Conservation of the Brazilian Tropical Forests, (PPG-7) and the National Environmental Program (PNMA), thus providing opportunities for state and local municipal governments and NGOs to become partners in the execution of projects aimed at environmental management, conservation and sustainable use. The Constitution also called for municipal land use control subject to a Master Plan (*Plano Diretor*), and a 1997 ruling of the National Environmental Council (CONAMA) allows environmental review and licensing by municipal governments. Government has also pursued Ecological-Economic Zoning (EEZ) to discipline private land use consistent with resource suitability. These instruments offer policy tools to strengthen local environmental protection and management capacity.

2. Although financial incentives for new pasture establishment in the Amazon were eliminated in 1988, reducing one element of deforestation pressure, the resurgence of an agrarian reform movement has forced government to distribute public and private holdings in the region to landless families. The inherent tension between these development prerogatives and biodiversity conservation suggests that establishing and maintaining protected areas must be complemented with viable alternatives to predatory agricultural, pastoral and timber extraction practices that enhance the potential of conserving biodiversity within productive landscapes and reduce pressures for conversion.

Global Environmental Objective

3. The global environmental objective of the proposed project is to conserve and promote sustainable use of biodiversity in the northwest region of the state of Mato Grosso, an area that lies on the fringe of the arc formed by the principal swath of deforestation in the Brazilian Amazon (see Annex VIII, Map 2). This area exhibits biodiversity that is substantially different from that of well-explored areas elsewhere in the Amazon[10]. Composition of the forest includes rare and useful species such as *Pterodon* spp. The local fauna is highly diversified and many of the invertebrates are considered to be endemic to this area. The number of mammals and bird species is also remarkable, with over 200 species of birds detected. Of major significance among the mammals are *Tapirus terrestris* (tapir), *Lutra* sp. (otter), *Pteronura braziliensis* (giant river otter), *Ateles* sp. (spider monkey), *Lagotrix* sp. (big bellied woolly monkey), *Ozotocerus bezoarticus* (pampas deer) and *Mazama americana*, *Panthera onça* (jaguar) and *Felis concolor* (suçuarana, puma).

Baseline

4. Deforestation and biodiversity loss in the Amazon basin has by no means been homogenous, and, over the last few years, one of the areas where the process has been most pronounced includes the northwest region of the state of Mato Grosso. Mato Grosso has the dubious distinction of being the state with the highest rate of deforestation in Brazil: averaging 1.3% per year from 1989 to 1996. The primary proximate causes of this high rate of deforestation are colonization by people from outside the state, subsequent slash-and-burn agropastoral activities, forest fires, inappropriate timber extraction, and associated soil degradation.

[10] Confirmed through timber inventories conducted by IPN in Juruena, as well as by the Humboldt Expedition in Aripuanã. See also, Governo de Mato Grosso (1992) and Fernandes (1992).

Land use patterns

5. In the proposed project area encompassing the five municipalities of Aripuanã, Castanheira, Cotriguaçu, Juína and Juruena (see Annex VIII, Maps 1 and 2), approximately 80% of land is state or private land under intact forest cover and 20% is private land under exploitation for agropastoral activities and timber extraction[11]. Private land under exploitation is mainly owned by recent colonists coming from regions that are ecologically very different from the project area. Over the years, the allocation of land to various uses has not taken place through appropriate planning that takes into account the capacity of soils in different parts to support a particular land use, thus threatening the long-term viability of settlements due to land degradation.

6. Given the importance of such land use planning to the long-term conservation and management of natural resources, the state of Mato Grosso is near completing a macro zoning scheme for the state (1:250,000), with support from PRODEAGRO. While this is an important first step, the macro-level zoning scheme needs to be further refined at a micro scale in order to be useful in managing resources at a municipal level in the project area. Such an exercise is planned by the state agency FEMA as a pilot (micro-level) zoning and environmental management program under the PPG-7 initiative[12]. This project, titled Project of Integrated Environmental Management (PGAI), has already begun and includes ecological-economic zoning, associated capacity-building, monitoring deviations from the recommendations of the EEZ, and environmental control that includes establishment of inspection routines, improvement of registry and environmental licensing processes. PPG-7 is contributing US$6.05 million to this project. The state government and municipal governments will also contribute personnel to this project (estimated at US$ 685,000) and NGOs and civil society organizations will provide in-kind support amounting to roughly US$ 30,000.

Agropastoral activities

7. The land use patterns of small holders include slash-and-burn practices to produce rice, beans, and cassava for local consumption on lots of 40 to 120 hectares, and cattle rearing on lots of 1,000 to 20,000 hectares. As productivity declines on agricultural land farmers are forced to move to other forested areas. Due to a lack of alternatives to slash-and-burn cultivation and cattle rearing, small holders in the area are likely to continue with destructive practices that lead to deforestation and biodiversity loss. Furthermore, the National Institute for Colonization and Land Reform (INCRA) which is responsible for the majority of new settlements in the Amazon plans to allocate approximately 1.7% of the total project area to new settlements (currently only 0.5% is occupied by colonist farmlands). Baseline trends vis-à-vis destructive agropastoral practices are likely to continue unabated, unless more emphasis is laid on alternatives such as agrosilvopastoral systems and non-timber forest products. In fact, given that INCRA is looking to address the adverse environmental effects of its settlements program, in response to criticism, this is an opportune moment to test and demonstrate the potential of such alternatives.

8. Agrosilvopastoral systems could provide a viable alternative to the current practices of small holders. This has been demonstrated by IPN on a 100-hectare plot in Juruena through a series of multi-year trials of an agrosilvopastoral model adapted to local environmental conditions, farmers' capabilities and income requirements. The IPN model (see Annex VI) requires a maximum of 20 hectares to be available for the application of a viable agrosilvopastoral system, with the rest being left as untouched forestland. The adoption of this model on an average plot size of 100 hectares will result in almost 80% being left

[11] See Governo de Mato Grosso (1997) Programa de Gestão Ambiental Integrada (PGAI) da Área Noroeste do Estado de Mato Grosso. Cuiabá; F.B. Fernandes (1992) "Meio Biótico, levantamento da vegetação original e ocupação do Município de Juruena-MT. Relatório Final da Análise Ambiental, Projeto Juruena, Vol. II; Pro-Natura/ICI-Zeneca (1991) Juruena Project.

[12] This pilot exercise will encompass the five municipalities of Aripuaná, Cotriguaçu, Castanheira, Juína and Juruena – the project area.

untouched. Even at the lower end of the range (farm size of 40 hectares), the IPN model will result in 50% of the farm being left untouched[13]. The adoption of this model needs to be encouraged through additional demonstration sites, technical assistance, and material incentives.

9. Under the State's PGAI program some resources (US$ 484,845) are earmarked for promoting agroforestry in settlements and for the recuperation of degraded lands. Along with these efforts, new settlers in the area can access credit through INCRA's tranche of the federally funded PRONAF. Some resources from the latter can be expected to go towards agro-environmental management in new settlements and host communities (US$300,000). It is estimated that municipal governments in the project area will allocate US$ 505,884 and local producers US$ 335,294 (in kind labor) over the project's life to agroforestry activities. However, there are several barriers to the adoption of the alternative agrosilvopastoral model and under the baseline these barriers will continue to impede adoption of the alternative system that can enhance biodiversity values within productive landscapes and also allow larger blocks of contiguous areas on private lands to remain under forest cover.

Timber extraction

10. Timber extraction by private operators takes place on land units of 25,000 hectares or more and is a temporary activity. Extraction is limited to 6-10 species and takes place in several cycles resulting in increased damage to the forest and biodiversity. The Forest Statute (1965) permits timber extraction on uncleared private and public lands subject to a management plan. These management plans are, however, restricted to a list of species found on the property and the volume of each to be removed over a given period, with little effective monitoring and enforcement. Once the forest resource is exhausted, the industry moves to new areas or disappears, and settlers occupy the land. The temporary nature of timber extraction implies that timber operators are not involved in permanent sustainable forest management, except for one case, Rohden Lignea S. A. These practices will, however, have to change with stricter criteria for forest management plans coming in to force in September 1998. Management plans to be approved by IBAMA must include the following elements: characterization of the physical and biological environment; determination of existing stocks; intensity of exploitation compatible with the capacity of the site; promotion of natural regeneration; adoption of appropriate silviculture techniques; adoption of appropriate exploitation systems; monitoring of development of the remaining forest; guarantee of technical-economic viability and of social benefits; guarantee of mitigative environmental measures. However, there are no specific criteria for monitoring or protection of biodiversity and experience and know-how with applying these criteria is scarce in the project area.

11. The largest timber operator in the project area, Rohden Lignea will undertake limited efforts at sustainable logging. This includes an estimated expenditure of US$2,000,000 on inventory and operations, including equipment, machinery, technical personnel, and consultants. Some timber operators have expressed interest in non-timber forest products (such as copaiba resin and palm hearts). However, as yet no efforts are planned to protect non-timber or other biological resources during timber harvesting, except through demonstrations initiated with IPN.

12. The federal agency, IBAMA, will incur field expenses for IBAMA technicians in each of the five municipalities, responsible for enforcement and authorization of deforestation, burning, wood harvest, commercialization of forest products, forest management and other attributes associated with environmental monitoring, to the tune of US$1,500,000. This also includes additional field expenses for enforcement missions carried out in the region periodically with support of personnel and equipment from other jurisdictions (such as the current programs "Pró-Arco" and "Operation Macauã", in which IBAMA technicians and enforcement staff, with support from the civil and military police forces and using satellite imagery, cover the region to repress unauthorized cutting and burning activity).

[13] The model will therefore more than assist in meeting the requirement by law that 50% of private land holdings be under intact forests.

Gaps in baseline

13. The factors intermediating the process from colonization to destruction are primarily (i) the absence of a coherent land use planning framework (coordinated across municipalities) that can curtail unplanned settlement and development in the project area by promoting a melded mosaic of land uses (including conservation and sustainable use); a lack of local experience with and expertise in viable non-destructive, biodiversity-conserving alternatives to current agropastoral and timber extraction practices, and (iii) limited capacity to promote, enforce, and monitor the adoption of these alternatives by those residing in the project area. Under the baseline, the socio-economic development of the northwest region of Mato Grosso will proceed along conventional lines with little emphasis being laid on integrating biodiversity conservation objectives in land use planning, agropastoral activities and timber extraction.

GEF Alternative

14. In order to influence baseline trends vis-à-vis biodiversity loss in the project area there is a need for an alternative strategy that promotes an integrated package of alternatives such as agrosilvopastoral and sustainable forest management systems (with NTFPs gradually being integrated into these systems and enhancing their value[14]), along with municipal-level ecological-economic zoning that explicitly includes biodiversity conservation objectives. This includes some activities that address unsustainable trends in the current situation (move from realistic baseline to sustainable development baseline), and others that explicitly integrate biodiversity conservation measures into the sustainable development baseline.

15. While the realistic baseline includes some measures that are important in ensuring better environmental management, there is considerable scope to strengthen and therefore maximize the impact through additional actions. The private sector (ONF/Peugeot, Banco Axial), state and municipal governments, INCRA, CNPT, and local producers will finance these additional measures aimed at better environmental management. These measures must be in place for securing biodiversity conservation efforts and constitute the sustainable development baseline.

16. Activities to be implemented as part of the sustainable development baseline include building capacity of local government representatives and civil organizations to enable better planning and enforcement of EEZ plans by making available essential equipment and targeted training in data collection, monitoring, and interpretation of GIS data; production inputs for promoting agrosilvopastoral systems in the project area; and trial demonstrations of low-impact logging.

17. In order to secure biodiversity conservation the project will undertake the following additional measures (detailed explanation is provided in the main brief): (i) a biodiversity overlay on micro-level EEZ; (ii) remove knowledge and incentive barriers to the adoption of agrosilvopastoral systems; and (iii) undertaking demonstrations of how biodiversity parameters can be included in sustainable logging systems.

Scope of Analysis

18. The scope of the incremental cost analysis covers the northwest part of the state of Mato Grosso, encompassing the five municipalities of Juruena, Cotriguaçu, Aripuanã, Castanheira, and Juína. This geographical scope represents the forest frontier of the southern Amazon, an area that typifies deforestation and biodiversity loss prompted by settlers who come from ecologically very different areas. The analysis has been done for the seven-year period of the proposed project and considers all actions necessary to remove threats to the forest ecosystem in the project area.

19. There are likely to be some incidental domestic benefits from the intervention, once barriers to adoption of agrosilvopastoral and sustainable forest management systems are removed. However given the uncertain nature of these benefits GEF resources are needed to demonstrate their viability and provide the

[14] PDF B activities indicated that the promise of NTFPs alone cannot act to deter current unsustainable trends for several reasons, as outlined in paragraphs 21 and 22 of the main brief and in Annex VII. The PDF B identified some NTFPs that could prove successful if integrated into this broader strategy (Brazil nuts, Copaiba and Jatoba resins).

catalytic financing necessary to promote wide adoption and replication. Nevertheless, significant cofinancing has been leveraged to implement the alternative strategy.

INCREMENTAL COST MATRIX

	Baseline (B)	**Alternative (A)**	**Increment (A-SDB)**
Global benefits	Deforestation and biodiversity loss continue unabated in northwest Mato Grosso (along the southern frontier of the Amazon) primarily due to uncontrolled slash-and-burn agropastoral occupation and forest mining.	Capacity of municipal organizations and local civil society organizations to incorporate biodiversity conservation parameters into land use planning and to monitor and enforce these plans. Demonstration of biodiversity-enhancing agrosilvopastoral systems and associated training improves prospects for adoption of alternatives to current slash-and-burn practices by local colonists. Demonstrations and training along with incentive frameworks on integrating biodiversity conservation parameters into forest management plans increase prospects for adoption by local timber operators.	Conservation of soil biodiversity, critical habitat and improvements in survival probabilities of vulnerable & threatened flora and fauna result from promoting a bioregional approach that addresses some of the challenges in integrating conservation in the productive landscape.
Domestic benefits	Productive potential of the natural resource base (land, timber, minerals) jeopardized by minimal control on productive activities and lack of sustainable logging practices; a micro-level EEZ plan is under design.	Improved capacity of municipal governments and civil society organizations to plan, monitor, and enforce the EEZ; and barriers to sustainable logging addressed through training and demonstration sites.	Long-term productive potential of natural resource base is enhanced.
Costs/ Activities			
Ecological-economic zoning	Micro-level zoning exercise primarily to identify areas suitable for production activities namely, settlements, managed timber extraction & mining; environmental legislation & the building of monitoring & control capacities to promote effective environmental management (PGAI). Sub total Baseline (USD 5,563,488)	Baseline micro-level zoning exercise will be complemented with activities to enhance capacity of local government representatives and civil organizations to plan, gazette, enforce EEZ plans by making available essential equipment and training in data collection, monitoring, and interpretation of GIS data, through cofinancing. (USD 2,149,616) Baseline activities and resources complemented with technical assistance in survey, assessment & demarcation of critical areas for biodiversity conservation; training to civil organizations in biodiversity inventorying, monitoring & field observations; planning of land use within groups of properties so as to maintain contiguous blocks of intact forest cover & reduce fragmentation; identify areas with greater occurrence of non-timber forest species; policy assessments, preparation of technical options & legal advice to landowners & municipal governments interested in setting aside land as permanent reserves and securing appropriate fiscal incentives. (USD 2,136,944) Sub total Alternative (USD 9,850,048)	Increment: (USD 4,286,560) Of which, GEF: 2,136,944 ONF/Peugeot:1,184,910 State govt.: 764,706 Municipal govts.:200,000
Agroforestry &	Modest investments for agroforestry by	Baseline programs will be complemented with demonstration sites on	Increment: (USD 5,485,807)

	Baseline (B)	**Alternative (A)**	**Increment (A-SDB)**
silvopastoral systems	PGAI in Aripuaña, Cotriguaçu, Castanheira, w/o integration & sustainable use of NTFPs in this system. (USD 484,845) Limited amount of PRONAF credit is likely to be allocated toward investment in agro-environmental management in new settlements & host communities. (USD 300,000) Sub total Baseline (USD 784,845)	farmers' lands, including in new INCRA settlement areas & associated technical training to remove barriers to adoption. Introduction of sustainable harvesting of NTFPs into agrosilvopastoral systems, including training in NTFP collection system planning and management, investigations on market potential, sustainable harvesting and management technology. (USD 5,485,807) Sub total Alternative (USD 6,270,652)	Of which, GEF: 2,357,084 ONF/Peugeot: 1,132,545 INCRA: 1,100,000 CNPT: 55,000 Municipal govts: 505,884 Local producers: 335,294
Permanent sustainable forest management	Limited efforts at sustainable logging by Rhoden Lignea on inventory & operations, including equipment, machinery, technical personnel, & consultants. (USD 2,000,000) Field expenses for IBAMA technicians in each of the five municipalities, responsible for enforcement & authorization of deforestation, burning, wood harvest, commercialization of forest products, forest management & other attributes associated with environmental monitoring. (USD 1,500,000) Sub total Baseline (USD 3,500,000)	Baseline programs will be complemented with demonstration plots in timber companies' forest properties for low-impact practices including reduced road building, pre-harvest commercial inventories & site planning, vine cutting, regeneration & enrichment with economically desirable species. (USD 3,770,780) Baseline programs will be complemented with measures targeted to identifying areas of conservation significance as set-asides in forest management plans; integration of NTFPs identified during the PDF-B (including technical assistance with planting, protection & eventual sustainable harvesting); monitoring impact of different extraction systems on the trial lot in Juruena, & also demarcate additional plots for long-term monitoring; increasing producers' knowledge & facilitating access to growing markets for certified tropical hardwoods & to FSC-accredited certification organizations; awareness raising seminars, courses & field-visits for employees & managers on themes such as tropical timber certification, sustained management principles & techniques& inventory & exploitation planning for minimum impact to biodiversity. (USD 2,210,084) Sub total Alternative (USD 9,480,864)	Increment: (USD 5,980,864) Of which, GEF: 2,210,084 ONF/Peugeot: 1,132,545 IBAMA: 50,000 Banco Axial: 2,000,000 Rohden Lignea: 588,235
Total costs	Baseline: 9,848,333	Alternative strategy: 25,601,564	Increment: 15,753,231 Of which, GEF financing: 6,704,112 Cofinancing: 9,049,119

ANNEX II: PROJECT MILESTONES OVER A 10 YEAR PERIOD

	PHASE WITH GEF FINANCING AND CO-FINANCING		Phase with only non-GEF financing
Component/ Output	**Milestones: End of Year 3**	**Milestones: End of Year 7**	**Milestones: End of Year 10**
COMPONENT 1:	**ZONING MILESTONES**	**ZONING AND PROTECTED AREAS MILESTONES**	**ZONING AND PROTECTED AREAS MILESTONES**
ECOLOGICAL-ECONOMIC ZONING AND ESTABLISHMENT AND MANAGEMENT OF PROTECTED AREAS	▪ Land use plans are developed in at least 2 municipalities (Juruena and Cotriguaçu) at a 1:100,000 scale that include zoning for biodiversity conservation and sustainable natural resource management.	▪ Land use plans are developed in the remaining 3 municipalities (Aripuanã, Castanheira and Juina). ▪ All plans are approved by the Municipal Council (*Vereadores*) of each municipality.	▪ Land use plans are in effective use by municipal governments as a basis for location of new settlements, agricultural and forest utilization projects.
	▪ Protected Areas on public lands identified in at least 2 municipalities, as part of land use plans.	▪ Protected Areas on public lands are identified in remaining 3 municipalities. ▪ New protected areas are legally established in initial 2 municipalities, management plans developed and basic PA infrastructure and human resource capacities provided, agreement on financing of recurrent costs from here on obtained.	▪ New protected areas are legally established in remaining municipalities in the NW region, management plans developed and basic PA infrastructure and human resource capacities provided, agreement on financing of recurrent costs from here on obtained.
	▪ Conservation set-asides on private lands identified in at least 2 municipalities. ▪ Current barriers and existing or proposed incentive systems (examples: property tax deductions, green VAT) to encourage large and small landholders to maintain conservation set-asides are evaluated for effectiveness.	▪ Conservation set-asides on private lands identified in remaining 3 municipalities. ▪ New incentive systems to encourage large and small landholders to maintain conservation set-asides are designed and effective existing mechanisms applied to create conservation easements on private properties in the region.	▪ New or adapted incentive systems are created through state and/or municipal law, and their effectiveness and that of existing incentive structures in protecting remaining biodiversity has been evaluated.
	▪ Buffer zones, transition zones and corridors identified (can include private and public lands) in at least 3 municipalities.	▪ Agreements are negotiated with private landholders on type of land use allowed in buffer zones, transition zones and corridors based on initial results of agrosilvopastoral and SFM demonstrations in 3 municipalities. ▪ Buffer zones, transition zones and corridors identified in remaining 2 municipalities, and initial agreements negotiated.	▪ Agreements are negotiated with private landholders on type of land use allowed in buffer zones, transition zones and corridors based on initial results of agrosilvopastoral and SFM demonstrations in all municipalities in the NW region.

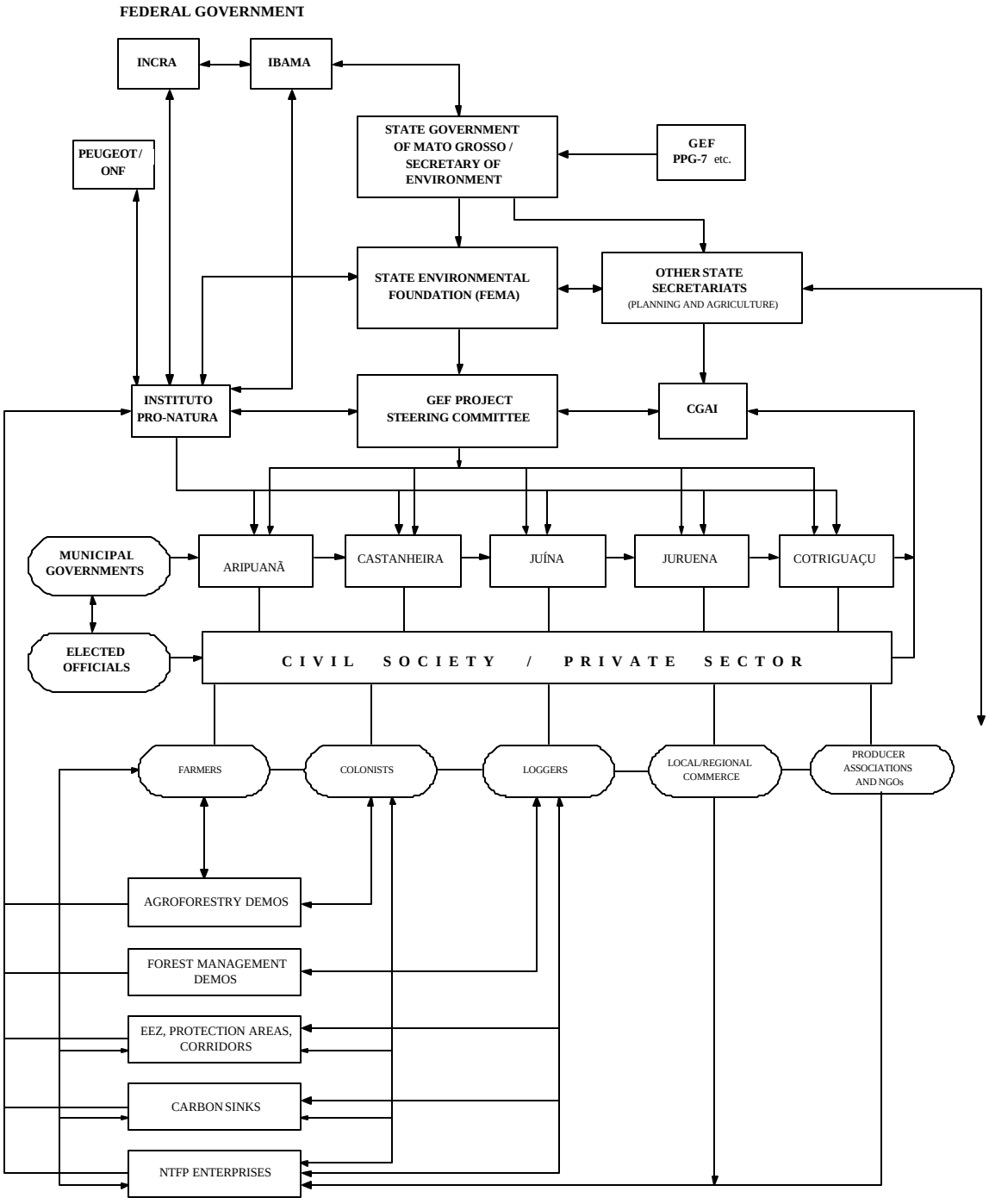
	PHASE WITH GEF FINANCING AND CO-FINANCING		**Phase with only non-GEF financing**
Component/ Output	**Milestones: End of Year 3**	**Milestones: End of Year 7**	**Milestones: End of Year 10**
	NTFP milestones	NTFP milestones	NTFP milestones
	▪ Areas where promising NTFPs (identified by PDF B) occur in relatively higher densities are identified within land use plans and zoning maps in at least 3 municipalities.	▪ Areas where promising NTFP's occur are identified within land use plans and zoning maps in remaining municipalities in NW region.	
	CAPACITY-BUILDING MILESTONES	**CAPACITY-BUILDING MILESTONES**	**CAPACITY-BUILDING MILESTONES**
	▪ Training of municipal governments and an inter-municipal network of civil organizations in collection, interpretation and use of remote sensing data (all municipalities).	▪ Legal advice provided to large and small landholders and municipal governments on setting land aside as permanent reserves.	
	▪ Training of municipal governments and an inter-municipal network of civil organizations in biodiversity inventorying, monitoring, field observations and conflict resolution (all municipalities).	▪ Municipal governments and civil organizations establish action priorities, work program, and funding requirements for long-term monitoring and protection of threats to biodiversity conservation.	▪ Municipal governments and civil organizations have secured long-term financing for long-term monitoring of threats to regional biodiversity conservation and sustainable use.
COMPONENT 2: AGROSILVOPASTORAL DEMONSTRATION SITES AND RELATED CAPACITY BUILDING			
	Demonstration site milestones	Demonstration site milestones	Technology adoption milestones
	▪ 10 demo sites on farmers' lands (each of 25 hectares) in Juruena and another 10 in Cotriguacu are established and operational.	▪ Agrosilvopastoral model is adapted based on initial results and evaluations of demo sites. ▪ Agrosilvopastoral models are adopted by farmers outside of initial demonstration areas in Juruena and Cotriguaçu.	▪ Adapt agrosilvopastoral models based on initial results from demo sites, and results extended to other adopting farmers.
	▪ Natural regeneration and forest corridor plots are established in farming areas and monitored regularly to assess recovery of flora and faunal diversity.	▪ 10 demo sites on farmers' lands (each of 25 hectares) in Aripuana, another 10 in Castanheira, and another 10 in Juina are established and operational.	▪ Agrosilvopastoral models are adopted by farmers outside of initial demonstration areas in Aripuanã, Castanheira and Juína.

	PHASE WITH GEF FINANCING AND CO-FINANCING		Phase with only non-GEF financing
Component/ Output	**Milestones: End of Year 3**	**Milestones: End of Year 7**	**Milestones: End of Year 10**
	▪ Ecological sustainability, social acceptability and economic attractiveness of models are independently evaluated.	▪ Ecological sustainability, social acceptability and economic attractiveness of models are independently evaluated.	▪ Ecological sustainability, social acceptability and economic attractiveness of models are independently evaluated
		▪ Financing to support continuation of demonstration sites and independent evaluation is identified and secured.	
	NTFP milestones	NTFP milestones	NTFP milestones
	▪ NTFPs that can be used to enrich the agrosilvopastoral demos are identified and introduced in Juruena and Cotriguacu.	▪ NTFPs that can be used to enrich the agrosilvopastoral demos are identified and introduced in Aripuana, Castanhiera and Juina.	
	▪ Market trial of Brazil Nut (in shell) completed.	▪ Pilot Brazil Nut shelling and oil extraction facilities established.	
	▪ Feasibility study for Brazil Nut shelling and oil facility completed.	▪ Market trial of shelled Brazil Nuts and Brazil Nut oil completed.	
	▪ Investigation of (a) market potential, and (b) harvest and management technology for additional NTFP completed.	▪ Investigation of (a) market potential, and (b) harvest and management technology for additional NTFP completed.	▪ Pilot facilities for processing & marketing jatoba, sangue de dragao established, based on investigations completed previously.
	▪ Financing for implementation of Brazil Nut, and other NTFP pilot processing facilities investigated with co-funders and development agencies.	▪ Pilot facilities for processing and marketing for additional NTFP are established, based on investigations completed during 1st 3 years	▪ Investigation of (a) market potential, and (b) harvest and management technology for additional NTFPs (identified during first 7-year period) completed.
	CAPACITY-BUILDING MILESTONES	**CAPACITY-BUILDING MILESTONES**	**CAPACITY-BUILDING MILESTONES**
	▪ Training center established in Juruena.	▪ Satellite training centers established in new settlement areas.	▪ Further training centers established and staffed with financing identified in previous period.
	▪ Internships for local youth from Juruena and Cotriguacu at Training Center.	▪ Internships for local youth from Aripuana, Castanheira, and Juina at Training Center.	▪ Continued training for local youth through training centers established after project completion.

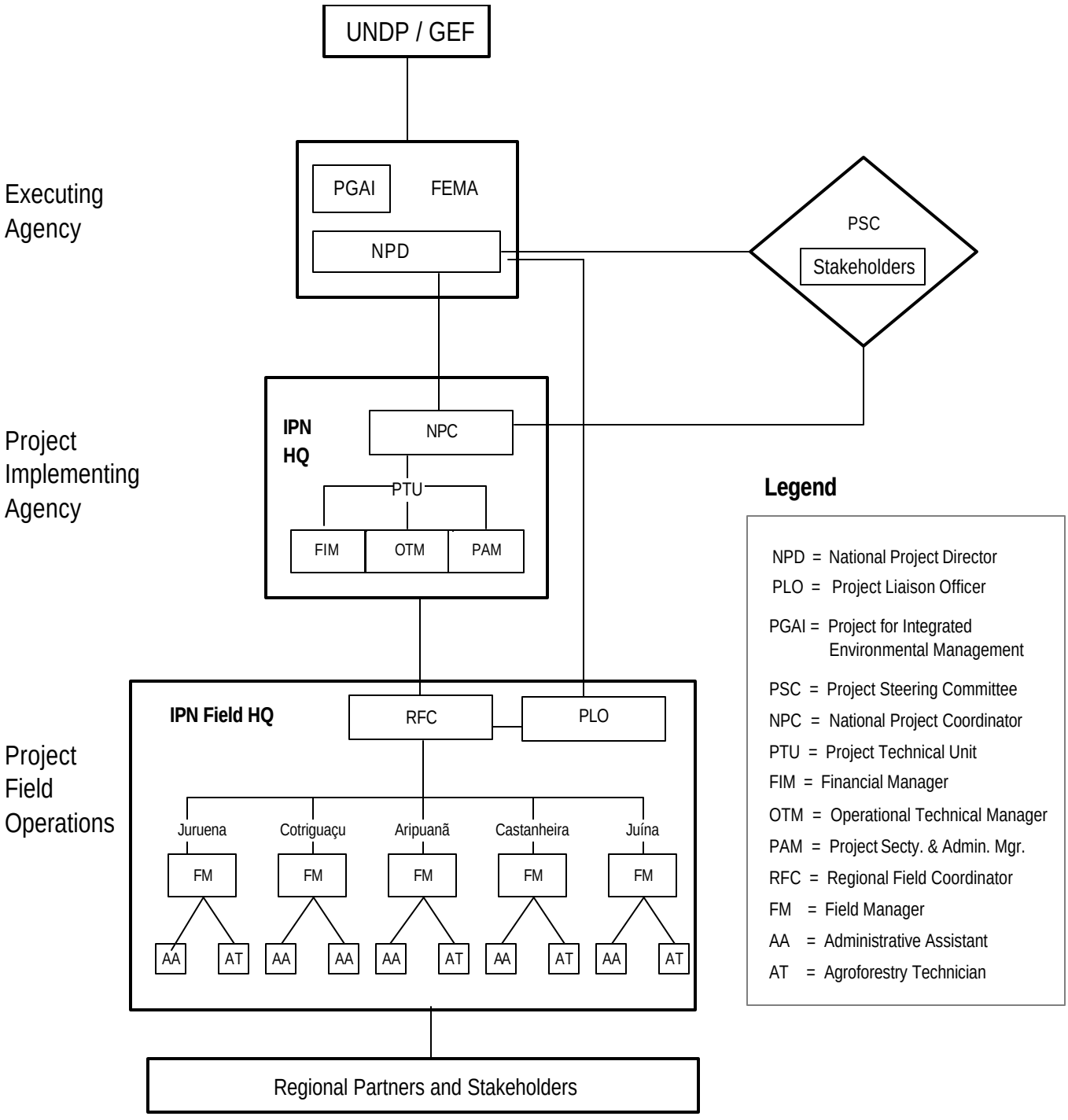
	PHASE WITH GEF FINANCING AND CO-FINANCING		**Phase with only non-GEF financing**
Component/ Output	**Milestones: End of Year 3**	**Milestones: End of Year 7**	**Milestones: End of Year 10**
	▪ Compile training material and undertake training courses in Juruena and Cotriguacu. Training targeted to local farmers and government agricultural extension workers.	▪ Revise training material based on experience in 1st 3 years and undertake training courses in Aripuana, Castanheira, and Juina. Training targeted to local farmers and government agricultural extension workers.	
	▪ Training in sustainable harvest planning, labor organization, selection, breaking and transport of Brazil Nuts (Juruena and Cotriguacu)	▪ Training in sustainable harvest planning, labor organization, selection, breaking and transport of jatobá and sangue de dragão	▪ Training in sustainable harvest planning, labor organization, selection, breaking and transport of other NTFPs identified during first 7 year period.
COMPONENT 3: SUSTAINABLE FOREST MANAGEMENT AND RELATED CAPACITY BUILDING	Demonstration site milestones • Two sustainable forest management demonstrations (averaging 100 hectares each) established in two municipalities of the NW region (Juruena and Cotriguaçu), including 100% inventories and biodiversity protective felling plans. • Forest management system established following FSC certification criteria and biodiversity overlay on areas under control of Rohden Lignea. • Natural regeneration monitoring plots are established in demonstration units. • Ecological sustainability, social acceptability and economic attractiveness of models are independently evaluated.	Demonstration site milestones • Three sustainable forest management demonstrations (averaging 100 hectares each) established in remaining three municipalities of the NW region (Aripuanã, Castanheira and Juina) • Timber enterprises involved in first 3 years of demonstration trials have successfully obtained provisional FSC certification for sustainable forest management, and have begun to access environmentally friendly markets. • Ecological sustainability, social acceptability and economic attractiveness of models are independently evaluated.	Technology adoption milestones • Timber enterprises involved in final 4 years of project through demonstration trials have successfully obtained provisional FSC certification for sustainable forest management and have begun to access environmentally friendly market options. • Timber enterprises that have not participated in the initial demonstrations have begun to adopt sustainable management practices, and actively seek information on certification and market options. • Ecological sustainability, social acceptability and economic attractiveness of models are independently evaluated.
	NTFP milestones	NTFP milestones	NTFP milestones
	• Timber management demonstrations successfully protect existing NTFP resources, and NTFP seedlings are introduced to enrich post-harvest areas.	• Timber management demonstrations successfully protect existing NTFP resources, and NTFP seedlings are introduced to enrich post-harvest areas.	• Timber enterprises have established their own nurseries to produce NTFP, and are enriching post-harvest sites systematically.

	PHASE WITH GEF FINANCING AND CO-FINANCING		Phase with only non-GEF financing
Component/ Output	**Milestones: End of Year 3**	**Milestones: End of Year 7**	**Milestones: End of Year 10**
	Capacity-building milestones	Capacity-building milestones	Capacity-building milestones
	• Training materials developed based on Prodeagro demonstration experience. • Training provided in two municipalities to timber enterprise executives, field managers and chainsaw operators regarding sustainable logging practices. • Results of demonstration activities presented in regional seminars and to sectoral representatives and government authorities in the state capital. • Timber enterprises informed of FSC certification procedures and criteria.	• Training materials revised in light of experience during first 3 years of project. • Training provided in remaining three municipalities to timber enterprise executives, field managers and chainsaw operators regarding sustainable logging practices. • Results of demonstration activities presented in regional seminars and to sectoral representatives and government authorities in the state capital. • Timber enterprises informed of FSC certification procedures and criteria.	• Continued training of timber enterprise personnel is assumed under the auspices of state and federal forest management and extension agencies.

ANNEX III: PROJECT COORDINATION ARRANGEMENTS



ANNEX IV: PROJECT CORE STAFF ORGANOGRAM



ANNEX V: CO-FINANCING DETAILS

NON-GEF PROJECT COMMITMENTS

This annex has the objective of clarifying the co-financing strategy of this project, as well as to furnish a summary of the values defined as counterpart, based on the commitments assumed by the institutions and private companies that are partners of the GEF project in NW Mato Grosso.

Since this project involves a series of actions that affect different spheres of public administration and the behavior of private economic actors and their representative associations, it necessarily involves the participation of a multiplicity of these actors in the commitments assumed to achieve the objectives of the project. Commitment letters from all the entities that participated in the preparation of the project, and that guided its implementation strategy, have been transmitted to UNDP and SEAIN.

Below are summarized the values committed, in cash and/or in goods and services, by the entities that are partners in the project, and the project objective(s) to which their support will be directed. The role of each partner agency and its synergy with the project is detailed further below. Other associated financial commitments in the "baseline" represent pre-defined values associated with projects and financing actions already in progress by other entities (PPG-7, PRONAF, etc.) and do not constitute direct contributions to project activities.

Budget Item	In Cash	In Kind	Total	Objectives		
				1	2	3
GEF - Project Financing	6,704,112	0	6,704,112	■	■	■
PDF-B	279,950	0	279,950		■	
Government of Mato Grosso	176,471	588,235	764,706	■	■	■
Prefeitura de Juruena-MT	0	176,471	176,471	■	■	
Prefeitura de Cotriguaçu-MT	0	176,471	176,471	■	■	
Prefeitura de Juína-MT	0	176,471	176,471	■	■	
Prefeitura de Castanheira-MT	0	176,471	176,471	■	■	
ADERJUR	0	335,294	335,294		■	
INCRA	529,101	570,899	1,100,000		■	
IBAMA	0	50,000	50,000	■		■
CNPT	0	55,000	55,000		■	
ONF/Peugeot	450,000	3,000,000	3,450,000	■	■	
Banco Axial	1,800,000	200,000	2,000,000			■
Rohden Lignea S.A.	117,647	470,588	588,235			■
TOTAL PROJECT	**10,057,281**	**5,975,900**	**16,033,181**			
TOTAL GEF	**6,984,062**	**0**	**6,984,062**			
TOTAL CO-FINANCING	**3,073,219**	**5,975,900**	**9,049,119**			

OBS: All values expressed in Reais were converted at an exchange rate of R$1,70 = US$1,00.
The French franc (ONF/Peugeot), was converted at a rate of FF 5,78 = US$1,00.
The municipality of Aripuanã, although supportive of the GEF project, will enter with co-financing in Year 04 of the project.

Objective	Description of Project Co-Financing Activities	Amount Committed
1. ECOLOGICAL-ECONOMIC ZONING PLANS	**FEMA** is committed "to maintain lines of communication, technical and logistical support by state personnel and institutions to favor the integrated and decentralized management of the environment in the Northwest area of the state during the period of the project's execution". FEMA will underwrite ongoing environmental management, local ecological-economic zoning, and legal-institutional assistance, and will coordinate the project with continuing activities under the PGAI.	$176,471 (in cash) $588,235 (in-kind)
	IBAMA is charged with protection of endangered flora and fauna and with deterrence and punishment of environmental crimes. IBAMA has committed its existing professional staff in the region to coordinate the project with the agency's ongoing monitoring and control activities.	$50,000 (in-kind services)
	Municipal governments of all Northwest region municipalities have committed to act as partners with Instituto Pró-Natura in the project's execution, with a particular emphasis on ecological-economic zoning, protected area delineation and protection. Municipal staff time and facilities will be furnished as required for the project's execution, in return for training and technical assistance in preparation of zoning plans.	$705,884 (in-kind goods and services)
	Friends of the Earth-Amazon Program has proposed to cooperate with the project, making the target region a focus of its "Municipal Protocol Against Fire" program, financed by the Italian Government. The program aims to mobilize local stakeholders to abide by a code of conduct for forest protection against accidental fire, and to reduce use of fire in agricultural and livestock activities.	
	ONF-Brasil which is responsible for executing the Peugeot/ONF Carbon Sink project in Juruena and Cotriguaçu, has entered into contract with IPN to support activities that will "ensure synergy between the carbon sink and regional sustainable development projects". Land capability assessment and delineation of management and protection units on the carbon sink project properties will offer a concrete demonstration of tools and techniques for the project.	$450,000 (in cash)

2. AGROFORESTRY AND NTFP DEMONSTRATIONS	**INCRA** has committed to reinforce its sustainable settlement strategy in the project area, envisioned to serve as a model for its efforts in the remainder of the Amazon region, with the objective of strengthening associations of land reform beneficiaries to administer and plan the occupation and use of land and natural resources. The Northwest area of Mato Grosso currently has 5,000 families settled in INCRA projects, and a number of new settlements are in progress or in the planning stage. INCRA will provide funds under agreement with IPN and directly to settler associations to establish training facilities, finance forest inventories and cost-sharing toward demonstration units and pilot enterprises.	$529,101 (in cash) $570,899 (in-kind goods and services)
	CNPT has committed to provide support to the project in: i) training in enterprise management; ii) medicinal plant assessment and production; iii) "living pharmacy" creation; iv) native species research; and v) training centers. CNPT personnel will also contribute to interchange with other extractive enterprises in the Amazon basin, particularly in Extractive Reserves, and with the exchange of knowledge concerning regional forest resources with forest peoples resident in the region.	$55,000 (in-kind services)
	SAAF, the Mato Grosso State Secretariat of Agriculture and Land Tenure Affairs and its extension arm EMPAER, will coordinate its activities in support of agricultural and livestock production with the agroforestry demonstration activities.	
	ONF-Brasil has acquired land for permanent demonstration of native species reforestation on degraded pastures in the project region, including models of recuperation of degraded lands management of secondary forests, and conservation of remaining natural forests. This project is being undertaken in partnership with IPN, with a specific aim to ensure its synergy with the regional GEF project. The benefits of the carbon sink project in this line include: (i) establishment of nursery infastructure and seed bank for production of seedlings of native species, with capacity of 2 million seedlings annually (seedlings are being donated to settlers for the purposes of dissemination of agrosilvopastoral systems); (ii) participation of small farmers in collection of seeds of native species of the region, stimulating knowledge and local appreciation of the value of the standing forest, as well as providing incremental local rural income; (iii) local on-the-job training in planting, protection against fire, irrigation, nursery, etc. in planting and protection of native trees.	$1,500,000 (land acquis.) $600,000 (seedling donations) $400,000 (seed collection training) $500,000 (on-the job training, employment)
	ADERJUR, one of the first small farm associations in the Northwest region, has been a principal partner of Instituto Pró-Natura since the outset of its activities in Juruena, in trials of	$335,294 (goods and services)

	agrosilvopastoral systems and efforts to develop local enterprises based on perennial crops, improved livestock management and NTFP. Members of ADERJUR were directly involved in the execution of the PDF-B and complementary activities funded by the European Community, as well as with the planning of the proposed project. ADERJUR has formally pledged counterpart support by its members, primarily in the form of labor, inputs and land dedicated to the implementation of project demonstration units.	services)
3. SUSTAINABLE FOREST MANAGEMENT DEMONSTRATIONS	**IBAMA** is responsible to monitor and control activities that affect forest use and management in the Amazon region. In particular, IBAMA reviews and approves forest management plans by timber extraction enterprises, and provides approval for wood transport pursuant to origin. These requirements are the precursors of certification of sustainably managed timbers, and improvement in their observance is a central objective of regional IBAMA officials. **Rohden Indústria Lignea, S.A./A2R** through its innovative forest management trials and industrial investments in advanced door and panel manufacture and electrical co-generation from waste lumber, Rohden Lignea – based in Juruena, Mato Grosso – has demonstrated the potential for sustainable wood enterprise in the Amazon, exceeding that of many better capitalized companies. In recognition of these advances and the market potential for certified tropical wood products from the Amazon forest, the environmental venture capital fund manager Banco Axial (recently transferred to A2R corporation) has expressed its intention to invest in a major plant and forest management expansion program as a shareholder in Rohden Lignea. A particular emphasis of A2R investment will be to enhance Rohden's capacity to manage tropical forests sustainably according to recognized FSC principles, enabling the firm to obtain certification for its products. **SAAF**, the Mato Grosso State Secretariat of Agriculture and Land Tenure Affairs, has recently created a state incentive program for reforestation and sustainable forest management (Prodeflora), which is expected to provide support to rural landowners throughout the state to bolster the forest products industry. IPN is a member of the Prodeflora Management Council, and has contributed actively to its conception and dissemination. Once in operation, the program is expected to provide financial support to activities by private landowners associated with the project.	$1,500,000 (estimated by project staff – not included in co-financing calculations) $2,000,000 (A2R investment in certified forest management) $588,235 (20% in cash – Rohden Lignea demonstration unit)

ANNEX VI: BIODIVERSITY, AGROSILVOPASTORAL AND FOREST MANAGEMENT MODELS

BIODIVERSITY CONTEXT

The forests of the Northwest area exhibit biodiversity substantially distinct from that of well-explored areas elsewhere in the Amazon, including rare and useful species such as *Pterodon* spp. This was confirmed through botanical research during inventories conducted during the NYBG/INPA *Flora Amazônica* program (Ackerly et al., 1985), and the Humboldt Expedition in Aripuanã (see also Governo de Mato Grosso, 1992; Fernandes, 1992). The purpose of the NYBG/INPA expedition was to identify the complex mosaic of vegetation existent in the transition zone between the Amazon forest and the cerrado in the Northwest region of Mato Grosso. Samples were take of individuals of 250 species in 32 families, which were divided into five floristic groups, and the results were as follows:

(i) Planaltine taxa: These are species of the cerrado proper, reaching their northern limits in eastern Rondônia and Northern Mato Grosso and Goiás (56 species);

(ii) Species of the transition zone: These occur along the margins of Amazônia, either around the entire perimeter, or disjunctly on the south and the north margins, or only along the southern edge. Characteristically, they are found in transitional habitats such as forest margins or in dry or gallery forest (28 species);

(iii) Amazônian taxa: This category includes Amazonian taxa, in the strict sense, as well as those that range north of Amazonia into Central América or that are disjunct in the Atlantic coastal forest, but that are clearly species of the moist forest (69 species);

(iv) Widespread taxa: Species that occur both in rainforest and the Planalto, such as many riverine species, and those that occur in forest or savanna localities throughout larger areas or the Neotropics belong to this category; (36 species);

(v) Other: This category includes a few species that fit none of the above categories, such as local endemics of the Mato Grosso or the Pantanal basin, and those for which insufficient collections are available from which to judge.

The local fauna is highly diversified and many of the invertebrates are considered to be endemic to this area. The number of mammals and bird species is also remarkable, with over 200 species of birds detected. Of major significance among the mammals are *Tapirus terrestris* (tapir), *Lutra* sp. (otter), *Pteronura braziliensis* (giant river otter), *Ateles* sp. (spider monkey), *Lagotrix* sp. (big bellied woolly monkey), *Ozotocerus bezoarticus* (pampas deer) and *Mazama americana*, *Panthera onça* (jaguar) and *Felis concolor* (suçuarana, puma).

AGROSILVOPASTORAL SYSTEM

For the average small-holder of 50-100 hectares, a system was needed that would provide for a family of around five people from 25 farmed ha.

The IPN team calculated that by dividing the available area into units of 5 ha, a rotation system could provide for annual crop production on 5 ha each year, with a similar area available for a handful of cattle. The remaining 15 ha would be in various stages of recuperation after carrying out the intensive production phase. A program of reforestation would follow the clearing necessary to offer space for the annual crops, with an average of 1.25 ha available for the harvesting of commercially valuable timber each year.

Over time, each 5 ha unit would be cleared and planted with tree seedlings. For the first four years, these seedlings would be interplanted with annual crops. In the fifth year after clearing, pasture would be introduced to allow cattle to graze beneath the saplings. By the ninth year, as the tree canopy begins to close, the unit would be left fallow and the forest left to re-grow beneath the trees. By the thirteenth year, fast growing tree species would be ready for harvest, with other species taking up to 20 years to reach a commercially acceptable size. Thus the rotation would be completed and return to the first 5 ha unit every 20 years.

The IPN "model" (in reality a 25-year experiment initiated in 1992) included only timber species and some domesticated fruit trees as the perennial component. The NTFP element will have to be added. In principle, this system will incorporate the following NTFP species identified through the PDF-B: açaí (*Euterpe oleracea)*, Brazil nut (*Bertholletia excelsa)*, copaíba (*Copaifera multijuga*), jatobá (*Hymenaea courbaril*), and sangue de dragão (*Croton lechleri*).

Because this model has not been in place for a full cycle of 25 years, it is only conjectural that it will have a higher economic return in overall present value terms than that feasible with the traditional shifting cultivation system. However, the following potential advantages to its broad utilisation may be noted:

- Increase in household income over the long-term
- Improvement and continuous supply of food to the household
- Maintenance of the productive capacity of soils
- Permanence of the farmer on the same land for a longer period of time
- Diversification, allowing reduced production risk
- Lesser dependency on use of commercial inputs
- Recuperation of degraded areas
- Environmental conservation

Such benefits could not be without their commensurate costs. Key disadvantages include:

- More complex management of the agroecosystem
- Higher initial investment cost
- Forest component reduces agricultural and livestock income
- Restricted opportunities for mechanisation

These restrictions emphasize the requirement for technical assistance to promote a better knowledge of interactions between components (better management); credit, tax, service and in-kind (e.g., seedling donations) incentives (investment cost); marketing opportunities for wood and minor forest products (income) and technical assistance on use of no-till systems for soil management (restricted mechanisation).

The tenure situation is favorable to this long-term land use model. The majority of landholders in the Juruena and Cotriguaçu have their property rights well-defined: our recent title search on the property we purchased for the carbon sink shows that the origin of the property (the two municipalities were all under the ownership of the same colonisation company belonging to entrepreneur João Miereles, current State Secretary of Agriculture of São Paulo) is based on a legally recognized "chain of dominion". Most are titled, although some smallholders have not had the funds or access to legal services to formally register their titles. The situation in the remaining three municipalities will have to be assessed in this respect

The IPN model, due to discontinuities in funding and staff changes, has not yet been well documented or evaluated by external independent audit. The project will launch a program of steady performance assessment at demonstration plots implemented through the proposed project, including socio-economic aspects. Independent assessment of the social and environmental viability of production systems promoted

through the project will be ensured by agreements established by Pro-Natura, regional and international universities and EMBRAPA, described below:

- Pro-Natura and the Federal University of Mato Grosso have signed an umbrella agreement, that will permit professors and graduate students of the University to conduct research associated with ongoing activities in NW Mato Grosso. Research areas proposed for immediate initiation include: (i) independent evaluation and monitoring of productivity, biodiversity benefits and carbon sequestration in the agrosilvopastoral and degraded land recuperation models established at Pro-Natura's research center, carbon sink properties and on farmers' fields; (ii) monitoring of natural regeneration of native species in timber exploitation areas; (iii) assessment of technical viability of NTFP management and processing systems; (iv) development of fitomedicinal products; etc. The university will provide research support services, facilities and equipment in exchange for access to Pro-Natura's field facilities, transport and experimental areas.

- Scientific cooperation will also involve EMBRAPA personnel, in particular those based at its Agro-Environmental and Remote Sensing Centers in Jaguariuna and Campinas, São Paulo, respectively, with the objective of evaluating the technical and environmental viability of degraded land recuperation in NW Mato Grosso. Cooperation with these centers will be complemented and coordinated through a sub-contract with the Cornell University Soil, Crop and Atmospheric Sciences Department, under the leadership of agroforestry specialist Erick Fernandes (see draft subcontract TOR, below). Further scientific assistance is anticipated from EMBRAPA's Centers for Agroforestry Research in Belém (CPATU) and Acre (CPAF-Acre), with a view toward integrating non-timber forest products in agrosilvopastoral models, based on experience with participatory research on introduction of "pimenta longa" (*Piper hisperdinervum*) a native shrub and source of the essential oil safrole (a basis for natural pesticides and perfumes), into Amazon farmers' fields as an alternative crop.

- University of East Anglia Professors Katrina Brown and Frank Ellis of the Center for Socio-Economic Research on the Global Environment – CSERGE, will be involved in the project, as advisors to doctoral research by accomplished Amazonian scholar Natasha Grist, entitled "Natural Resource Management in Colonist Livelihoods in Western Amazonia, Brazil". This study will monitor factors affecting uptake of agrosilvopastoral technologies by smallholders and colonists in the Juruena area, and assess the viability of these strategies as a component of diversified rural livelihoods in the Amazon.

SUSTAINABLE FOREST MANAGEMENT MODEL

The forest sector of the State of Mato Grosso is characterized by its substantial economic importance. Approximately 3000 wood products companies operate there, generating about 30% of overall state tax revenues and employing 15% of the economically active population. The current situation of forest exploitation and timber production is characterized by low technical level of activities, substantial wastage of raw materials, poor training of the technical and operational laborforce, besides problems due to inadequate equipment maintenance and technology. The contrast between the economic importance of the sector, on one hand, and the low technological level, on the other, suggests an immediate need for testing of practices for sustainable management of the forest for multiple use, serving as an analytical base and reference for the diffusion of technology.

Instituto Pró-Natura, working with an innovative wood processing firm, Rohden Lignea, in the Municipality of Juruena, with the support of PRODEAGRO, devised and tested a model of low-impact forest exploitation, that has validated practices of forest management for the Northwest region of Mato Grosso. This model offers the following benefits:

- *Conservation of Biodiversity:* Compared to unmanaged exploitation, management maintains forest cover, retaining most of the original floral diversity and minimizing impacts on local fauna.

- *Environmental services:* Managed forests renders services favoring regional and global climate equilibria, particularly through maintenance of the hydrologic cycle and of carbon storage.

- *Continuity of Production:* The adoption of management practices guarantees regional wood production indefinitely, and requires half the time necessary to regenerate as compared with conventional practices.

- *Profitability:* The economic benefits of management overshadow the costs. These benefits arise from increased labor productivity and from reduction in wood wastage.

- *Work safety:* The management techniques decrease the risks of work accidents drastically.

- *Respect for Applicable Legislation:* Forest management is an obligatory practice by law. The companies that don't execute such practices are subject to severe penalties.

- *Market Opportunities:* Importers of tropical timbers are more and more demanding with regard to the origin of the wood, and consequently to the type of practices used for its exploitation. The companies that adopt management practices will become candidates for labeling that distinguishes them from other companies. Through this, they could secure improved marketing opportunities, as well as differentiated prices.

The low-impact model of forest exploitation requires a series of procedures in succession. With the objective of stimulating adoption of this model, Demonstration Units will be established as the basis for diffusion of these techniques.

Pre-Harvest Silvicultural Practices

These practices involve the following activities, undertaken over a period of six months, in the period prior to selection of exploitation areas, with the objective of selecting and marking marketable trees:

- Demarcation of the Demonstration Unit

- Pre-Harvest Inventories (wide-scale)
- Full Pre-Harvest Inventory
- Floristic and Fitosociological Inventories
- Cutting of Vines

Cutting of vines has the purpose of liberating trees that they will be harvested from their influence.This operation should be accomplished at least 6 months before the beginning of harvesting, and is accomplished by the same team that carries out the pre-harvest inventories.

Planning of Forest Exploitation

The location and the size of the holding patios, analysis of trees that will be cut, the protection of trees that are seed donors, the positioning of draglines and the directional felling layout of the trees, are defined in this phase. These data, together with the inventory (location of the secondary roadways and of the trees), are used to elaborate the harvest map, that will serve as the basic guide for the operation itself.

Training of Technicians, Chainsaw and Machine Operators

This phase is considered key for the success of the low impact exploitation. This training is addressed toward managers and group supervisors, and for the personnel responsible for accomplishing the tasks of opening paths, roads, holding patios, etc., the directional felling of trees, sectioning trees, embarkation and transport to the plant. In this training, the subject of safety has also been closely integrated into the overall content.

Timber Harvesting

The following procedures are adopted during the actual harvesting of wood from the inventoried stock, incorporating a range of techniques to avert damage to other vegetation, to the market timber itself, so as to reduce wastage and improve marketable raw materials:

- Directional felling of the trees
- Cutting operations with trees to protect surrounding vegetation and ease skidding
- Dragging the roundwood to the patio (using lightweight skidders and tractors)

Post-Harvest Silvicultural Activities:

Besides the reduction of the environmental impacts, one of the objectives of the forest management is to guarantee the continuity of wood production madeireira by facilitating natural regeneration in openings, and protection of the stock of remaining trees. Seed-donor trees are left in the forest, and other techniques are employed to reduce the ecological damage from harvesting.

However, it is possible that, in some openings, natural regeneration is insufficient to ensure adequate regeneration. In this case, it is necessary to conduct enrichment planting and post-harvest reforestation activities, including, inter alia:

- Plantation of timber and non-timber species in cleared forest gaps
- Enrichment plantings in the areas of juvenile forest
- Treatments to increase growth of trees of commercial value

Protection Against Forest Fires

The Amazon Forest has suffered major alterations in its landscape due to anthropic processes in different pressure areas. Its current landscape consists of a complex mosaic composed of extensive virgin areas, forests harvested for wood, secondary forest, small farms and pastures. This is true of the Northwest region of Mato Grosso. Although its occupation is more recent, with more significant remnants of unexploited forests, there is increasing occurrence of areas under timber exploitation and other activities.

Unexploited forest have nearly closed canopies that protect medium-sized trees and forest floor vegetation against solar penetration, helping to maintain it always green and humid, and usually impeding the spread of fires. With areas of exploited forest, *capoeira*s, shifting cultivation and pastures, this protection is no longer present. In such areas, fire can appear in several forms, including lightning bolts, burning for pasture establishment or management, or shifting cultivation, but often it occurs accidentally or due to criminal malfeasance.

To avoid these problems, some practical expedients should be adopted, primarily to protect exploitation forests:

- Forest management itself, reducing canopy openings and damaged wood
- Systems of natural firebreaks and protective boundaries (*aceiros*)
- Exploitation of alternating, non-adjacent sites

These practices were refined and adapted by faculty of the Institute of Forestry of the Federal Rural University of Rio de Janeiro, led by Professor Hugo Amorim, who will act as Forest Management Advisor to the project.

ANNEX VII: PDF-B RESULTS

1. BACKGROUND

In 1995, IPN submitted a project proposal for PDF B support to the GEF as part of its tropical forest biodiversity program. Proposed activities were confined to an assessment of the viability to develop small-scale community enterprises in Juruena based on non-timber forest products (NTFPs).

The project had the following specific objectives, as expressed in the UNDP-approved Prodoc:

(1) To develop a series of feasibility studies in order to implement industrial processing of the following products in Juruena: Brazil Nut oil, other vegetable oils, natural soap, animal feed, perfumes and aromas, chewing gum, insecticides and natural fertilizers, in order to aggregate as much value as possible and obtain products that remain lucrative even after their transport to distant markets; and

(2) To prepare a longer-term project aimed toward establishment of pilot industrial facilities, a training school and quality control laboratory to facilitate development of the aforementioned industries.

By assessing the production and market potential of NTFPs, and later investing in their local processing and commercialization, it was hoped that local incomes would improve, producers would concentrate attention on these options and would reduce pressures on neighboring forests. The Prodoc affirmed that these products were known on the market, and could be rapidly developed as bootstrap enterprises in Juruena with the involvement of the Association of Rural Development (ADERJUR) and local entrepreneurs, through IPN's technical assistance.

These feasibility studies were proposed to the GEF in 1995, but execution only began in March 1997 due to institutional obstacles. Complementary funding of ECU$100,000 was obtained for work with the local cooperative toward these objectives from the European Community, with a focus on small farmers' agrosilvipastoral systems and NTFPs industries to be developed in a complementary fashion with such systems.

2. METHODOLOGY

After the initial review, consequently, IPN began a broad-scope market assessment of essential oils and turpenes derived from locally prevalent species, and their cosmetic/pharmaceutical properties, potential formulations and consumer applications. These studies and a companion review of resources on the internet to access firms on a global level interested in such products, suggested a growing domestic and international market for products that could be developed along these lines (Reydon, 1997; Bransky, 1997). In many cases, these products already find markets in small volume from dispersed sources as natural products on the Brazilian market, but their value and the breadth of this market were perceived as limited. To meet broader industrial market opportunities, it would be necessary to guarantee a steady supply with consistent quality in fairly large volumes, currently unavailable in Brazil.

To develop industrial-scale and quality output of new products derived from NTFPs in the Juruena area, it was deemed necessary to make strides toward the chemical characterization of such products according to international standards, and to proceed with distribution of samples of materials obtained from the wild, to ascertain potential interest in these products. Due to the limited resources remaining in the PDF B, chemical characterizations were limited to two tree resins (Copaíba and Jatobá) with broader commercial potential. These were undertaken simultaneously by natural products chemists under Gilbert and Barata's

direction at FioCruz and UNICAMP, after thorough literature reviews (Barata, December 1997; March 1998). Samples were distributed to pharmaceuticals enterprises in Europe and the United States.

Whilst this effort was being launched, efforts were made to devise a full feasibility assessment for an initial venture directed toward trial exploitation of Brazil Nut at a community level. This initiative was undertaken for two reasons: (1) Despite the previously mentioned assessment that Juruena could not expect to compete with alternative sources of industrial raw materials such as vegetable oils, there is sufficient demand for Brazil nut as a snack nut to justify efforts to utilize the nearly completely unexploited and fairly abundant resources of this species in the Juruena area, possibly offering better margins at a lower level of investment than could be obtained from more advanced processing, as an immediate complementary income source (see more detailed assessment in below). (2) Such an effort could serve to test the vocation of local colonists to participate in gathering of other forest products on a sustainable footing, as a basis for investment in enterprises that might be pursued at a later stage in project implementation.

Staff of the National Center for Traditional Peoples (CNPT) at IBAMA in Brasília undertook a detailed feasibility assessment of Brazil Nut collection, hulling, packaging and oil pressing enterprises adapted to the Juruena context (Kornexl, 1998). However, it became apparent that the lack of a gathering tradition would be the principal bottleneck toward development of an enterprise of this nature as a bootstrap operation in Juruena. ADERJUR members – who had received approval from the state government to install a small plant based on Brazil nut in Juruena as part of the PGAI – hence agreed to carry out a pilot collection program during the harvest season beginning in December 1998, with the objective of marketing nuts in the shell, as a preliminary approach. Should this experience prove successful, consideration would be given toward further processing and eventually oil extraction for industrial use in cosmetics.

The following summary reports on results to date from the PDF B, emphasizing solely the analysis of NTFPs viability as a means to promote sustained use of biodiversity in Northwest Mato Grosso.

3. SUMMARY OF NTFPS VIABILITY AND MARKET ANALYSES

Many natural products useful for medicinal and cosmetic purposes as well as for artifact manufacture have been identified during the PDF B, on the basis of forest inventories carried out by IPN, and by *in situ* verification and interviews with local inhabitants (see the preliminary listing below).

However, the remote geographical location of Juruena makes it difficult for many bulk products to achieve competitiveness on the international market due to the high cost of commercial transport to sales and export locations. This implies that any product to be marketed must exhibit high value-added, uniqueness to the regional biome and a special appeal of being linked with a sustainable development strategy for the area. To be competitive, furthermore, lots of several tons of each product will have to be available on a steady basis, with adequate quality control and homogeneous chemical specifications.

In order to guarantee an adequate flow of products in volume and quality to meet the above-mentioned output requirements for industrial viability, it is necessary to consider a two-pronged strategy. First, because local producers are primarily agriculturalists and loggers, the NTFPs production has to be complementary with their agrosilvipastoral and forest management systems. NTFPs should therefore be considered whose characteristics render them of interest for agroforestry treatment on degraded lands and/or exploitation forest enrichment. However, the slow development of woody species will imply a period to maturity of from five-ten years from planting to achieve a desired production level of many NTFPs. Some products may be derived from vines, bushes and herbaceous species, that come into production sooner.

Thus, in the interval, carefully managed exploitation of wild populations would ensure an initial supply, later complemented and eventually substituted by planted species, thus averting over-harvesting and unsustainable use. This in turn implies the need, in an implementation phase, to devise and enforce strict criteria for sustainable extraction to ensure species survival and reproduction, as well as to avoid over-homogenization of agroforestry systems. Such criteria would be developed in strict conformance with FSC certification standards for non-timber forest products, so as to ensure that products from the area could obtain eco-labels.

The Brazilian branch of the FSC produced draft criteria for Amazon forest management and forest plantation certification, in July 1998. An FSC committee has been established at the global level to develop broad criteria for NTFPs. No such criteria have yet been drawn-up, except recommendations for Brazil nut and rubber, prepared by IMAFLORA – a Brazilian Smartwood certifier working closely with IPN. In the draft natural forest management certification criteria for the Brazilian Amazon, an enterprise seeking such certification is urged to use a diverse range of wood and non-timber products. The only reference to protection and sustainable use of NTFPs is the following criterion:

No caso de manejo de produtos florestais não-madeireiros, existem inventários desses produtos, com estimativa de estoque, valor, forma de colheita, mercado e impactos ambientais, considerando a caracterização da ecologia das espécies com potencial de colheita.

These criteria are vague at best, requiring further detail to be applied in forest management certification. Furthermore, enterprises based solely or principally on NTFPs are not specifically treated by these criteria.

Products must be marketed in their final retail form if they are to bring sufficient benefit to the producer or collector. Extraction and sale *in natura* can be immediately initiated for those products having well-known characteristics. Extraction and processing of products as yet unknown to the market constitutes a longer-term objective. Processing to a higher added value of existing and potential products, and their packaging on site for the retail market are technically feasible, but will require further investment in medical/toxicological assessment, product development and pilot facilities.

This Annex describes the criteria for technical and financial viability applied during the PDF B as a basis for decisions toward further product development, in the cases of Brazil nut, copaíba, unha de gato and sangue de dragão. These include (1) sustainable use potential; (2) availability and markets; (3) potential products and (4) financial viability and (5) licencing and registration issues. Such assessments indicate potential, but only in the case of Brazil nut has a full financial feasibility analysis been prepared at this stage, for immediate implementation, with resources provided by the PPG-7/PGAI.

4. NON-TIMBER FOREST PRODUCTS OF NORTHWEST MATO GROSSO

Common name	Scientific name	Natural form	Indications
1. Vegetable Oils			
COPAIBA	*Copaibafera affin multijuga*	balsam	wounds, herpes
JUTAÍ, JATOBÁ	*Hymenaea courbaril*	balsam	urinary/pulmonary
CASTANHA	*Bertholletia excelsa*	fruit / oil	cosmetics, snacks
TUCUMÃ	*Astrocaryum tucuma*	fruit	cosmetics/soaps
TUCUM	*Bactris setosa*	fruit	hemorrhage
2. "Over-the-counter" medications sold as-is or in hydro-alcoholic tinctures			
All of the above			
CAROBA	*Jacarandá copaia*	leaves	skin disorders
UNHA DE GATO	*Uncaria guianensis*	vine	immune stimulation
SANGUE DE DRAGÃO	*Croton salutaris*	exudant	intestinal disorders
3. Natural insecticides			
SUCUPIRA BRANCA	*Pterodon pubescens*	oil from seed	insect repellent
ERVA DE BUGRE	*Lithraea brasiliensis*	bark	insect repellent
QUINA	*Quassia amara*	stem	insect repellent
4. Essential oils			
BÁLSAMO	*Myroxylon balsamum*	bark	aromatherapy
CANELA, CANELINHA	*Ocotea spp*	bark	aromatherapy
CEDRO ROSA	*Cedrella oderata*	bark	aromatherapy
CHAMPAGNE, CUMBARÙ	*Dipteryx odorata*	bark	aromatherapy
CEREJEIRA	*Torresia acreana*	bark	aromatherapy
AMESCLA, BREU	*Protium heptaphyllum*	bark	aromatherapy
AMORCEGUEIRA	*Protium sp*	bark	aromatherapy
LOURO ARITU	*Licaria aff. Aurea*	bark	aromatherapy
SACACA	*Croton cajucara*	leaf/stem	linalool
ALFAVACÃO	*Hyptis mutabilis*	leaves	hepatic disorders
PATAQUEIRA	*Conobea scoparioides*	leaves	timol
5. Other natural products			
BREU DE VICK		balsam	aroma
IPÊ AMARELO		sawdust	sunblock

5. DETAILS ON NTFPS' VIABILITY ASSESSED DURING THE PDF-B

Brazil nuts and oil

Sustainable Use Potential: Harvest of Brazil nuts (*Bertholletia excelsa*) does not harm the tree, as only fallen fruit are gathered from the ground. However, it has been hypothesized (but not proven) that constant removal of all fallen nuts could lead to ecosystem impoverishment if this practice were to occur over decades, a hypothesis bolstered by the fact that juvenile Brazil nut trees are rare in traditional harvest areas. Furthermore, pasture and colonist expansion in the 1970s-80s severely deforested the area around Marabá in Pará, known as the "*Castanha* Polygon", leading to a serious decline in supply. Brazil nut trees are also often cut for timber as a mahogany substitute (although clandestinely, as such harvesting is illegal). Loss in this resource is also associated with deforestation and timber operations in Mato Grosso. Repeated burning of pastures and cropland where Brazil nut trees remain also leads to their death. Fruit set in trees isolated in open areas is seriously impeded by absence of associated pollinators (small bees) that cannot survive in open conditions. To offset these sources of long-term genetic erosion and species predation, planting of juvenile *Bertholletia* trees within exploitation timber and agrosilvipastoral systems is increasingly practiced. Plantation of precocious dwarf varieties has been accomplished in the Manaus area, with production initiating after 10-15 years.

Availability and Markets: The raw material is readily available in the Northwest area of Mato Grosso, at a density of 1-2 trees/ha and more densely in groves where indigenous groups probably planted them long ago. In 1975, 51,000 tons of Brazil nuts (in the shell) were produced in Brazil, while this volume dropped to half that in the early 1990s. In 1995, Brazil exported 9,000 tons of shelled nuts, while Bolivia may now have assumed an equal or greater market share of this more lucrative segment. Export of dehydrated Brazil nuts in the shell has been around 17-20,000 t/yr. Demand for Brazil nuts on the international market has remained high, with prices on the rise, while the domestic market is almost unexploited – nearly all nuts are exported. Traditional nut gatherers earn between $1,000 and 2,000 during a harvest season that can range over as much as 6 months, harvesting about 2 tons marketed at net of about $15 per 60 kg sack. (This rate of harvest is not practiced in Northwest Mato Grosso, where traditional Brazil nut production is restricted to indigenous areas.) The unshelled market in Brazil is dominated by the Mutrán family in Belém, which is monopsonist. Unshelled nut prices at the producer level are on average about $0.25/kg, while shelled nuts, depending on their grade and quality, can fetch $3.00/kg. Other product options (eg., oil) and marketing pathways (eg., domestic retail) have been proposed to avoid dependence and improve profitability. Competitiveness of Brazil nut oil in the food industry is marginal, due to the extremely low price of soybean oil, despite the superior nutritional characteristics of Brazil nut. As yet, this oil is only produced in very limited quantities, for specialized markets in cosmetics and aromatherapy. The Body Shop has supported investment in Brazil nut oil expression in indigenous areas, and the CNPT has developed viability studies for nut extraction and oil production for rubber tappers in Amapá. Other efforts have been made along this line in Boca do Acre, but transport costs for oil were deemed prohibitive.

Potential Products: Brazil nut both unshelled and mechanically shelled are commonly marketed in Brazil and internationally. Production in the shell requires only breaking fallen fruit and the drying and cleaning of nuts, which are sold in bulk. Shelling is done mechanically, after drying in an oven or in open air, using a simple nut breaking apparatus. A decentralized approach for nut breaking and initial packaging under vacuum has been successfully implemented in Xapurí, Acre with urban women as well as rural families. Vacuum packing or use of anti-oxidants is necessary to avoid moisture-related spoilage and aflatoxin, which must be absent to enter quality overseas markets. Production of oil requires scalding, shelling, pressing, filtering and packaging. This technology is readily available and adaptable to 50 litre/hour for small communities using an electrically driven screw press or to a larger scale for private companies. The

oil is very readily oxidized, and thus must be enclosed in airtight containers or an anti-oxidant added.[15] It is deemed most desirable to consider formulation of cosmetics or over-the-counter medicinals containing Brazil nut oil as a base, as part of a marketing strategy (see copaíba products, below).

Financial Viability: studies by Kornexl (1998) indicate that a range of product lines and final markets should be considered, from unshelled nuts to industrial oil. An investment in a small oil press processing of 50,000 t/yr of unshelled nuts can yield a financial IRR of 23% over 20 years, generating considerable revenue and employment, at an initial investment of slightly under $135,000. However, for such an enterprise to succeed in Juruena, a number of obstacles must be surmounted, beginning with the organization and testing of a gathering system including access to forest properties, shelling (decentralized or centralized), and the testing at a laboratory and pilot industrial level of potential oil-based cosmetic applications, followed by pilot oil facility installation.

Licencing or Registration: No special export licencing is required for Brazil nut products, as a standard product of commerce. However, aflatoxin testing is required for shelled nuts, which must also have low moisture content. Eco-labelling may represent a desirable strategy for market segmentation.

Copaíba oil

Copaiba oil, derived from the trunk of several *Copaifera* species by tapping, has been recognized the world over for some centuries as an anti-infective agent, mainly for topical use but also, in some medicines, for internal use.

Sustainable Use Potential: Raw material is manually extracted by boring the trunk of the tree. No damage is caused to the tree if the bore holes are stopped-up after running off most *but not all* of the oil. Oil is best collected in the wet season. Copaíba trees are prized by the timber industry; therefore availability in Northwest Mato Grosso could decline rapidly if the lumber companies cut remaining large trees, which yield oil. Thus, although copaíba may be considered sustainable on the basis of natural occurrence (on average, one tree/ha in areas inventoried), enrichment by planting would be highly recommended to offset the inevitable losses incurred due to the timber industry. However, owing to the probably lengthy period to a stage suitable for tapping (> 40 yrs.), such enrichment would not yield products in the near term, but would rather compensate for prior logging. Such enrichment would be undertaken chiefly to enhance and restore biodiversity rather than secure monetary benefit.

Availability and Markets: Copaíba oil is produced in several Amazon states, primarily Amazonas but more recently, Mato Grosso and Rondônia. Total volume commercialized has oscillated around 100 tons/yr. Domestic prices of unprocessed oil at wholesale are fairly low, averaging $2.50/kg, while exports have attained up to $8.00/kg, most of which go to the U.S. (50%), France (25%) and Germany (<20%). Exports averaged 76 tons/yr from 1986-95. Several tons each year could be tapped in Juruena; greater quantities would be obtainable from surrounding municipalities. Copaíba oil is known and used by colonists, but not regularly harvested (it is usually obtained from tree trunks after felling). Wood industry entrepreneurs in Juruena have expressed interest in protecting remaining individuals of copaíba if a steady market can be obtained.

Potential Products: Copaíba oil *in natura* could be immediately marketed with a range of domestic natural medicine dealers, as an additive in shampoos and other cosmetics, and to overseas buyers. However, to add value at local level, products under consideration include: (1) a formula of Brazil nut oil base containing copaiba oil (ca. 10% concentration, depending on biological evaluation), for skin treatment and healing of

[15] This anti-oxidant will be, at the present moment, a synthetic commercially available compound such as BHA or BHT, but could in the future be replaced by a combination of natural anti-oxidants which could be obtained from, for example, *Virola* species.

wounds and skin rash including *Herpes simplex* and probably *Papilloma* virus infections, and (2) a cream or lotion containing 10-15% copaiba oil based on synthetic or semi-synthetic bases which are cheap and available (containing emulsifying agents, humectants and conservation agents); and (3) a medicinal soap that could also be produced in the area using locally available palm and Brazil nut oils. These products can conveniently also contain natural pigments and perfumes as enhancements.

Financial Viability: Facilities for oil filtration and bottling for final sale as an over-the-counter retail product would be very inexpensive, but would not add much value to the product. More complex formulations would require a greater investment, whose financial viability has not yet been assessed, pending laboratory trials and studies of toxicological problems and medicinal efficacy.

Licencing or Registration: Barriers to sale of copaíba oil are not expected, given its common use in natural medicine. However, product development must cope with the problem of variable chemical composition of copaíba oil between trees found in different areas. The toxicity of one oil does not necessarily therefore correspond to that of another oil of different geographical origin. Secondly, the Ministry of Health, Secretaria de Vigilância Sanitária, the licencing body, normally requires toxicity measurement to be made on the formula which will become available to the public. The formula (Products 1 or 2) must therefore be decided and then the dermal toxicity measured anew.

Other products with immediate potential

Two fast-growing species prevalent in Northern Mato Grosso, "unha de gato" and "sangue de dragão", were identified during initial inventory and fieldwork (and Antonio Brack's mission), as having potential for immediate development, although a more significant investment would be necessary to identify product and marketing options.

Uncaria guianensis, ("unha de gato"), is an abundant vine found in the undergrowth of Juruena forest, that quickly propagates on clearing and is thus prevalent in degraded fields and secondary forest stands. This climbing plant has been shown to contain the same pentacyclic oxindole alkaloids that confer the powerful immune stimulation shown by the Peruvian plant of the same common name, *U. tomentosa* D.C. This latter plant, as well as alkaloid concentrates derived from it, are widely commercialised, principally for treatment of AIDS patients but also for a number of other disease treatments. It is anticipated that Brazilian "unha-de-gato" preparations could reach not only the Brazilian AIDS market (already in the multi-million dollar bracket) but also the world market. However, a series of applied research steps are necessary to bring this product to market, as well as to determine appropriate steps for local extraction and formulation.

Croton salutaris, or "sangue de dragão", is similar in its traditional medicinal use to *C. lechleri* (known in Peru and Ecuador as "sangre-de-drago" or "sangre-de-grado" . and described as the most important phytopharmaceutical export of Ecuador). The former species has been located along the banks of watercourses where it is abundant in Mato Grosso and should be easily propagated in humid habitats. A drug in process of licencing in the USA, "Provir" based on the gum extracted from the Peruvian and Ecuadorian species, is used for the treatment of diarrhoea associated with AIDS. It is hence believed that the Mato Grosso drug may reach the international market not only for its traditional use as a topical "healing agent" but may also find application in this type of dysentery.

However, consultation with the San Francisco company Shaman Pharmaceuticals, developer of "Provir" has indicated that this firm will not in the near future purchase raw material from species other than that which has been registered with the US-FDA. Shaman expressed aversion to introducing *C. lechleri* into northern Mato Grosso, as an exotic variety, unless it can be shown that voucher specimens have been located in the Brazilian Amazon. Shaman may also promote development of *C. ucurana*, a related species. The CNPT has been investigating use of "sangue de dragão" found near the Bolivian border of Acre in the

Chico Mendes extractive reserve, to verify whether this species exhibits the same characteristics registered by Shaman.

6. PDF B PROJECT REPORTS REFERRED TO IN THE TEXT

Barata, Lauro. (December, 1997)"Copaíba: propriedades farmacológicas, etno-farmocologia e usos".

Barata, Lauro. (March 1998) "Seiva de Jatobá: etnofarmocologia e outros usos".

Bransky, Regina Meyer. (December 1997) "Utilização da Internet como veículo de vendas e marketing para produtos extrativos não madeireros de Juruena" (and companion "Pro-Natura Bookmarks" for WWW searches in natural products markets and consumer groups.

Kornexl, Werner. (March 1998) "Estudo de viabilidade para beneficiamento de óleo de castanha; Juruena/MT".

Gilbert, Benjamin. (April 1997) "Produtos naturais Industrializáveis em Juruena".

Gilbert, Benjamin. (December 1997) "Non-wood forest products from Juruena-Mato Grosso".

Reydon, Bastiaan. (December 1997) "Estudo de mercados para produtos oriundos de Juruena".

7. EXTRACTIVISM AS AN INCENTIVE FOR BIODIVERSITY CONSERVATION: PROS AND CONS

The following represents a by no means exhaustive review of recent literature on the potential that non-timber forest product (NTFPs) extractivism from wild trees and plants may hold promise as a contributor to biodiversity conservation.

One of the most influential papers in tropical forestry, "Valuation of an Amazon rainforest" (Peters, Gentry and Mendelsohn, in *Nature*, 1989, 339:665-6), quantified promising returns from NTFPs on forestlands in the Peruvian Amazon. The results demonstrated that, if managed on a sustained-yield basis, NTFPs and low-impact selective timber extraction in combination can provide higher financial returns than alternative and more destructive forms of land-use such as ranching or fast-growing timber plantations. This is so because even a modest annual value derived from the wide range of NTFPs found at the site, when accumulated over time, generated a net present value superior to the opportunity costs embodied in alternative land uses, estimated as nearly triple that obtained from cattle ranching and double that of a *Gmelina arborea* plantation in the Brazilian Amazon.

This article and numerous repetitions of the valuation approach created optimistic expectations of the ubiquitous role of NTFPs management in deterring tropical deforestation, to the point that this approach became almost a panacea for NGOs and development agencies. The argument became axiomatic with the social and environmental objectives of Brazil's rubber tappers' movement, and lent material justification to demands for creation of extractive reserves, widely emulated as a model of sustainable development and wildlands protection.

There are two fronts on which the Peters et al. study has been contested and their results revised: the methodology used and the representativeness of the chosen site (Sven Wunder, pers. comm., 9/98). The first part refers to issues such as stock vs. flow valuation, elasticity of demand in local markets, etc.; the second to the choice of an oligarchic forest patch (*aguaje - Mauritia flexuosa* and *aguajillo*), an Amazonian palm whose fruit is used locally as a flavoring for ice cream, was particularly abundant, as was *Jessenia bataua* and rubber), closeness to a large urban market, etc. (considerable volumes of *aguaje* and other NTFPs found at the study site are readily consumed in the voracious Iquitos market of 250,000 inhabitants.) In fact, even in roughly the same area of the Amazon, these results were found to be overly generous when sustainable flows of the same NTFPs species on an alternative site at San Rafael in the same area, where economic fruit species were half as abundant. When these are compared with the land use opportunity costs faced by local producers for merchantable timber extraction followed by swidden cultivation, the authors were not surprised at the behavior they observed among local farmers, who were much more apt to clear the forest than manage it for sustainable NTFPs yields (Pinedo-Vasquez et al., 1992).

Southgate (1997; 1998) argues that besides these concerns for replicability, it is improbable that NTFPs extractivism on its own can generate livelihoods that may compete with alternative sources of rural income. On the rare occasions when market conditions for extractive forest products are particularly propitious, if property rights for the resource are ill-defined and harvesting practices are damaging, the result may be destruction and even extinction rather than sustainable harvesting. These conditions have been observed in the case of palmito harvest in the Atlantic Forest with *Euterpe edulis* and *açaí* (*Euterpe oleracaea*) in the Amazon floodplain, and with historical extraction of quinine (*Cinchona* spp.) in the Andes (according to references cited by Southgate).

The response to such conditions, under this scenario, lies in agricultural domestication or development of synthetic substitutes, either of which will undercut extractive incomes, supplanting them with alternative sources of the compounds consumers crave. The most notorious example is that of the domestication of rubber and its plantation in Malaysia, and the attendant collapse of the Amazon rubber boom. The resulting lower cost supply takes pressure off the natural resource base, but also may remove the immediate

incentive to protect it, except perhaps as a gene pool for domesticated species improvement (Homma, 1992; May, 1992).

The pessimistic view that emerged as a result of debate in the early 1990s crystallized in a seminar organized in Bangkok in 1992, which distinguished a number of central hypotheses based on case studies and literature reviews on the relationship between extractivism, livelihood and biodiversity conservation:

- *Specialization and transition* – as households' incomes improve, they tend to gravitate toward non-forest related occupations and consume fewer products from wild species, but that under some conditions, the share of household derived from sources was highest among middle-income than among richer or poorer households;
- *Forest opportunity cost* – the opportunity cost of NTFPs is similar in tropical forests worldwide, and lies in the neighborhood of \$50 $ha^{-1}yr^{-1}$;
- *Sustainability* – the sustainability of extraction depends on access to technology, availability of substitutes and the end use of the particular product in question (goods exported tend to be depleted more rapidly);
- *Extraction costs and species richness* – costs of extraction increase with species richness (ie., oligarchic forests more readily serve as a basis for sustainable extractivism);
- *Commercialization, depletion, domestication and deforestation* – market expansion can lead to either domestication or deforestation (or both), depending on tenure security, among other variables.

In some cases, it has been found, the promise of NTFPs as a basis for both livelihood and conservation incentive is greater. The resilience of locally important species and ecosystems is one factor that can contribute in this direction. For example, products such as *babaçu* (*Orbignya phalerata*) and Brazil nut (*Bertholletia excelsa*), whose fruit are gathered from the forest floor where they drop, are fairly resistent to increased harvest pressure (Anderson, et al., 1991; May, 1991; Clay, 1997).

Furthermore, a wide range of common property resource management regimes permit exclusive use rights to be controlled by specific social groups. Their knowledge and respect for natural limits have ensured the establishment of rules to limit extraction at levels below what would do damage to the resource. According to a recent review of global experience with Integrated Conservation-Development Projects, "predictability of markets, level of consumption (local markets versus international ones), and the type and locus of management power are likely to be among the key predictors of success" for sustainable use (Brandon, 1997:99).

Even where property rights are well delimited, management is local and resources are resilient, however, difficulties in marketing have led to the demise of an "extractivism-only" approach. This has been the unhappy discovery by the very rubber tappers who had championed the extractive reserve experience in Acre. There, after several years of testing improved systems of Brazil nut and rubber processing, competing with, respectively, cut-rate Bolivian producers and Malaysian (and São Paulo) plantation sources of the same goods, extractivists concluded that they would have to focus attention on a "multiple-use strategy" involving the intensification of perennial crop production in agroforestry systems, and initiation of low-impact managed timber extraction to bolster flagging incomes (May et al., 1996).

As Charles Peters recognizes today (pers. comm., 9/98), "the problem (with reliance on NTFPs as a basis for biodiversity conservation and enhanced livelihoods) is the 'if managed on a sustained-yield basis' part. For this to happen, you clearly need to bring other things into the farmer's portfolio like agroforestry and perhaps small-scale timber harvesting. All of this, of course, is habitat sensitive."

As a strategy for incorporation of NTFPs into an integrated approach to conservation and sustainable use, various authors (e.g., Anderson, 1992; Pollak et al., 1995; Southgate, 1997;) recommend low-intensity

management of dense native stands of oligarchic species whose products are in high demand and which grow on lands uncompetitive for other uses, such as *açaí* and *aguaje* (in Brazil – *buritî*). The most lucrative approach to management of fast-growing palm species such as *açaí* would involve gradual native stand improvement through seed dispersal and thinning of undergrowth and canopy species to permit light to penetrate and hasten fruiting. Coupled with this approach, NTFPs could be gradually integrated within agroforestry systems and through enrichment of secondary forests that now constitute as much as 40% of all occupied Amazon lands (Browder, 1992) by domestication of diverse species whose occurence in nature is sparse and whose resilience to harvesting is low, once their products had been screened for market potential.

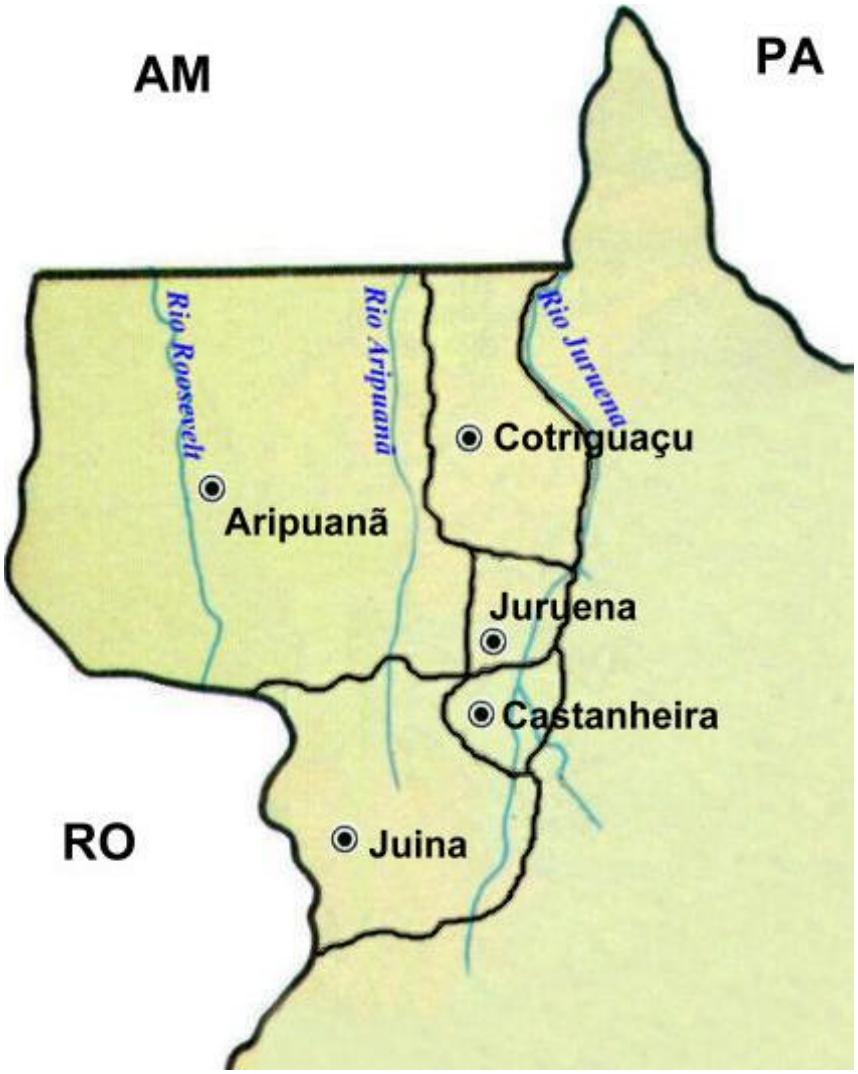
Finally, it is worthwhile citing the conclusions of recent work reviewing the values of domestic benefits derived from tropical forests as an argument for their conservation. Consonant with the results cited above, Chomitz and Kumari (1998) found that the consumptive benefits from NTFPs extraction and of watershed protection for such purposes as hydroelectric energy generation are in general lower than is commonly believed. This is true because benefits (1) must be compared to those derived from alternative land-uses; and (2) are highly site-specific and scale-dependent: "diversity results in a continuous variation over the landscape in both the physical processes underlying forest benefits and in their economic value". Thus it is tropical biodiversity itself which undermines the potential that domestic benefits may justify its protection. These factors serve as further justification for global sharing in the investments necessary to conserve tropical forests and ensure their sustainable use on a broad scale.

Peter H. May, Technical Coordinator
GEF/PDF B - Juruena: Non-timber forest products

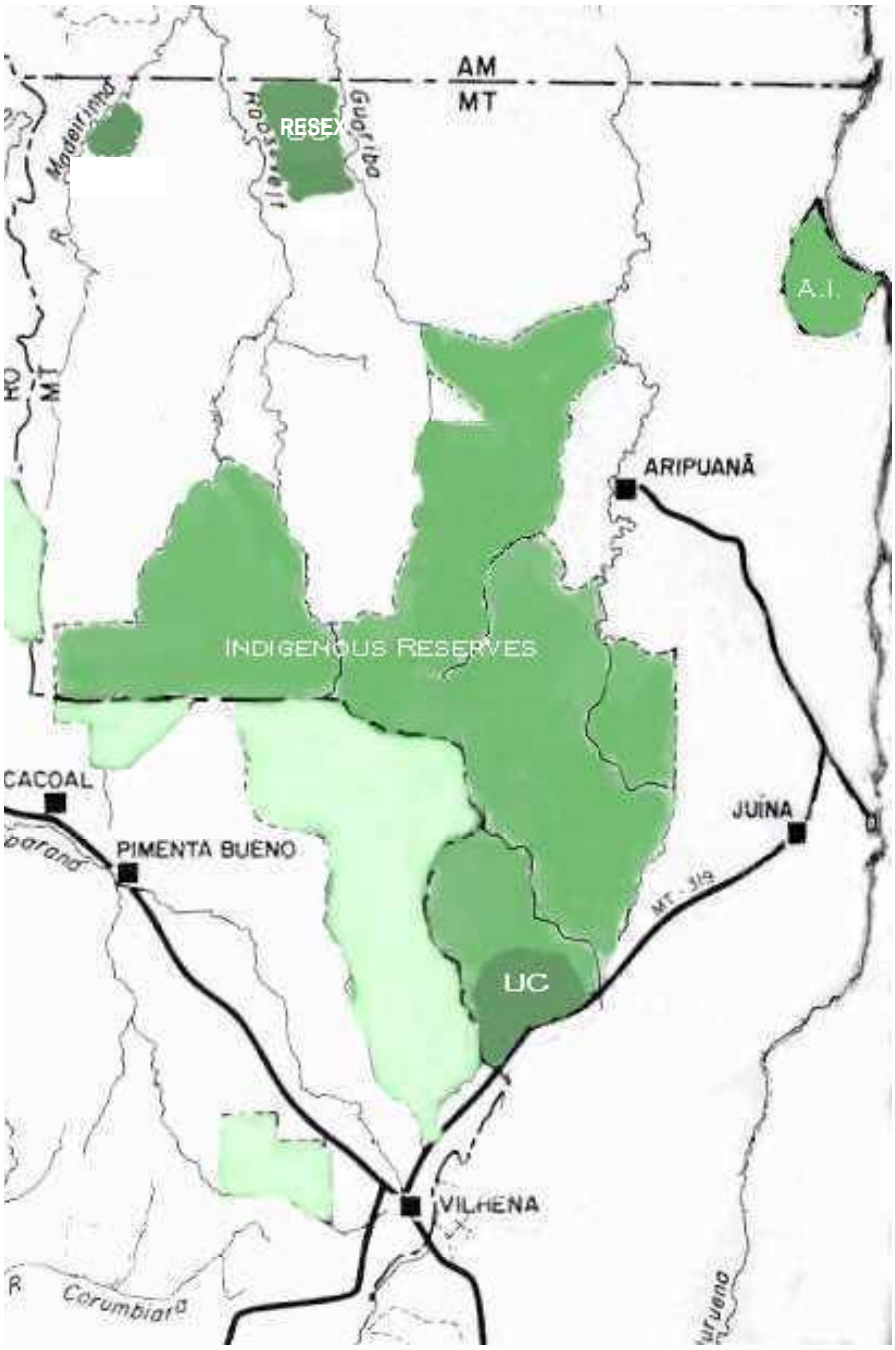
ANNEX VIII: MAPS OF THE PROJECT REGION:

MAP 1: LOCATION OF PROJECT SITE IN BRAZIL AND MATO GROSSO

MAP 2: MUNICIPALITIES AND PRINCIPAL RIVERS IN THE PROJECT REGION



MAP 3: INDIGENOUS AND EXTRACTIVE RESERVES AND CONSERVATION UNITS IN THE PROJECT REGION



[Obs.: Indigenous reserves in the project region are distinguished from contiguous reserves in the neighboring state of Rondônia by darker shade of green.]

LEGEND: A.I. – INDIGENOUS AREA. RESEX – EXTRACTIVE RESERVE UC – CONSERVATION UNIT

SOURCE: ISA, *POVOS INDÍGENAS DO BRASIL*; FEMA.

ANNEX IX: DUTY STATEMENTS - STAFF

LONG TERM PERSONNEL

National Project Coordinator

Background

The National Project Coordinator (NPC) will be responsible for advising and supervising the overall coordination of project activities, liaising with government agencies, UNDP, NGOs and all other project stakeholders, supervising evaluation and monitoring activities and incorporating lessons learned into project operations and dissemination.

Duties and Responsibilities

1) Advise and supervise project development in accordance with the Project Document and GEF/UNDP guidance.

2) Manage project expenditures in conformance line with the approved input budget and activity work plans;

3) Monitor and report to the NPD on the delivery of approved outputs and technical quality of project interventions;

4) Assist the NPD in coordinating conservation/development activities with other government line agencies, donors, and non-government actors at a national and regional level;

5) Elaborate all Terms of Reference and selection criteria for personnel, consultants and sub-contractors, and identify candidates for review by the NPD;

6) Elaborate and submit technical specifications for equipment, and participate in the vendor selection process, where competitive bidding is required.

7) Supervise and coordinate the work of national and international consultants and sub-contractors;

8) Supervise and evaluate technical assistance toward project activities, including planning and monitoring, with direct assistance of the Operational Technical Manager;

9) Prepare and revise project work plans, travel plans and financial plans as required;

10) Prepare regular progress reports.

Selection Criteria

1) Post–graduate degree with a minimum of 10 years professional experience in natural resources and sustainable development projects.
2) Ability to effectively supervise a large, multi-disciplinary project;
3) Ability in relationship with goverment agencies and technicians;

4) Fluency in written and spoken English;.

Operational Technical Manager

Background

The Operational Technical Manager (OTM) will be responsible for the co-ordination of project activities in the field, liaising with the local governments and producer associations, and all other involved institutions.

Duties and responsibilities

1) Supervise and co-ordinate project activities, including the elaboration of municipal master plans, organization of workshops, seminars, meetings, field research logistics, Pilot Demonstration Units implementations and maintenance;

2) Identify technical assistance demands for project activities, and assist the NPC in elaborating the respective Terms of Reference;

3) Assist the NPC in execution of staff recruitment and management functions;

4) Facilitate all consultant fieldwork, participatory and training activities supported by the project;

5) Supervise and co-ordinate all project field staff;

6) Prepare and review all fieldwork plans including their logistics and costs;

7) Prepare monthly reports on field activities by project personnel and consultants;

8) Disseminate project progress reports to stakeholders;

9) Identify stakeholders' demands;

10) Provide operational support in the field to UNDP, GEF and Independent Evaluation Missions.

Selection Criteria

1) Graduate degree in Environmental Sciences with a minimum of 7 years of professional experience.

2) Experience and ability to coordinate the implementation and management of large multi-disciplinary conservation and development projects.

3) Experience in relationship with stakeholders, preferably in Northwest Mato Grosso.

4) Ability in spoken English.

Project Liaison Officer

Background

The Project Liaison Officer (PLO) will be responsible for liaison on behalf of the NPD and FEMA with project activities in the field, in conjunction with the project Regional Field Coordinator and local FEMA personnel in the project region.

Duties and responsibilities

1) Co-ordinate project activities with ongoing FEMA programs in the project region, including the scheduling and organization of joint workshops, training activities, seminars, Project Steering Committee meetings, and field logistics;

2) Review Terms of Reference and credentials of short-term project personnel and subcontrators, providing suggestions to the project implementing agency in identifying and recruiting appropriate regional personnel and service providors to the project;

3) Accompany project administrative staff in the preparation of regular financial reporting on project related expenses, and certify the adequacy of reporting to the NPD;

4) Facilitate cooperation with FEMA headquarters divisions and assist in processing and follow-up on requests for technical and material assistance to the project from state government agencies;

5) Prepare regular reports on liaison activities, including assessment of difficulties encountered in project coordination with ongoing FEMA activities, and suggestions for their resolution;

6) Participate in UNDP, GEF and Independent Evaluation Missions, on behalf of FEMA and the NPD, where necessary.

Selection Criteria

1) Undergraduate degree with a minimum of 5 years of professional experience in administration of environmental programs.

2) Knowledge of FEMA operating structure, administrative procedures, and ongoing programs.

3) Good working relationship with government personnel and with stakeholders, preferably in Northwest Mato Grosso.

4) Basic knowledge of spoken English.

Financial Manager

Background

The project Financial Manager (FIM) will be responsible for financial coordination of the project. The incumbent will report directly to the National Project Coordinator (NPC).

Duties and Responsibilities

1) Establish the financial accounting, transactions and reporting system for the project in accordance with UNDP financial and administrative requirements and procedures;

2) Provide administrative support to project activities;

3) Advise the NPC on the budgetary implications of project management decisions;

4) Ensure that all financial transactions are in compliance with applicable UNDP rules and procedures;

5) Prepare payment requests for submission to UNDP through the NPC;

6) Facilitate audits of project accounts conducted by external auditors;

7) Prepare Project accounts reports to the NPC and to UNDP managers;

8) Train field administrative staff in project accounting procedures; and

9) Monitor all equipment and goods purchased with project funds.

Selection Criteria

1) At least 5 years of project finance and administrative control experience;

2) Strong computer skills and experience with project administration and accounting software;

3) Previous knowledge of UNDP operational systems and procedures.

Project Secretary and Administrative Manager

Background

Reporting to the National Project Coordinator (NPC) and in direct cooperation with the Financial Manager (FIM), the Project Secretary and Administrative Manager (PAM) will provide support to all project-related administrative demands.

Duties and Responsibilities

1) Assist the NPC with general project demands, including routine correspondence, scheduling, and general project related communications;

2) Create and maintain a database of project correspondence, newsletters, and other documents;

3) Assist the NPC and FIM in processing administrative management forms, particularly travel requests, Terms of Reference and logistics arrangements;

4) Ensure proper filing of all office correspondence and project documents.

Selection Criteria

1) At least 5 years of project related executive secretarial and administrative experience.

2) Excellent Portuguese and English writing and verbal communication skills.

3) Excellent computer skills especially word processing and spreadsheet preparation;

4) Ability to format, organize and edit major project reports.

Regional Field Coordinator

Background

The Regional Field Coordinator (RFC) will be directly responsible for regional management and coordination of project activities, including administrative support, under the supervision of the OTM. The candidate will ideally originate from Mato Grosso State, and will be based in Juruena, but responsible for coordinating field activities in all 5 municipalities of the Northwest region.

Duties and Responsibilities

1) Organize and coordinate regional project activities;

2) Coordinate technical and administrative support for municipal project offices;

3) Responsible for maintenance of project field equipment and supplies;

4) Mobilize and involve all project stakeholders to assure continuous cooperation with the project;

5) Facilitate and coordinate consultants' and subcontractors' fieldwork with stakeholders;

6) Assist the TOM in the identification of stakeholders' demands;

7) Prepare monthly technical and administrative reports to the TOM.

Selection Criteria

1) Graduate studies in sustainable agriculture with a minimum of three years of field experience;

2) Experience and ability in working with different kind of stakeholders;

3) Administrative ability and responsible management skills;

4) Knowledge and skill in computer use;

5) Aptitude for training and communication.

Field Managers (5 candidates)

Background

The project Field Managers (FM) will be directly responsible for local management and coordination of project activities in each project municipality, including administrative support, under the supervision of the OTM and FC. These positions will be filled by candidates from Mato Grosso State, one of whom will be based in each of the 5 municipalities of the Northwest region.

Duties and Responsibilities

1) Organize and coordinate local project activities;

2) Provide technical and administrative support to the project;

3) Responsible for maintenance of project field equipment and supplies;

4) Mobilize and involve all project stakeholders to assure continuous cooperation with the project;

5) Facilitate and coordinate consultants' and subcontractors' fieldwork with stakeholders;

6) Assist the FC and OTM in identification of stakeholders' demands;

7) Approve local financial reporting by the municipal Administrative Assistant;

8) Elaborate monthly technical and financial reports to the OTM.

Selection Criteria

1) Undergraduate training in agronomy or forestry with a minimum of three years of field experience;

2) Experience and ability in working with different kind of stakeholders;

3) Administrative ability and responsible management skills

4) Basic computer skills;

5) Aptitude for training and communication.

Local Administrative Assistants (5 candidates)

Background

Working under direct supervision of the FMs and under the coordination of the FIM, the Local Administrative Assistants will be responsible for providing administrative support to local project activities. These professionals will be recruited in each municipality.

Duties and Responsibilities

1) Assist the FM with general project demands, including correspondence, communications, and activity scheduling.

2) Provide administrative support and prepare minutes of local project activities;

3) Assist the FM to control use and maintenance of equipment and supplies purchased by the project;

4) Assist the FM in accounting and control over project expenditures, in consultation with the FAM.

Selection Criteria

1) Completed secondary school diploma, preferably with secretarial and/or accounting experience;

2) Good knowledge of computing, especially word processing and preferably spreadsheets;

3) Ability to organize documents, and skill in communication with local stakeholders.

Agroforestry Technicians (5 Candidates)

Background

Under the direct supervision of the FM, these technicians will work directly in rural settlements and with other local farmers, providing technical assistance, identifying demands and working on the implementation of the Municipal Master Plans.

Duties and Responsibilities

1) Assist the FM to support local governments in implementation of Municipal Master Plans;

2) Contribute to develop training programs and to establish and manage agroforestry demonstration units;

3) Provide technical assistance to stakeholders in accordance with project plans;

4) Identify barriers to the adoption of project plans;

5) Assist the FM in the maintenance of project equipment and supplies;

6) Coordinate rural laborers contracted by the project

Selection Criteria

1) Technical agricultural training, with 3 years of experience;
2) Experience with rural extension;
3) Ability in relationship with small and medium scale farmers;

Computer and Graphics Assistant

Background

The occupant of this post will directly assist the NPC in administrative routines referring to maintenance and use of informatics equipment, on-line communications, database research, graphics formatting, digitizing, report revision, and will also provide support to the project GIS facilities.

Duties and Responsibilities

1) Assist the NPC to organize and format project documents;

2) Supply project staff with the necessary technical assistance, to allow a smooth flow of communications between the field bases and Project Headquarters;

3) Maintenance and training in use of all informatics equipment involved in the Project, including those of stakeholders;

4) Provide the project with information regarding software and peripherals, that can be of assistance in the project's execution;

5) Maintain the project website;

6) Supply project staff and part-time consultants with support in report formatting.

Selection Criteria

1) Secondary school diploma;

2) Excellent skills in computer equipment, Internet and software use;

3) Knowledge of English;

4) Ability to format and organize reports;

5) Ability to train novice computer users in software use and basic computer maintenance.

Communications Officer

Background

Responsible for elaborating and implementuing the overall project communications strategy. The PGC and the TOM will supervise and provide this professional with all necessary information to ensure a lively flow of communications on the project to stakeholders and the broader development community.

Duties and Responsibilities

1) Prepare a project communications master plan;

2) Assist project management staff in press relations;

3) Assist in the elaboration of folders, technical communications and other communication instruments, including video, graphic presentations, stands and publications;

4) Adapt technical language to ensure comprehension by the different stakeholders involved in the project;

5) Assist the project staff in the organization of seminars, workshops and other meetings.

Selection Criteria

1) Degree in journalism;

2) Minimum of 5 years of press experience;

3) Experience in rural communication techniques and media;

4) Good relationships with the principal communications channels in Mato Grosso and Brazil.

SHORT TERM PERSONNEL

INTERNATIONAL CONSULTANTS

Bioregional Planning Expert

Objective: To design an adaptive landscape ecology approach and train project personnel in techniques for planning for protection and management of remaining biodiversity resources in the project region.

Activities

1) Design a long-term participatory Bioregional Planning program, to protect and replenish endangered biodiversity resources in the project region. The Program would be coordinated with a sub-program in Biodiversity Assessment and Monitoring, which would include as one output the preparation of baseline ecosystem maps based on interpretation of remote sensing materials.
2) Develop a strategy for communicating the results of landscape ecology analysis and bioregional assessments to local authorities and other key stakeholders, with the objective of adaptive management and preparation of municipal agroecological zoning plans and associated land use instruments.
3) Support IPN and the state government of Mato Grosso in efforts to identify and mobilise research and technical support toward the needs of biodiversity conservation and sustainable use in the project region.

Participatory Agroecosystems Diagnosis

Objective: To devise and train project staff in methodologies for the participatory diagnosis of agroecosystem and forest management, land use planning, and agroforestry systems design and evaluation in the project region.

Activities

1) Develop training modules and materials that apply participatory methods in the diagnosis of existing agroecosystems and forest ecosystems.

2) Train project staff in the use of the Automated Land Evaluation System (ALES) as a basis for the evaluation of the impacts of project activities and the recommendation of appropriate changes to enhance sustainable natural resource management.

3) Obtain baseline information on indigenous practices and species. This phase will require:
   - A survey of existing land use practices and systems in the project region.
   - An inventory of currently used tree, shrub, crop, and other herbaceous species and their relative contributions to food security, health, income, and other ecological services.
   - A database on (a) local knowledge of species and systems and (b) knowledge from other regions with same species and similar systems.

4) Based on the outputs of the diagnosis and ALES, design and establish prototype agroforestry practices that can serve as demonstrations of desirable systems with potential to improve the livelihoods of local people while enhancing carbon sequestration and biodiversity conservation.

5) Identify the biophysical, social, economic and institutional criteria for evaluating improved systems and establish the methods to be used to gather appropriate data for the evaluation and analyses of tradeoffs.

NATIONAL SHORT-TERM CONSULTANTS

Resource Economist

Objective: Contribute to planning and evaluation of project interventions, including land use planning and demonstration units, linking technical feasibility with economic determinants of use and commercialization prospects for agroforestry, timber and non-timber forest products.

Activities:

1) Participate in the elaboration and execution of municipal ecological economic zoning and master plans;

2) Evaluate the determinants of demand for products derived from the sustainable development activities planned and executed in each municipality;

3) Identify national and international markets for the products generated by the activities stimulated by the project;

4) Develop market outlets and brokerage for the products generated by the project;

5) Identify opportunities for financing sustainable use activities, sensitizing loan officers of rural banks and other sources of finance, promoting linkages between producers, buyers and finance agents;

6) Identify and promote fiscal and other incentives to promote conservation on private lands; and

7) Assist to evaluate the private and social costs and benefits of biodiversity corridor establishment.

Legal Advisor

Objective: Advise the project management regarding agreements with partners and donors, reviewing conservation policies and regulations, drafting model municipal legislation for Master Plan adoption and implementation, and instruments for permanent easement creation (RPPN).

Activities

1) Prepare the legal framework for project contracts in accordance with UNDP regulations;

2) Draft regulations to operationalize conservation strategies within applicable state and federal policies toward establishment of new public and private conservation units;

3) Assist the NPC and the TOM in contract formulation to define rights and responsibilities in partnerships between the project executors and the beneficiaries of Demonstration Units;

4) Assist the project and the stakeholders in drafting legislation and regulations to integrate sustainable forestry, agroforestry and agriculture with biodiversity conservation;

5) Provide legal assistance in support of community interests involving commercial negotiations and administrative concerns.

Selection Criteria

1) Degree in law with a specialization in environmental legislation and regulation;

2) Excellent oral and written communication skills;

3) At least 3 years of responsible experience working with private and public sector organizations, private individuals, municipal governments, NGOs and other stakeholders.

Socio-Institutional Advisor

Post-graduate degree in the Social Sciences;

Over 10 years responsible research experience in rural social development programs;

Ability in data analysis and relationship with different stakeholder groups;

Ability to organize community forums with local community representatives;

Excellent oral communication skills.

Environmental Education Advisor

Degree in Education;

Experience in design and execution of environmental education projects in rural areas;

Experience in preparing media (folders, newsletters, videos, etc.) for environmental education;

Ability to test and adapt environmental education techniques and instruments.

Land Use Planning and GIS Advisor

Degrees in natural resource management and remote sensing interpretation;

Considerable broad-based experience with GIS implementation;

Ability in training unskilled operators in GIS use;

Ability to advise development of management plans for establishment of biological corridors;

Ability to contribute in the elaboration of municipal Land Use Plans;

Excellent inter-personnel communication skills;

Knowledge of the main government agencies and data sources involved in the Project.

Agroforestry and NTFP Advisor

Graduate degree in Agronomy and/or Forestry;

Over 10 years experience with agroforestry systems diagnosis and design in rural Amazonia;

Knowledge of constraints to adoption of agroforestry practices, and potential crop combinations;

Experience with domestication of wild species and introduction in agroforestry systems;

Experience of techniques and species adequate for recuperation of degraded tropical soils.

Forest Management and Certification Advisor

Graduate degree in forestry with specialization in forest inventory and sustainable harvesting;

Over 10 years of experience in forest management planning;

Understanding of the barriers to sustainable management of Amazon timber operations;

Ability to effectively communicate appropriate management practices to forest enterprise managers;

Knowledge of FSC principles and criteria, and IBAMA regulations regarding sustainable management planning in the Amazon.

MISCELLANEOUS SHORT-TERM TECHNICAL AND TRAINING CONSULTANCIES

Non-Timber Forest Products (resource management and product formulation)

Forest Product Certification

Soils Management

Cooperative Administration

Rural Settlement Administration

Rural Credit

Organic Agriculture and Natural Products Enterprise Development

Livestock/Wildlife Management

ANNEX X: EQUIPMENT LIST

Item	Qty	Unit Cost	Total Cost	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Office Equipment										
Workstations w/15" monitor	5	1667	8333	3333			5000			
ArcView-ready Workstations	3	2222	6667	6667						
21" Workstation Monitor	1	1833	1833	1833						
19" Workstation Monitors	2	1250	2500	2500						
Smart No-Breaks (SMS)	5	500	2500	1000			1500			
Ink Jet Printers	6	556	3333	1667			1667			
Plotter (A0)	1	7778	7778	7778						
Printer (A3)	1	833	833	833						
Flatbed Scanners	2	250	500	500						
Photocopier	1	600	600	600						
Fax/answering machine	5	300	1500	600			900			
Furniture	5	1000	5000	2000			3000			
Datashow Projector	1	5000	5000	5000						
Overhead projectors	6	450	2700	1350			1350			
Laptop computers	3	2500	7500	5000			2500			
Air conditioners	6	400	2400	1200			1200			
Drive CD-RW	1	650	650	650						
Equipment upgrades	20	250	5000	2500			2500			
Slide projectors	5	250	1250	500			750			
Digital cameras	5	500	2500	1000			1500			
Video cameras	5	500	2500	1000			1500			
Telephone lines	4	500	2000	500			1500			
Dedicated Internet line(2yrs)	2	10000	20000	10000	10000					
Radio transceivers	10	600	6000	2400			3600			
Video cassette players	5	200	1000	400			600			
TV monitors	5	250	1250	500			750			
Subtotal Office Equipment			**101128**	**61311**	**10000**		**29817**			
Field Equipment:										
4WD pickups [16]	5	32000	160000	64000			96000			
Motorcycles	5	2000	10000	4000			6000			
Boats	1	2000	2000	2000						
Diesel motors & generators	4	2000	8000	2000			6000			
Tents	6	200	1200	600			600			
GPS	5	300	1500	600			900			
First-Aid kit	5	100	500	200			300			
Field tools	100	50	5000	2000			3000			
Subtotal Field Equipment			**188200**	**75400**			**112800**			
Software Licenses; Satellite Imagery										
Anti-virus site licences	15	100	1500	1000			500			
ArcView site licenses/upgrades	4	1667	6668	5001			1667			
Windows software/upgrades	20	400	8000	6000			2000			
Satellite images	50	150	7500	3000			4500			
Subtotal Software, Imagery			**23668**	**15001**			**8667**			
TOTAL			**312996**	**151712**	**10000**		**151284**			

[16] These vehicles have been budgeted based on price quotations for Toyota Hilux Diesel 4-door pickups with four-wheel drive traction.

ANNEX XI: DETAILS OF SERVICES BUDGET

Service Item	TOTAL		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Insurance	152.941		11.765	11.765	11.765	29.412	29.412	29.412	29.412
Vehicle and equipment maintenance	271.765		10.588	21.176	21.176	28.235	60.000	60.000	70.588
Printing and duplication	95.000		5.000	15.000	15.000	20.000	10.000	10.000	20.000
Telephone service	110.000		10.000	10.000	10.000	20.000	20.000	20.000	20.000
Rental of vehicles and equipment	45.000		5.000	5.000	5.000	7.500	7.500	7.500	7.500
Third-party services	125.000		15.000	15.000	15.000	20.000	20.000	20.000	20.000
Satellite images	7.500		3.000			4.500			
Mail Service	8.562		778	778	778	1.557	1.557	1.557	1.557
Sub Total Services	**815.768**		**61.131**	**78.720**	**78.720**	**131.204**	**148.469**	**148.469**	**169.057**

ANNEX XII: DRAFT TERMS OF REFERENCE FOR SUB-CONTRACTS

Biodiversity Assessment and Monitoring

Objectives:

To design and train project partners and personnel in carrying out biological assessments in the project sites to track population trends for indicator species, monitor habitat quality and provide early warning of threats.

Activities:

- Develop a strategy for communicating the results of biological monitoring to local authorities and other key stakeholders, with the objective of adapting management.
- Design a long-term participatory Biodiversity Assessment and Monitoring Program to verify natural systems integrity at the site level. The program would require:
  (a) preparing baseline ecosystem maps based on interpretation of remote sensing materials;
  (b) designing inventories for indicator species;
  (c) developing sampling tools and procedures and establishing the periodicity of conservation monitoring;
  (d) establishing the procedures for collecting of data on harvest and hunting practices; on management of medicinal plants; on customary uses of resources by indigenous and settler groups and the biological impacts of settlement expansion and agroforestry/sustainable timber management (sustainable use monitoring).
- Execute rapid biological assessments at the beginning of project implementation (month 6) to concretise baselines.
- Perform additional sampling in years 4–5 and 7 to determine biological responses to conservation/ sustainable use management.
- Make arrangements for scientific audits of results.
- Support IPN in its efforts to mobilise grants from research agencies to address priority biological research needs.

Socio-Economic Impact Appraisal and Monitoring

Objectives:

To design and execute socio-economic impact assessments, to appraise social processes likely to have a bearing on conservation outcomes; gauge the effectiveness of measures to optimize public participation and to train project staff in participatory social appraisal techniques.

Activities:

In close collaboration with the sponsoring agencies, the consultant will:

i) Examine all available material concerning project activities, farming systems, economy and social aspects of the communities and surrounding area;

ii) Collect and interpret baseline data by conducting rapid rural appraisals, leading to design of appropriate SA methods;

iii) Design a long-term Social Assessment Program to track social dynamics and stakeholder perceptions of conservation using the "livelihoods framework". This includes:

(a) Develop guidelines and procedures for involving communities in social assessments;

(b) Develop guidelines and procedures for communicating the results of field monitoring.

The program would require:

(a) the design of social assessment methods,

(b) determination of key social variables to be monitored,

(c) development of sampling tools, and

(d) training of local and UFMT staff in the use of these methods and tools.

iv) Undertake periodic process-oriented monitoring of social impacts and processes, document results and provide recommendations that may be used to adapt conservation management strategies as appropriate.

v) Document the best practices, challenges and constraints inherent in conservation processes and prepare a lessons learned document for distribution to conservation professionals and decision makers.

GIS Mapping and Database preparation

Objectives:

To interpret satellite imagery and existing macro-zoning mapping, to prepare base maps and thematic overlays for municipal land-use planning and micro-zoning in the project region, and to train project staff and stakeholders in the use and interpretation of geographical information systems (GIS).

Activities

i) Modeling and structure of spatial databases for the project (geodatabase).

ii) Development of a Geographic Information System for the project.

iii) Quality control over available spatial information.

iv) Incorporation of the following information in the database:

- Cartographic base map and thematic maps (vector data);
- Satellite images (raster data);
- Alfa-numeric data (tabular data).

v) Geoprocessing activities to support zoning studies.

vi) Generation by plotting of thematic, analytical and synthesis maps, to support zoning activities.

vii) Training for staff and stakeholders in utilization of ArcView GIS software and of the project databases.

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ANNEX XIV: SUPPLEMENTAL PROVISIONS TO THE PROJECT DOCUMENT: THE LEGAL CONTEXT

GENERAL RESPONSIBILITIES OF THE GOVERNMENT,
UNDP AND THE EXECUTING AGENCY

1. All phases and aspects of UNDP assistance to this project shall be governed by and carried out in accordance with the relevant and applicable resolutions and decisions of the component UN organs and in accordance with UNDP's policies and procedures for such projects, and subject to the requirements of the UNDP Monitoring Evaluation and Reporting System.

2. The Government shall remain responsible for this UNDP-assisted development project and the realization of its objectives as described in this Project Document.

3. Assistance under this Project Document being provided for the benefits of the Government and the people of Brazil, the Government shall bear risks of operations in respect of this project.

4. The Government shall provide to the project the national counterpart personnel, training facilities, land, buildings, equipments and other required services and facilities. It shall designate the Government Co-operating Agency named in the cover page of this document (hereinafter referred to as the "Co-operating Agency"), which shall be directly responsible for the implementation of the Government contribution to the project.

5. UNDP undertakes to complement and supplement the Government participation and will provide through the Executing Agency the required expert services, training, equipment and other services within the funds available to the project.

6. Upon commencement of the project, the Executing Agency shall assume primary responsibility for project execution and shall have the status of an independent contractor for this purpose. However, that primary responsibility shall be exercised in consultation with UNDP and in agreement with the Co-operating Agency. Arrangements to this effect shall be stipulated in the Project Document as well as for the transfer of this responsibility to the Government or to an entity designated by the Government during the execution of the project.

7. Part of the Government's participation may take the form of a cash contribution to UNDP. In such cases, the Executing Agency will provide the related services and facilities and will account annually to UNDP and to the Government for the expenditures incurred.

Participation of the Government

8. The Government shall provide to the project the services, equipment and facilities in the quantities and at the time specified in the Project Document. Budgetary provision - either in kind or in cash - for the Government's participation so specified shall be set forth in the Project budgets.

9. The Co-operating Agency shall, as appropriate and in consultation with the Executing Agency, assign a director for the project on a full-time basis. He shall carry out such responsibilities in the project as are assigned to him by the Co-operating Agency.

10. The estimated cost of items included in the Government contribution, as detailed in the Project budget, shall be based on the best information available at the time of drafting the project proposal. It is understood that price fluctuations during the period of execution of the project may necessitate an

adjustment of said contribution in monetary terms; the latter shall at all times be determined by the value of the services, equipment and facilities required for the proper execution of the project.

11. Within the given number of work-months of personnel services described in the Project Document, minor adjustments of individual assignments of project personnel provided by the Government may be made by the Government in consultation with the Executing Agency, if this is found to be in the best interest of the project. UNDP shall be so informed in all instances where such minor adjustments involve financial implications.

12. The Government shall continue to pay the local salaries and appropriate allowances of national counterpart personnel during the period of their absence from the project while on UNDP fellowships.

13. The Government shall defray any customs duties and other charges related to the clearance of project equipment, its transportation, handling, storage and related expenses within the country. It shall be responsible for its installation and maintenance, insurance, and replacement if necessary, after delivery to the project site.

14. The Government shall make available to the project - subject to existing security provisions - any published and unpublished reports, maps, records and other data which are considered necessary to the implementation of the project.

15. Patent rights, copyrights and other similar rights to any discoveries or work resulting from UNDP assistance in respect of this project shall belong to UNDP. Unless otherwise agreed by the parties in each case, however, the Government shall have the right to use any such discoveries or work within the country free of royalty and any charge of similar nature.

16. The government shall assist all project personnel in finding suitable housing accommodation at reasonable rents.

17. The services and facilities specified in the Project Document which are to be provided to the project by the Government by means of a contribution in cash shall be set forth in the Project budget. Payment of this amount shall be made to UNDP in accordance with the Schedule of Payments by the Government.

18. Payment of the above-mentioned contribution to UNDP on or before the dates specified in the Schedule of Payments by the Government is a prerequisite to commencement or continuation of project operations.

Participation of UNDP and the Executing Agency

19. UNDP shall provide to the project, through the Executing Agency, the services, equipment and facilities described in the Project Document. Budgetary provision for the UNDP contribution as specified shall be set forth in the Project budget.

20. The Executing Agency shall consult with the Government and UNDP on the candidature of the Project Manager[17] who, under the direction of the Executing Agency, will be responsible in the country for the Executing Agency's participation in the project. The Project Manager shall supervise the experts and

[17] May also be designated Project Coordinator or Chief Technical Adviser, as appropriate.

other agency personnel assigned to the project, and the on-the-job training of national counterpart personnel. He shall be responsible for the management and efficient utilization of all UNDP-financed inputs, including equipment provided to the project.

21. The Executing Agency, is consultation with the government and UNDP, shall assign international staff and other personnel to the project, as specified in the Project Document, select candidates for fellowships, and determine standards for the training of national counterpart personnel.

22. Fellowships shall be administered in accordance with the fellowships regulations of the Executing Agency.

23. The Executing Agency may, in agreement with the Government and UNDP, execute part or all of the project by subcontract. The selection of subcontractors shall be made, after consultation with the Government and UNDP, in accordance with the Executing Agency's procedures.

24. All material, equipment and suppliers which are purchased from UNDP resources will be used exclusively for the execution of the project, and will remain the property of UNDP, in whose name it will be held by the Executing Agency. Equipment supplied by UNDP shall be marked with the insignia of UNDP and of the Executing Agency.

25. Arrangements may be made, if necessary, for a temporary transfer of custody of equipment to local authorities during the life of the project, without prejudice to the final transfer.

26. Prior to completion of UNDP assistance to the project, the Government, UNDP and the Executing Agency shall consult as to the disposition of all project equipment provided by UNDP. Title to such equipment shall normally be transferred to the Government, or to an entity nominated by the Government, when it is required for continued operation of the project or for activities following directly there from. UNDP may, however, at its discretion, retain title to part or all of such equipment.

27. At an agreed time after the completion of UNDP assistance to the project, the Government and UNDP, and if necessary the Executing Agency, shall review the activities continuing from or consequent upon the project with a view to evaluating its results.

28. UNDP may release information relating to any investment-oriented project to potential investors, unless and until the Government has requested UNDP in writing to restrict the release of information relating to such project.

Rights, facilities, privileges and immunities

29. In accordance with the Agreement concluded by the United Nations (UNDP) and the Government concerning the provision of assistance by UNDP, the personnel of UNDP and other United Nations organizations associated with the project shall be accorded rights, facilities, privileges and immunities specified in said Agreement.

30. The Government shall grant UN Volunteers, if such service are requested by the Government, the same rights, facilities, privileges and immunities as are granted to the personnel of UNDP.

31. The Executing Agency's contractors and their personnel (except nationals of the host country employed locally) shall:

(a) Be immune from legal process in respect of all acts performed by them in their official capacity in the execution of the project;

(b) Be immune from national service obligations;
(c) Be immune, together with their spouses and relatives dependent on them, from immigration restrictions;
(d) Be accorded the privileges of bringing into the country reasonable amounts of foreign currency for the purposes of the project or for personal use of such personnel, and of withdrawing any such amounts brought into the country, or in accordance with the relevant foreign exchange regulations, such amounts as may be earned therein by such personnel in the execution of the project;
(e) Be accorded, together with their spouses and relatives dependent on them, the same repatriation facilities in the event of international crises and diplomatic envoys.

32. All personnel of the Executing Agency's contractors shall enjoy inviolability for all papers and documents relating to the project.

33. The Government shall either exempt from or bear the cost of any taxes, duties, fees or levies which it may impose on any firm or organization which may be retained by the Executing Agency and on the personnel of any such firm or organization, except for nationals of the host country employed locally, in respect of:

(a) The salaries or wages earned by such personnel in the execution of the project;
(b) Any equipment, materials and supplies brought into the country for the purposes of the project or which, after having been brought into the country, may be subsequently withdraw there from;
(c) Any substantial quantities of equipment, materials and supplies obtained locally for the execution of the project, such as, for example, petrol and spare parts for the operation and maintenance of equipment mentioned under (b) above, with the provision that the types and approximate quantities to be exempted and relevant procedures to be followed shall be agreed upon with the Government and, as appropriate, recorded in the Project Document; and
(d) As in the case of concessions currently granted to UNDP and the Executing Agency's personnel, any property brought, including one privately owned automobile per employee, by the firm or organization or its personnel for their personal use or consumption or which, after having been brought into the country, may subsequently be withdraw there from upon departure of such personnel.

34. The Government shall ensure: (a) prompt clearance of experts and other persons performing services in respect of this project and (b) the prompt release from customs of (i) equipment, materials and suppliers required in connection with this project and (ii) property belonging to and intended for the personal use or consumption of the personnel of UNDP, its Executing Agencies, or other persons performing services on their behalf in respect of this project, except for locally recruited personnel.

35. The privileges and immunities referred to in the paragraphs above, to which such firm of organization and its personnel may be entitled, may be waived by the Executing Agency where, in its opinion or in the opinion of UNDP, the immunity would impede the course of justice and can be waived without prejudice to the successful completion of the project to the interest of UNDP or the Executing Agency.

36. The Executing Agency shall provide the Government, through the Resident Representative, with the list of personnel to whom the privileges and immunities enumerated above shall apply.

37. Nothing in this Project Document or Annex shall be construed to limit the rights, facilities, privileges or immunities conferred in any other instrument upon any person, natural or juridical, referred to hereunder.

SUSPENSION OR TERMINATION OF ASSISTANCE

38. (a) UNDP may, by written notice to the Government and to the Executing Agency concerned, suspend its assistance to any project if, in the judgement of UNDP, any circumstance arises which interferes with or threatens to interfere with the successful completion of the project or the accomplishment of its purposes. UNDP may, in the same or a subsequent written notice, indicate the conditions under which it is prepared to resume its assistance to the project. Any such suspension shall continue until such time as such conditions are accepted by the Government and as UNDP shall give written notice to the Government and the Executing Agency that it is prepared to resume its assistance.

(b) If any situation referred to in subparagraph (a) above shall continue for a period of fourteen days after notice thereof and of suspension shall have been given by UNDP to the Government and the Executing Agency, then at any time thereafter during the continuance thereof, UNDP may, by written notice to the Government and the Executing Agency, terminate the project.

(c) The provisions of this paragraph shall be without prejudice to any other rights or remedies the UNDP may have in the circumstances, whether under general principles of law or otherwise.

FINANCIAL AND ACCOUNTING ARRANGEMENTS

A. General

1. The Implementing Agency (hereinafter referred to as "the Government") is responsible to the Administrator of UNDP for the custody and proper use of funds advanced to it by UNDP.

2. The Government will maintain separate accounts (including a separate bank account) for UNDP resources. It will use the funds provided to it only for inputs financed by UNDP, in accordance with the project budget covering UNDP's contribution (Part IV of the Project Document).

3. Advances of funds to and payments by UNDP on behalf of Governments are governed by the applicable UNDP financial regulations, rules and directives regarding the utilization of currencies.

4. The Government will provide UNDP with financial statements of UNDP funds received and spent, prepared in accordance with the UNDP financial year (1 January to 31 December) in English. The periodicity and content of such statements are set out below. Annual financial statements will be audited by the legally recognized auditors of the Government's own accounts. To the extent feasible, the audit principles and procedures prescribed for the United Nations will be applied by the auditors, who will provide audit reports annually, together with the reports set out below.

5. For the purpose of reporting to UNDP, US dollar equivalents will be calculated at the United Nations operational rates of exchange. The Resident Representative of UNDP will inform the Government of such United Nations rates of exchange and of changes thereto when they occur.

B. Advance of Funds

6. Advances will be made by the Resident Representative at the request of the Government in accordance with the Project Document and in the required currencies, subject to the conditions set out below.

7. The Government will indicate its cash requirements from UNDP funds for each period of the schedule of advances included in Part IV of the Project Document at least two weeks before payment is due (Attachment 1 of this annex, Request for Advance of Funds). Advances will be made by UNDP at the time indicated in the schedule of advances, in the amounts and currencies requested by the Government (see also paragraph 9 below for requests for cash advances in currencies not available to the UNDP field office).

8. If the schedule of advances included in the project document no longer reflects actual requirements for funds, a new schedule will be prepared by the Government in consultation with the Resident Representative, in accordance with the format indicated in Attachment 5 of this annex, Schedule of Advances. Advances should normally be sufficient to cover anticipated cash requirements for a maximum of three months.

9. Advances in Local Currency. Local currency advances to the Government will normally be made by the Resident Representative.

10. Advances in Other Currencies. Advances to the Government in US dollars will be made by the UNDP Resident Representative if this currency is available to him/her. The Resident Representative will arrange for advances in currencies no available to him/her to be made by UNDP Headquarters or other field offices, as deemed appropriate.

C. Direct Payment by UNDP

11. At the request of the Government, UNDP will after verification of the supporting documentation, make payments directly to individuals or firms providing UNDP-financed services or goods. The requests will be addressed to the UNDP Resident Representative, who will either arrange for the payments to be made by his/her office or by UNDP Headquarters. The requests will indicate payee, amounts and currencies required, justification for the request and payment instructions reflecting payee's bank, its address and the account number.

12. The Resident Representative will provide the Government with statements of direct payments made by UNDP within 15 days following 30 April, 31 August and 31 December, for incorporation in the Project Delivery Report in accordance with paragraph D.13(b) below.

D. Periodic Financial Statements

13. The Government will furnish the Resident Representative with certified financial statements within 30 days following 30 April and 31 August and within 60 days following 31 December. The statements will include the following:

a) Status of Funds Advanced by UNDP (Attachment 2 of this Annex)

The statement will be submitted for each period indicated above and will be prepared in the currency of the advance. Separate statements will be issued where different currencies have been advanced. Each statement will reflect cumulatively for the year the amount of funds available at the beginning of the year, funds advanced by UNDP, funds expended by the Government during the reporting period and the resulting balance at the end of that period. The statement will also detail expenditure incurred by month in local currency and the US dollars equivalent calculated at the applicable UN operation rate of exchange.

b) Project Delivery Report (Attachment 3 of this Annex)

The report will be submitted for each period indicated above and will reflect cumulative current year expenditure classified according to the items listed in the approved project budget and incorporate the expenditure incurred by the Government and, where appropriate, the expenditure statement of the Cooperating Agency, if any, and the statement of direct payments made by UNDP.

c) Annual Report of UNDP- financed Non-expendable Equipment (Attachment 4 of this Annex)

The Government will furnish the Resident Representative , for the year to 31 December, within 60 days following that date and together with other financial statements due at the date, with an annual report of non-expendable equipment. The report will include all UNDP-financed non-expendable equipment furnished to the project during the year.

Non-expendable equipment purchased by the Co-operating Agency, if any, and furnished to the project, will also be included. The report will describe each item in detail, list the identification number given by the Government and serial or registration number assigned by the maker and reflect the cost at the US dollars equivalent at the time of purchase calculated at the UN operational rate of exchange.

d) Expenditure Statement for Jointly Financed Projects

In the case of joint financing of project activities by the Government and UNDP and, as the case may be, other sources of assistance, the certified financial statements referred to above shall be accompanied by a separate statement reflecting expenditure for the full project covering the same period as the certified financial statements. To this expenditure statement should be added an indication of the apportionment by the Government of the reported expenditure to UNDP's contribution and other available funds.

14. If the Government cannot submit the financial statements on the date on which they are due, it will inform the Resident Representative of the reasons and indicate the planned submission date.

E. Government's Annual Audit Financial Statements

15. A certified and audited annual financial statement of the status of funds advanced by UNDP, as described in paragraph D.13(a) above, will be made available by the Government to the Resident Representative within 120 days after the end of the calendar year.

16. The financial system will be audited and attested to the entity specified in paragraph 4 above.

F. Government Final Financial Statements

17. Upon financial completion of UNDP assistance to a project, the Government will provide final financial statements to cover the period 1 January to the date of either financial completion or refund of the unspent balance of UNDP funds (paragraph 18 below refers), if any. The financial statements will be audited so as to conform to the requirements set out in paragraph E above. The format given in Attachment 2 and 3 of this annex should be used . The statements will be provided within 120 days from the date of financial completion to the Director, Division of Finance of UNDP, with copies to the UNDP Resident Representative.

18. If there is an unspent cash balance of UNDP funds held by the Government, that balance will be refunded by the Government in the currency of the advance not later than 30 days after the date of financial completion.

G. Audit by UNDP

19. All accounts maintained by the Government for UNDP resources may be audited by the UNDP internal auditors and/or the United Nations Board of Auditors or by public accountants designated by the United Nations Board of Auditors.

Attachment 1

GOVERNMENT OF BRAZIL

REQUEST FOR ADVANCE OF FUNDS FROM UNDP

FOR PROJECT N° BRA/ /

for the Period from 19 to 19

	Cash in Hand at Beginning	Estimated Disbursements	Net Advance	Payment Details		
Currency	of Period	to End of Period	Required	Bank Name and Address	Account Title	Number

Certified:
Name
Title
Government Agency (Department)

Attachment 2

GOVERNMENT OF BRAZIL

STATUS OF FUNDS ADVANCED BY UNDP [18]
for the period 1 January to 19
(in currency)

A. Summary of Funds Received and Expended	**Amount (in Currency of Advance)**
Balance at 1 January 19	
Add: Advances received from UNDP	
Total Funds Available for Project Purposes	
Deduct: Total Expenditure for Year to Date	[1]
Balance at 19	
Represented by:	
Cash in Bank	
Cash on Hand	
Balance at 19	

B. Summary of Expenditure by Month

	Expenditure (in Currency of Advance)	**UN Operational Rate of Exchange**	**Expenditure (in US$ Equivalent)**
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Total	[19]		
Certified correct by:		Approved by:	
Name		Name	
Chief Accountant		Title	
Government Agency (Department)		Government Agency (Department)	

AUDIT CERTIFICATE
(As issued and signed by the Auditors)
REQUIRED ONLY FOR ANNUAL AUDITED
AND FINAL AUDITED FINANCIAL STATEMENTS

Attachment 3

GOVERNMENT OF BRAZIL

PROJECT TITLE: **PROJECT Nr.:**

[18] A separate statement is required for each currency advanced by UNDP.
[19] These amounts should be the same.

PROJECT DELIVERY REPORT
FOR FUNDS PROVIDED BY UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)
FOR THE PERIOD 1 JANUARY TO 19

(Prepared in US Dollars)

			EXPENDITURE			
Budget Line	**Description**	**Budget for year**	**Government**	**UNDP Direct Payments**	**Co-operating Agency**	**Total**
(1)	(2)	(3)	(4)	(5)	(6)	(7)
99.00	TOTAL		[20]			

Certified Correct by:	Approved by:
Name	Name
Chief Accountant	Title
Government Agency (Department)	Government Agency (Department)

AUDIT CERTIFICATE
(As issued and signed by the Auditors)
REQUIRED ONLY FOR ANNUAL AUDITED
AND FINAL AUDITED FINANCIAL STATEMENTS

Attachment 4

GOVERNMENT OF BRAZIL

ANNUAL REPORT OF UNDP - FINANCED NON-EXPENDABLE EQUIPMENT [21]

[20] Total of US dollars equivalent shown in each Attachment 2.

[21] Includes those items of equipment valued at $ 400 or more, and with a serviceable life of at least 5 years, and those items of equipment although valued at less than $ 400 which are office furniture, filing cabinets, office machines,

FOR PROJECT **Nr.**

For the Year Ended 31 December 19

Description	Government Identification Number	Maker's Serial or Registration Number	Cost in US Dollars [22]
TOTAL			

Certified by:

Name
Title
Government Agency (Department)

Attachment 5

PROJECT NUMBER AND TITLE

SCHEDULE OF ADVANCES [23]

attractive items (such as cameras, projectors, stop watches, briefcases) or other similar items as determines by the Government.

[22] US dollars equivalent at time of purchase calculated at the UN operational rate of exchange.

[23] To be included in the project document immediately following the budget for UNDP's contribution (Part IV). Advances should only cover anticipated cash requirements for a maximum of three months.

US$

A. FUNDS ADVANCED TO DATE

B. FUNDS TO BE ADVANCED IN FORTHCOMING 12 MONTHS [24]

i. To Government

DATE	AMOUNT

TOTAL

ii. To Co-operating Agency

C. FUNDS TO BE ADVANCED IN SUBSEQUENT PERIODS

TOTAL ALLOCATION PER PROJECT BUDGET (LINE 99)

[24] The period to be covered should be the 12 months following the date of approval of the project revision.

ANNEX XV: AUDIT REQUIREMENTS

UNITED NATIONS DEVELOPMENT PROGRAMME
BRAZIL COUNTRY OFFICE

PROGRAMME AND PROJECTS MANUAL

AUDIT REQUIREMENTS FOR GOVERNMENT EXECUTION OF UNDP FUNDED PROJECT

PPM Section 30503, subsection 8.0

February 1991

UNITED NATIONS DEVELOPMENT PROGRAMME
BRAZIL COUNTRY OFFICE

Audit Requirements for Government Execution of UNDP funded Projects

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UNITED NATIONS DEVELOPMENT PROGRAMME
BRAZIL COUNTRY OFFICE

AUDIT REQUIREMENTS FOR GOVERNMENT EXECUTION OF UNDP FUNDED PROJECTS

1.0 General

1.1 Accountability of Governments

Governments which execute UNDP projects are responsible for the management of all UNDP resources allocated to a project. In this capacity, a government is accountable to the Administrator for the entirety of UNDP resources under its management.

The administration by government of funds obtained from or through UNDP shall be carried out under their respective financial regulations, rules, practices and procedures to the extent that they provide adequate control over the resources. Where the financial governances of a government do not provide the required guidance, those of UNDP shall apply.

Each government shall maintain such accounts and records as are necessary to enable it to report on the financial status of funds obtained fro. or through UNDP.

To ensure the existence of data required for UNDP management purposes, the Administrator is authorized to specify the basis, content and periodicity of reports on funds obtained from or through UNDP which are to be submitted by governments.

1.2. General Audit Requirement

Article XVII f the United Nations Development Programme Financial Regulations pertaining to external audit has been annexed for information to these requirements and shall, mutatis mutandis apply to audits of government-executed project.

The Administrator shall ensure that governments executing UNDP projects shall require their auditors to follow, to the extent feasible, the audit principles and Procedures prescribed for the United Nations with respect to funds obtained from or through UNDP and shall submit audit reports annually together with the reports specified in the project document and those mentioned in 3.3 below.

1.3 Audit Authority

Audits of government-executed projects shall be conducted by the legally recognized auditor of the government or by a commercial auditor engaged by the government.

2.0 Purpose of the Requirements

The purpose of these audit requirements is to provide auditors (herein after referred to as "the Auditor") of government-executed with the UNDP accounting, reporting and auditing framework for government-executed projects which are discussed under the sections which follow.

3.0 Financial Accounting, Monitoring and Reporting Procedures

3.1 Accounting Controls

Adequate control systems should bee in place within a project management structure. A review of he general control environment as well as the specific internal accounting controls that are being used to support and validate transactions should be undertaken in order to determine whether satisfactory measures exist and are being followed to prevent losses or detect potential risks.

a) Review of General Controls

The general control environment includes a number of key project management factors which indicate whether or not the project is being executed in a conducive environment. These factors include:

- Management approach
- Organization structure
- Record-keeping
- Personnel
- Delegation
- Communication
- Authority and responsibility
- Policies and procedures

b) Review of Internal Accounting Controls

The internal controls over responsibility, authority, certifying, recording, documenting and segregation of duties are maintained in order to reduce or eliminate risks associated with the financial operations of a project. The certification process is singled out as most significant to UNDP.

c) Certification

As part of fulfilling its fiduciary responsibility for the management of UNDP resources, governments agree to follow a process that requires the designated authorized official (hereinafter referred to as the project management) to provide written certification is required by UNDP from the project management for:

- Requests for advances of project funds;
- Requests for UNDP to disburse project funds directly; and
- Project financial reports.

The certification function is designated by the government executing body to the personnel managing the project. This authority should be in writing.

3.2 Funding of Projects

a) Requests for Advances of UNDP Funds

Funding of projects is made through direct advances to the government whereby they receive and disburse project funds directly. In order to receive an advance, a project management completes and certifies a Request for Advance of Funds from UNDP form. The Request is submitted to the resident representative.

There should be an adequate system of internal controls over requests for advances. At a minimum, the controls should ensure that:

- The Form is prepared accurately;
- The certification is by the designated government official;
- Prior advances have been accounted for; and
- The advances requested are reasonable in line with the provisions of the project budget and the work plan.

b) Requests for Direct Payments by UNDP

A second method of funding government-executed projects is by "Direct Payment". Through this method project managements may request UNDP resident representatives to directly disburse project on their behalf. Resident representatives may do so from their own bank accounts or they may refer the request to UNDP headquarters for action.

In making direct payments, UNDP relies on the certification and on the internal controls and records maintained by a project management.

In requesting UNDP to make direct payments, the government is to complete the Direct Payment Request form. This form contains the following certification:

"The undersigned authorized government official hereby certifies that the payment being requested has not previously been made and that it will be:

- Made in accordance with the project document;

- Made for goods or services that have been delivered for the satisfaction of the government or will be delivered pursuant to the terms and conditions of the contract; and

- Made on the basis of original supporting documentation that is, or will be, on file with the government or UNDP".

Original Supporting Documentation

Original supporting documentation may be attached by project management to the Direct Payment Request or, alternately, original supporting documentation may be generated by the resident representative as a consequence of a Direct Payment Request for procurement which produce invoices. Thus, direct payment transactions may be straight forward payment actions or, they may be complex. In which case, appropriate systems for procurement for example, should be in place, e.g., requisitions and purchase orders and for contracting, e. g., bidding.

Resident Representatives are to provide project managements with copies of Disbursement Vouchers and any other supporting documentation for all direct payments transactions they undertake.

c) Co-operation Agency Expenditures

At the request of governments, United Nations executing agencies may be called upon to executed portions of or the entire project. When this occurs, the agencies are referred to as co-operating agencies.

Co-.operating agencies receive project funds directly from UNDP due to standard arrangements between United Nations agencies and UNDP. This does not detract from the fact that in the agreement which is entered into by governments and co-operating agencies, it is agreed, inter alia, that are accountable to government. for all inputs and activities they implement.

3.3 Financial Reporting by Governments

A government is to manage and be accountable for all UNDP resources allocated to a government-executed project. This management and accountability applies to disbursements made by governments through advances they receive, for direct payments by UNDP and for cooperating agency expenditure. In this regard, governments are to maintain appropriate records to record financial transactions which are undertaken by others on their behalf.

For advances, governments are required to prepare, certify and submit to UNDP resident representatives each calendar quarter the Government Disbursement Report and Reconciliation of Outstanding UNDP Advance/Status of Fund reports. The year-end financial report called Combined Delivery Report (CDR) is prepared by UNDP headquarters. The CDR is a consolidation of expenditure incurred by governments, UNDP field office/headquarters direct payments and co-operating agencies expenditure. The CDR is transmitted to governments' project

managements through the UNDP resident representatives. Upon receipt, project managements are to verify and certify the CDRS. The project .management certified CDR should be submitted to the auditors for the financial audit.

The Government Disbursement Report and Reconciliation of Outstanding UNDP Advances/Status of Funds report by project and currency types are to be submitted to UNDP through the resident representative by the 15th day following the end of the quarter. The certification of financial reports should. be by the authorized government official.

The certification on financial reports attests to the, propriety of disbursements and to the project balances held by a government The certification also serves as a re-affirmation of liability in the event disbursements made by a government are disallowed as a result of an audit.

In addition to the tests of the books and records, the internal controls in the accounting and reporting process which may include the following should be evaluated:

- Authorization of transaction.;
- Recording of transactions;
- Procedures for budgetary classification of transactions;
  - Closing procedures; and
  - Report preparation and review procedures.

a) Verifying the Government Disbursement Report

This report is designed to provide U14DP with specific information regarding the utilization of UNDP funds advanced to a government. The report also shows the amount of UNDP funds available to a government by budget component and line. Verification of this report for each quarter during the period under review should confirm that:

- The "Annual Budget" indicated on the report corresponds to the government budget approved in the most recent project budget/revision document;

- The "Year-to-Date" disbursement equals the "Disbursements for the Quarter" plus the "Year-to-Date" shown on the prior quarter's report;

- The "Disbursements" for each month shown on page two of the report agrees with the project's accounting ledgers;

- The report is mathematically correct; and

- The "Certification" on the report is signed by the authorized government official.

b) Verifying the status of Fund/Reconciliation of Outstanding Advances Report

The purpose of this report is to show the amount of UNDP funds advanced to but not yet disbursed by the government. Verification of this report for each quarter during the period under review should confirm, that:

- The "Outstanding UNDP Advance (beginning of year)" agrees with the closing balance from the report for the previous year.

- The amount of "UNDP Advances Received This Quarter" agrees with the field office records.

- The amount shown on the line "UNDP Advances Received in Prior Quarters (year-to-date)" is the same as the amount that appears on the "Total UNDP Funds Received" (year-to-date) line of the prior quarter's report.

- The amount of "Total Disbursements (Year-to-date)" equals the amount taken from the prior quarter's plus the amount of disbursements for the current quarter (as shown on the Government Disbursement Report).

- The amount shown on the line "Outstanding UNDP Advance" in Step 1 equals the amount shown on the same line in Step 2.

- The report is mathematically correct.

- The report is Certified by the authorized government official.

3.4 Project Monitoring Evaluation and Reporting

Reference should be made to UNDP's project monitoring, evaluation and reporting (MER) requirements which are contained in Section 30600 in this PPM. The requirements equally apply to governments which execute projects. It is the responsibility of governments to plan and perform correctly all of the MER requirements for the projects they execute. Thus, a review of MER should be should be incorporated in the audit scope. The MER audit scope should be limited to ascertaining that MER activities were planned and undertaken. The reference document for this exercise is the Country Programme Management Plan (CPMP). A copy of this document is to be obtained from the UNDP resident representative in advance of the audit.

3.5 Project Equipment

a) Ownership

The type of equipment, the objective and the duration of the project determines the title of ownership. UNDP retains the title of ownership when the equipment is highly specialized; when the project does not attain its objectives or when the equipment may be utilized in a subsequent phase of the project. Otherwise, after delivery, the equipment would become the property of the government as soon as the transfer formalities are completed at the end of each year.

b) Non-expendable Property Ledger

Governments should maintain a non-expendable property ledger for the purpose of recording the acquisition and disposition of property and equipment funded by UNDP. This

ledger should contain information on all property and equipment whether purchased directly by governments from funds advanced to it; or by the UNDP; or a co-operating agency on behalf of the government.

c) Annual Inventory Report

Governments are to perform annual physical inventory of non-expendable equipment. They are to are to furnish UNDP resident representatives with reconciled annual reports of non-expendable property purchased during the year within 60 days following 31 December of the year.

d) Transfer of Equipment

Upon report and verification of the annual report of non-expendable equipment, a formal transfer of the equipment to the government should be agreed upon by the resident representative and the government. The transfer is undertaken by an exchange of letters or transfer document.

4.0 Audit Objectives and Scopes

The overall objective for an audit of a government executed project is to obtain reasonable assurance that UNDP's resources are being managed by government in accordance with: governments financial regulations, rules, practices and procedures; the project document; the project implementation, monitoring, evaluation and reporting procedures and the accounting and financial reporting procedures for government execution which are contained herein in Sections 30500 and 30600.

In managing UNDP resources a government has fiduciary and compliance responsibilities including adherence to UNDP reporting procedures. Thus, an audit of a government-executed project must fulfill a set of audit objectives designed to provide UNDP with reasonable assurance that:

- Project disbursements are made in accordance with the project document;
- Project disbursements are valid and supported by adequate documentation;
- Project financial reports are fair and accurately presented;
- An appropriate management structure, internal controls and record-keeping systems are maintained by the project management and can be relied upon;
- Project monitoring and evaluation are undertaken and reports are prepared as required; and
- Project non-expendable equipment procurement, use, control and disposition are in accordance with the requirements

As a result, UNDP identifies its government execution audit scopes to be: financial operations and controls; adequacy of the management structure; MER; and equipment use and control.

The audit shall be conducted in conformity with generally accepted common auditing standards and in accordance with the Auditor's professional judgment.

5.0 The Audit

UNDP expects that the audit of government-executed projects will meet the standards and terms of reference established for the United Nations Board of External Auditors which are described in Annex I to these requirements, "Article XVII of the UNDP Financial Regulations".

5.1 Audit Report

A separate report should be issued for each project . that is audited. The CDR which is the basis for the financial review should be signed and stamped by the Auditor and attached to the audit report.

In particular, the report should address, inter alia, those instances where :

- Disbursements have not been made in accordance with the project document;
- Financial reports are not fairly presented or accurate;
- Disbursements are not valid or are not supported by adequate documentation;
- There are material weaknesses with the management, in the structure and controls; and
- There are improper certifications from the government.

The audit reports should be submitted to governments for their review and release to resident representatives.

5.2 Observations, Findings and Recommendations

The significant findings and observations should be mentioned in a section of the report. These findings and observations should be discussed with project managements and their comments should be included in the audit report.

Specific recommendations pertaining to the audit findings should be made.

5.3 Audit Opinion

An audit opinion should be rendered on each of the audit scopes mentioned in paragraph 4.0 above.

When the review of a scope shows no findings of a material nature, unqualified language to that effect should be used.

When the review of a scope results in findings of a material adverse nature such that reasonable assurance as to the proper management of UNDP resources by a agovernment cannot be provided, qualified language to that effect should be used.

6.0 Accountability

A government execution audit process has been designed to ensure that audits of government-executed projects are undertaken as required by the UNDP Financial Regulations and Rules. The overall audit process requires the following:

- Action by the operational and monitoring units at UNDP headquarters;
- Action by governments and resident representatives in the field; and
- Adherence to the audit approach.

6.1 Responsibility of UNDP Headquarters

a) The Regional Bureaux

Regional Bureaux are to pursue a follow-up with resident representatives in order to ensure that the financial accounting, auditing and reporting procedures, the identity f the proposed auditing body and the source of audit funding are determined at the project formulation stage and included in each government-executed project document. Where these provisions are not already provided for in existing projects documents, the documents should be revised accordingly.

b) The Division Of Finance (DOF)

DOF is to maintain, inter alia, a complete data base of all government-executed projects and up-to-date financial data and reports on government execution.

DOF is to ensure that the Accounting and Financial Reporting Procedures for government execution are available to all governments which execute projects. DOF is to monitor the timely receipt of quarterly financial reports from governments and likewise, DOF is to provide governments with timely " Combined Delivery Reports".

DOF is to review the capabilities of governments to manage the financial activities of government execution and where applicable, DOF is to provide training to government project personnel.

c) Division for audit and Management Review (DAMR)

A Government Execution Audit Section is established within the DAMR. The principal functions of the section are to ensure the effective discharge of audits of government-executed projects; to undertake reviews of the modality as it is managed by governments, headquarters and resident representatives; to monitor, evaluate and execute audits of government-executed projects; and to make recommendations aimed towards implementation of the modality in accordance with its requirements.

6.2 Responsibilities, of Governments

Governments which are executing agencies are to adhere to the provisions for audits contained in project documents. It is primarily a government's responsibility to identify and appoint the auditing body, to fund the cost of an audit out of government's resources and to ensure that the audit is performed in accordance with generally accepted common auditing standards and completed within 120 days of the end of the year.

Governments are the recipients of the auditors reports. After their review and comments, governments are to forward three copies of the audit reports to resident representatives.

6.3 Responsibilities of Resident Representatives

UNDP resident representatives are primarily responsible for the following:

- Ensuring that project documents include the government's responsibility for accounting, auditing, and identification of the proposed auditing body;

- In consultation with governments, UNDP resident representatives have a major role in the selection process of projects to be audited;

- Ensuring that governments comply with audit requirements when government-executed projects are selected for audit;

- Ensuring the receipt and distribution to headquarters of three copies of audit reports; and

- For maintaining an appropriate follow-p until adverse findings and recommendations contained in an audit report are corrected.

Three copies of each project's audit report should be submitted to the Government Execution audit Section, DAMR, UNDP headquarters no later that 120 days after the end of the calendar year.

6.4 The Audit Approach

The major aspects of the audit approach are:

- Selecting projects for audit;
- Monitoring the conduct of an audit; and
- Following up on the auditor's findings and recommendations.

a) Selection Criteria

The UNDP Financial Regulations and Rules include the provision for audit of each government-executed project. This is also stated in each project document. Pending a review of the provision, it is accepted that audits of all of the projects within a country's government-executed projects portfolio may not be practical. Thus, an understanding has been reached with the United nations Board of auditors that each government should ensure that no less than 80 per cent

of its annual government-execution expenditure be audited. The selection of projects to be audited, whose expenditure would make up the 80 per cent, is to be decided by governments, in consultation with resident representatives and DAMR, if necessary.

b) Liaising with the Auditor

The Government Execution Audit Section, DAMR is to liaise with the auditors ascertaining in the process that the auditors are availed of all relevant UNDP Financial Regulations, Rules, Procedures and Guidelines, and have access to project management financial and administrative records. In essence, the Section is to ensure that the auditor's work is facilitated.

c) Follow-up on Audit Findings

Project managements should ensure that actions are taken to correct adverse audit findings and the Government Execution audit Section is to maintain a follow-up on the matter with UNDP resident representatives.

7.0 Source of Audit Funding

Governments are primarily responsible for funding the cost of audits. Under exceptional circumstances UNDP may be willing to approve the use of "add-on" funds, when available, for audit costs.

"Add-on" funds requirement for audits should be determined at the stage of project formulation for new projects and prior to project budget revision for existing projects. Requests for "add-on" funds should be submitted in advance to the Director, Division of Finance, UNDP headquarters.

UNDP/FIN REG & Rules/1

I. EXTERNAL AUDIT

Article XVII. External Audit

Regulation 17.1: The External Audit provisions of Article XII of the United Nations Financial Regulations have been annexed for information to these Regulations and shall, mutatis mutandis, apply to UNDP, except that:

a) The reports of the Board of Auditors, together with the audited financial statements and the comments thereon of the Advisory Committee, shall also be transmitted to the Members of the Governing Council;

b) Executing agencies which are organizations of the United Nations system shall transmit to the Administrator for submission to the Governing Council annual accounts showing the status of funds allocated to them by the Administrator for the execution of UNDP activities. Such accounts shall bear audit certificates from the organizations' External Auditors and shall be accompanied by their reports, if any, and copies of any relevant resolutions adopted by their legislative or governing bodies;

c) In submitting the above annual accounts to the Governing Council, the Administrator shall comment on the Auditors' substantive observations and on their follow-up;

d) Notwithstanding (b) and c) above, executing agencies which are organizations of the United Nations system and which have adopted a biennial financial period but which do not receive audit certificates covering the accounts of the first year of the biennum shall submit interim accounts for that year. Such interim accounts may be unaudited, provided that audited accounts are submitted covering both years of the biennial financial period.

Regulation 17.2 The Administrator shall ensure that Governments which are executing agencies, and other parties selected for project implementation under Regulation 8.10(e), shall require their auditors to follow, to the extend feasible, the audit principles and procedures prescribed for the United Nations with respect to funds obtained from or through UNDP and shall submit sudit reports annually together with the reports specialized in the project document and under Article XV of these Regulations.

Information Annex

UNITED NATIONS FINANCIAL REGULATIONS

ARTICLE XII. EXTERNAL AUDIT

Appointment of a Board of Auditors

Regulation 12.1: The General Assembly shall appoint a Board of Auditors to perform the audit of the accounts of the United Nations. This Board shall consist of three members, each of whom shall be the Auditor-General (or officer holding the equivalent titles) of a Member State.

Tenure of office of the members of the board of Auditors

Regulation 12.2: The members of the Board of Auditors shall be elected for a three-year term of office. The term of office shall commence on 1 July and expire on 30 June three years subsequent thereto. The term of office of one of the Members shall expire each year. Consequently, the General Assembly shall elect each year a member to take office from 1 july of the following year.

Regulation 12.3: If a member of the Board of Auditors ceases to hold office as Auditor-General (or equivalent title) in his own country, his tenure of office shall thereupon be terminated and he shall be succeeded as a member of the Board by his successor as Auditor-General. A Board ember may not otherwise be removed during his tenure of office except by the General Assembly.

Scope of Audit

Regulation 12.4: The audit shall be conducted in conformity with generally accepted common auditing standards and, subject to any special directions of the General Assembly, in accordance with the additional terms of reference set out in the annex to the present Regulatio ns.

Regulations 12.5: The board of Auditors may take observations with respect to the efficiency of the financial procedures, the accounting system, the internal financial controls and, in general, the administration and management of the Organization.

Regulation 12.6: The Board of Auditors shall be completely independent and solely responsible for the conduct of the audit.

Regulation 12.7: The Advisory Committee may request the Board of Auditors to perform certain specific examinations and issue separate reports on the results.

Facilities

Regulation 12.8: The Secretary-General shall provide the Board of Auditors with the facilities it may require in the performance of the audit.

Regulation 12.9: For the purpose of making a local or special examination or of effecting economies in the audit cost, the Board of Auditors may engage the services of any national Auditor-General (or equivalent title) or commercial public auditors of known repute, or any other person or firm who, in the opinion of the Board, is technically qualified.

Regulation 12.10: The Board of Auditors shall issue a report on the audit of the financial statements and relevant schedules relating to the accounts for the financial period, which shall include such information as the Board deems necessary with regard to matters referred to in regulation 12.5 and in the additional terms of reference.

Regulation 12.11: The reports of the Board of Auditors shall be transmitted to the General Assembly through the Advisory Committee, together with the audited financial statements, in accordance with any directions given by the Assembly. The Advisory Committee shall examine the financial statements and the audit reports and shall forward them to the Assembly with such comments as it deems appropriate.

Audit assignment allocation

Regulation 12.12: The Board of Auditors shall, subject to the concurrence of the Advisory Committee, allocate and rotate the audit work among the members of the Board.

UNITED NATIONS FINANCIAL REGULATIONS

ANNEX

Additional terms of reference governing the audit of the United Nations

1. The Board of Auditors shall perform jointly and severally such audit of the accounts of the United Nations, including all trust funds and special accounts, as it deems necessary in order to satisfy itself:

    a) That the financial statements are in accord with the books and records of the Organization;

    b) That the financial transactions reflected in the statements have been in accordance with the Rules and Regulations, the budgetary provisions and other applicable directives;

    c) That the securities and moneys on deposit and on hand have been verified by certificate received direct from the Organization's depositaries or by actual count;

    d) That the internal controls, including the internal audit, are adequate in the light of the extent of reliance placed thereupon;

    e) That procedures satisfactory to the Board of Auditors have been applied to the recording o f all assets, liabilities, surplus and deficits.

2. The Board of Auditors shall be the sole judge as to the acceptance in whole or in part of certifications and representations by the Secretary-General and may proceed to such detailed examination and verification as it chooses of all financial records, including those relating to supplies and equipment.

3. The Board of Auditors and its staff shall have free access at all convenient times to all books, records and other documentation which are, in the opinion of the Board of Auditors, necessary for the performance of the audit. Information which is classified as privileged and which the Secretary-General (or his designated senior officials) agrees is required by the Board for the purposes of the audit and information classified as confidential shall be made available on application. The Board of Auditors and its staff shall respect the privileged and confidential nature of any information so classified which has been made available and shall not make use of it except in direct connexion with the performance of the audit. The Board may draw the attention of the General Assembly to any denial of information classified as privileged which, in its opinion, was required for the purpose of the audit.

4. The Board of Auditors shall have no power to disallow items in the accounts but shall draw to the attention of the Secretary-General for appropriate action any transaction concerning which it entertains doubt as to legality or propriety. Audit objections, to these or any other transactions, arising during the examination of the accounts shall be communicated immediately to the Secretary-General.

5. The Board of Auditors (or such of its officers as it may designate) shall express and sign an opinion on the financial statements in the following terms:

"We have examined the following appended financial statements, numbered … to …, properly identified, and relevant schedules of (name of the body) for the financial period ended 31 December 19… Our examination included a general review of the accounting procedures and such tests of the accounting records and other supporting evidence as we considered necessary in the circumstances."

And which states, as appropriate, whether:

a) the financial statements present fairly the financial position as sat the end of the period and the results of its operations for the period then ended;
b) The financial statements were prepared in accordance with the stated accounting principles;
c) The accounting principles were applies on a basis consistent with that of the preceding financial period;
d) Transactions were in accordance with the Financial Regulations and legislative authority.

6. The report of the Board of Auditors to the General Assembly on the financial operations of the period should mention:

a) The type and scope of its examination;
b) Matters affecting the completeness or accuracy of the accounts, including where appropriate:

(i) Information necessary to the correct interpretation of the accounts;
(ii) Any amounts which ought to have been received but which have not been brought to account;
(iii) Any amounts for which a legal or contingent obligation exists and which have not been recorded or reflected in the financial statements;
(iv) Expenditures nor properly substantiated;
(v) Whether proper books of accounts have been kept - where in the presentation of statements there are deviations of a material nature from the generally accepted accounting principles applied on a consistent basis, these should be disclosed;

c) Other matters which should be brought to the notice of the General Assembly, such as:

(i) Cases of fraud or presumptive fraud;
(ii) Wasteful or improper expenditure of the Organizations's money or other assets (notwithstanding that the accounting for the transaction may be correct);
(iii) Expenditure likely to commit the Organization to further outlay on a large scale;
(iv) Any defect in the general system of detailed regulations governing the control of receipts and disbursements or of supplies and equipment;
(v) Expenditure not in accordance with the intention of the General Assembly after making allowance for duty authorized transfers within the budget;

(vi) Expenditure in excess or appropriations as amended by duly authorized transfers within the budget;
(vii) Expenditure not in conformity with the authority which governs it;

d) The accuracy or otherwise of the supplies and equipment records as determined by stock-taking and examination of the records;

e) If appropriate, transactions accounted for in a previous year concerning which further information has been obtained or transactions in a later year concerning which it seems desirable that the General Assembly should have early knowledge.

7. The Board of Auditors may make such observations with respect to its findings resulting from the audit and such comments on the Secretary-General's financial report as it deems appropriate to the General Assembly or to the Secretary-General.

8. Whenever the scope of audit of the Board of Auditors is restricted, or whenever the Board is unable to obtain sufficient evidence, it shall refer to the matter in its opinion and report, making clear in its report the reasons for its comments and effect on the financial position and the financial transactions as recorded.

9. In no case shall be Board of Auditors include criticism in its report without first affording the Secretary-General an adequate opportunity of explanation on the matter under observation.

10. The Board is not required to mention any matter referred to in the foregoing which in its opinion, is insignificant in all respects.