

ITTO PROJECT COMPLETION REPORT**Project Identification**

- a) Title: Integrated Development of the Western Amazonian based in the Forest Resources. Phase II. Technology to sustained uses of forest raw materials.
- b) Serial Number: PD 94-90 Rev. 3 (I)
- c) Executing Agency: Fundação de Tecnologia do Estado do Acre (FUNTAC)
- d) Host Government: Brazil
- e) Starting Date: August 1993
- f) Actual Duration (months): 128 (August 1993 – April 2004)
- g) Actual Project Costs (US\$): 3,425,000.00
Source of Funds: ITTO Contribution – US\$ 1,875,000.00
Brazilian Government – US\$ 1,550,000.00

Part I: Executive Summary**1. Project Background**

The Project PD 94/90 Rev. 3 (I) was approved by the 10th Session of the ITTC in May 1991 in Quito, Ecuador and the first disbursement was made in August 1993. However, a number of delays in project implementation resulted due to administrative issues. The project was implemented by the Fundação de Tecnologia do Estado do Acre (FUNTAC) and funded by the International Tropical Timber Organization as well as, as a counterpart, this Executing Agency received also funds from the Government of State of Acre, which both funds sources helped the FUNTAC during its activities related to this project. In addition, all field activities, carried out during this project, were executed in the Antimary State Forest (ASF), a 77,000 ha forest located in the State of Acre.

The major problem that the project aimed to solve was to identify a model of regional development taking into account the rational use of its forest resources. In this way, this project sought, through the identification of this kind of forest activity, the generation and distribution of income in the State, benefitting all the members of the productive chain of forest goods.

The main objective in the long term of the project was to motivate and promote the development based on the forests of Western Amazon as part of one integrated policy of land use in the area, using the State of Acre as model. This development was based on the management of the forest resources for a sustainable production in order to elevate the level of life of the rural population, the economic prosperity of the State of Acre and the wealth of the area, with means adapted to the environmental and economic aspects.

Phase II immediate objectives were the following ones: (1) to develop integrated methods of production based on the forest resources coming from the ASF; (2) to research and use of the maximum the local and regional markets for the wood and products coming from the ASF; (3) to accomplish researches about regeneration and productivity in the harvested areas in order to verify the effects of the logging on the forest and on the timber production; (4) to develop appropriate management systems for the project forests and to the social, economic and environmental way in that it will be applied; (5) to develop proper methods of crops for regional forests which minimize the negative effects on the obtaining of timber and non timber forest products and on the environment; (6) to establish consultation mechanisms and dialogue that guarantee the participation of the populations and regional institutions in

the planning and execution of the activities related to the use and that serve also to obtain a just and equity distribution of the economic benefits generated from the forest operations; (7) to develop the use and conservation of the forest resources from the ASF in such form can serve as model for similar efforts that can occur in another areas of the State of Acre and in the Amazon area in general and (8) to review the methods, and the results obtained from this project in national and international seminars.

Eleven key outputs were envisaged from the project as follows:

- 1 - An Integral Forest Management Plan for the Antimary State Forest (ASF);
- 2 - A participation system, of the local community and other communities that have direct interest in the use of the ASF, in the planning and execution of the activities;
- 3 - Road of Access to the ASF;
- 4 - Market Strategy for timber and non-timber forest products coming from the ASF;
- 5 - Establishment of Cooperatives to manage the production and commercialization of timber products, Brazil nut and natural rubber;
- 6 - An integrated operation of wood, primary and secondary processing of wood and production of components wood homes;
- 7 - Place Processing unit for Latex and Brazil nut;
- 8 - The Monitoring System for Products coming from ASF;
- 9 - A group of permanent plots to monitor several effect of the forest uses in on the productivity and on the environment;
- 10 - Improvements of the social services for the populations that live and work in the ASF, including education, health and communication; and
- 11 - International and National Workshops.

In order to garanty the sucess of this project, the strategy adopted was the elaboration and the execution of the following activities to each proposal objective:

For the output 1, were proposed the following activities:

- Activity i (a) – Elaboration of a Forest Management Plan (FMP) for the ASF;
- Activity i (b) – Hiring of a Technical Assistant.

Seeking to obtain the output 2, were scheduled the following activities:

- Activity ii (a) – Hiring of an expert in Forest Management;
- Activity ii (b) – Set up Consulting Council to monitor Project activities close to the community and so, gives transparency to actions executed by FUNTAC in the ASF;
- Activity ii (c) - Creation of an Executive Secretary for the Consulting Council aiming to monitor activities related to the Project using funds from the Project;
- Activity ii (d) – Forest Management carried out by community.

To develop the output 3, were planned the following activities:

- Activity iii (a) - Selection and hiring of an expert in forest road construction;
- Activity iii (b) – Planning for road, forest road and skidding trail construction and forest transport activities;
- Activity iii (c) – Purchase or rent of equipments for road construction;
- Activity iii (d) – Roads and forest roads construction.

For the output 4, were carried out the following activities:

- Activity iv (a) - Selection of an expert on market;
- Activity iv (b) – A revision of local and national markets for timber, rubber, Brazil nut, bamboo and medicinal plants;
- Activity iv (c, d, e) – Elaboration of a strategic plan for commercialization and market related to non-timber products, latex, Brazil nut, copaiba oil and forest seeds.

In order to obtain the output 5, were proposed the following activities:

- Activity v (a) – Hiring of an expert on cooperative establishment;
- Activity v (b) – Preparation of a Term of Reference for the Cooperative statute;
- Activity v (c) – Cooperative creation;
- Activity v (d) – Training for the Cooperative staff;
- Activity v (e) – Cooperative operating.

To develop the output 6, were planned the following activities:

- Activity vi (a) – Selection and hiring of an expert in harvesting and forest transport;
- Activity vi (b) - Development of the harvesting plan;
- Activity vi (c) - Operative Inventory;
- Activity vi (d) - Plans of Operations;
- Activity vi (e) - Purchase of equipments for harvesting;
- Activity vi (f) - Training of the personnel in harvesting;
- Activity vi (g) - Negotiation in order for harvesting, sawmill and handcraft operations would be executed together with the Cooperatives;
- Activity vi (h) - Training of the personnel in industrial techniques;
- Activity vi (i) – Opening of skidding trails;
- Activity vi (j) – Harvesting and transport;
- Activity vi (k) - Industrialization of the wood including construction of prototype of wood house;
- Activity vi (l) - Commercialization of the wood products.

Seeking to obtain the output 7, were scheduled the following activities:

- Activity vii (a) – Purchase of equipment to process latex and Brazil nut;
- Activity vii (b) – Building of facilities and instalation of equipments for rubber and Brazil nut industrial process;
- Activity vii (c) - Production and implementation of the production units;
- Activity vii (d) – Consolidation of activities for handcrafts using latex and forest seeds as raw forest material;
- Activity vii (e) - Implantation of the extraction of copaiba oil;
- Activity vii (f) - Production of by-products of copaiba oil;
- Activity vii (g) - Implantation of the workshop for non timber products.

For the output 8, were carried out the following activities:

- Activity viii (a) – Selection and hiring of an expert on market research;
- Activity viii (b) - Establishment of information source;
- Activity viii (c) - Updating of the market information and feedback for sustainable forest management operation;
- Activity viii (d) - Creation and registration of the trademark for forest products coming from the ASF.

In order to obtain the output 9, were scheduled the following activities:

- Activity ix (a) - Selection and hiring of a specialist in ecology;
- Activity ix (b) - Selection of plots to evaluate the impact of the extractive activities in on the ecology and productivity of the area;
- Activity ix (c) - Monitoring of the plots and feedback for return to Forest Management Plan.

For the output 10, were proposed the following activities:

- Activity x (a) – Improvement of education at fundamental and high school level;
- Activity x (b) – Improvement of education for adults;
- Activity x (c) – Organization of special courses of quality control and classification;
- Activity x (d) – Continual medical services;
- Activity x (e) – Construction of health post facilities in the ASF;
- Activity x (f) – To set up of a calendar as well as a transport itinerary to be used for personnel and services;
- Activity x (g) – Communication facilities in order to be used for emergencies.

To develop the output 11, were planned the following activities:

- Activity xi (a, b) – Planning and promotion of a workshop in order to promote and disseminate information generated from this project;
- Activity xi (c) – A final independent account audit.

The project's planned duration was 36 months with an overall budget of USD 3,425,000.00 of which ITTO contributed USD 1,875,000.00. However, the project duration was extended once times: from December 31 2003 to April 2004. Additional funding (about US\$ 84,155) was requested in order to make possible to hold its closing workshop, to fund an additional research in the ASF, as well as to publish a book approaching researches and studies carried out by this project.

The State of Acre, based on experience gained along the last years by implementation of several projects, as for example the Antimary Project financed by ITTO, has developed several policies to protect forests and to regulate its use. The policy adopted by the State of Acre includes Law 1426 from December 2001. This law defines the preservation and conservation of forests in the State and establishes a State system for natural protected areas. Furthermore, through the law it was created the State Forestry Council and the State Forestry Fund.

Along the last few months, the Government of Acre has taken several other steps to ensure that the State will continue to be a forested land. This included the creation of another large State Forest (around 480 thousand hectares) in the western part of the state (Rio Gregorio Forest). New areas will be incorporated as permanent state forest areas along the next months, both for protection and production .

The State of Acre has created several specific programs to support forest management and the sustainable development of forest related activities. In the past most programs and activities were centered on the development of local communities, non-timber forest products and other related issues. Based on this concept, Acre Government was the first Brazilian State to develop and adopt a forest development model known as "Extractivist Reserves". The model has helped to improve the socio economic conditions of local communities as serves as an example to be expanded to other parts of the country.

Based on experience gained with the extractivist reserves and also in the implementation of activities related to sustainable forest management (SFM) and forest products utilization, such as those implemented under the Antimary Project, the Acre Government gradually developed new mechanisms to facilitate the development of the State taking into consideration the need to improve the socio economic conditions of the population, while at the same time to ensure the sustainability of the forest that cover over 90% of the state area.

The instruments to encourage investments and promote sustainable development are defined and regulated in several legal instruments, such as the Law 1361 from December 29, 2000 that defines the policy of incentives for industrial activities in the State.

In fact the Acre Government has been the most active State in Brazil in developing public policies to promote the sustainable development taking into consideration the potential represented by the forest resources. The aim is to democratize the benefits to improve the socio economic conditions for all population. Among the actions taken there are several regulatory and economic mechanisms that will promote the economic development based on the use of forest resources, and creates limitation and reduce the attractiveness of conversion of forest land into other uses.

All the process is based in the socio economic zoning and on strategic sectorial information. This enable to identify the mechanisms and agents involved in deforestation, as well as to develop indicators to classify land use based on particularities of each region. These information is now used as a basis to guide public priorities and investment in the State.

The development policy of the State of Acre is based on the creation of constraints for cattle ranching, specially that of low productivity (0.5 heads / hectare), while at the same time developing structured actions to incentive the forest sector to revert the current logic of the forest sector productive chain (illegal operations, waste of raw forest material, low valued products and lack of social awareness). Among the main specific Public Policies developed by the Acre Government related to this aspects are the following instruments and mechanisms:

- ✓ Economic Instruments
- ✓ Forest Fund
- ✓ Environment Liabilities Adjustments in Private Lands
- ✓ Tax Incentive for Community and Private Sector Forest Management
- ✓ Pro-florestania Fund
- ✓ Regulatory Instruments
- ✓ State Forest Concession Law
- ✓ Deforestation Norms
- ✓ Industry Norms
- ✓ Protected Areas Regulation System (SEANP)
- ✓ Strategy for Land Use

2. Project Achievements

2.1 Outputs Achieved

Output I - An Integral Forest Management Plan for the Antimary State Forest (ASF)

This document was presented to Environment Institutions, Instituto Brasileiro de Meio Ambiente e Recursos Naturais (IBAMA) and Instituto do Meio Ambiente do Acre (IMAC) and, after respectively analysis, it was approved. This approval made possible

to carry out forest activities of Project PD 94/90 Rev. 3 (I) in the ASF. The Multiple-use Forest Management Plan contemplated activities related to the harvesting of timber as well as non-timber forest products in this area. During the VI Meeting of the Steering Committee of this Project was presented the approval of this plan to ITTO and ABC representatives, which was mentioned in the Minute of this Meeting.

It was hired a Technical Assistant, this demand was discussed at the VII Meeting of the Steering Committee of Project PD 94/90 Rev. 3 (I), which was agreed by ITTO and ABC representatives. The function for this assistant was to give technical support in the planning, execution and supervision of forest activities related to the Forest Management for timber products. Since August 2003, some harvesting activities were supervised by Forest Engineers acting at FUNTAC and Secretaria Estadual de Floresta (SEF).

Output II - A participation system, of the local community and other communities that have direct interest in the use of ASF, in the planning and execution of the activities.

Were identified two experts to execute this activities, Professor, Ph.D. Sebastião do Amaral Machado, which services were paid by the Project and the Forest Engineer, Dr. Roberto Pedro Bom, which services were paid by the State Government. However, from July 2001 to February 2003 this activity was executed, in partnership with researchers of Empresa Brasileira de Pesquisa Agro-pecuarias (EMBRAPA/AC), and since March 2003 the planning, execution and monitoring of harvesting activities are being carried out by the FUNTAC technical group under a partnership process with SEF technical group.

It was set up a Consulting Council to monitor Project activities close to the community and so, gives transparency to the actions carried out by FUNTAC in the ASF. This Consulting Council is compounded by representatives from the following local non-governmental organization (NGO): Conselho Nacional dos Seringueiros (CNS); Centro de Trabalhadores da Amazônia (CTA); Comissão Pastoral da Terra (CPT); SOS Amazônica and Federação das Indústrias do Estado do Acre (FIEAC). This Consulting Council was also set up since the First Phase of this Project in the ASF. This Council was responsible by the monitoring action related to project activities, as well as to provide training on social and communitarian organization aspects.

In 2003 in order to evaluate activities, executed by FUNTAC and SEF, concerning sustainable forest management actions in the ASF, were held three meeting with this Council. Added to that, this council is also participating in the creation of the Deliberative Council for the ASF, according to the Law 9.985, which establishes the National System of Conservation Units (Sistema Nacional de Unidades de Conservação – SNUC), and has the mandate of analyzing, proposing, determinating and monitoring all activities to be developed in the Conservation Unit.

It was also created an Executive Secretary for the Consulting Council seeking to monitor activities related to the Project using funds from the Project. This Secretary was created, however its monitoring works, concerning Project actions, its continual.

Forest Management activity to be carried out by the community was inserted into Project due to the necessity of involving the community, living in the ASF, into Forest Management activity. However, in the X Meeting of the Steering Committee of the Project PD 94/90, was decided that, due to lack of interest from the community regarding that activity, community-based sustainable forest management would not

occur in the ASF during this project. It was therefore agreed that the funds designated to that finality should be used for strategic areas of the Project, since work proposal would be presented for ITTO.

Output III - Road of Access to the ASF

As a counterpart from FUNTAC, an expert in road construction was provided by the Departamento de Estradas e Rodagem do Estado do Acre (DERACRE). This expert oriented the execution team about how this activity should be executed.

After studies about the area to be harvested, the technical team of project Implantação de Projeto de Manejo Florestal e Capacitação Técnica no Município de Sena Madureira/AC (PROMATEC), executed by FUNTAC, using funds from the project Apoio ao Manejo Florestal Sustentável na Amazônia (ProManejo) of the Brazilian Environment Ministry, carried out a survey on implantation of infrastructure necessary to continue the harvesting and forest management process in the ASF.

The maintenance of road of access to the ASF has been executed by the Government of the State of Acre, as well as those activities concerning planning and opening of new access to this forest.

These activities were started in the year 2000, in order to provide a structure for an area of 4,000 ha planned to be harvested. In 2003 was concluded the planning and implantation of secondary forest roads. During the maintenance of the access to the Antimary State Forest, were reopened and executed maintenance over 35 km of access roads and forest roads, 14 km of secondary forest roads, 9 bridges, 31 drainpipes and 8 log yards.

Concerning the road of access to the ASF, more specifically points related to the maintenance, according to technical suggestion, were enlarged the road width seeking to facilitate the transit of trucks during the harvesting period. It was technically justified by the shortage of the soil drainage and a lack of suited material to cover the road, which demands a greater area for exposure in order for a better dry process of the road surface.

Owing to the local soil condition and the rainy season, it is necessary an annual maintenance program for the main road. So, the State Government began after April 2002 activities of maintenance of road of access to the ASF. During the May-July period of 2003 was developed by DERACRE the maintenance of 70 km of the main forest road, which provides access to the ASF. After the ending of harvesting activities in the ASF, DERACRE executed activities seeking to recuperate important points of the access to the ASF, damaged by log transport. During the year 2004 the same activities were implemented.

Output IV - Market Strategy for wooden and non-wooden products coming from ASF

In order to execute this activities, were indicated, as experts on market studies and researches for forest products and, two professionals, the Forest Economist, Dr. Zenobio Abel Gouvêa Perelli da Gama e Silva and Dr. William Mueller, from the Mueller-Trading Import-Export + Consulting.

A preliminary study, approaching a review of local and national markets for timber, rubber, Brazil nut, bamboo and medicinal plants, was developed and presented at

conclusion of the First Phase of the Project. However, is in its final phase of the elaboration a strategic plan for commercialization and market related to non-timber products: latex, Brazil nut, copaiba oil and forest seeds. The Secretaria Estadual para Produção da Agricultura Familiar (SEPROF) is developing studies on the productive chain and issues related to market for 23 (twenty-three) non-timber forest products.

To execute the market research for Brazilian nut, it was also established a partnership between FUNTAC and EMBRAPA, using funds from a project on Brazil nut agribusiness, which has financial support from Financiadora de Estudos e Projetos (FINEP). This FINEP project approaches forest management plan for Brazil nut trees, industrial process, market research and establishment of marketing strategies for products using Brazil nut as raw forest material.

In terms of market studies for timber products, the researcher Zenobio A.G.P. da Gama e Silva carried out two different studies: (1) technical subsidies for the elaboration of a marketing strategy for wooden goods produced in the State of Acre, which was elaborated using data from 1995 and presented in the meeting of the Steering Committee of this Project and (2) market for timber products in the State of Acre, using data from 1996, 2001, 2002 and 2003 related to national and Acrean timber sectors, this study was presented in the closing seminar of this project. On the another hand, the second researcher Dr. Willian Mueller, elaborated the study Marketing & Sales: Products, Strategics, Industrialization, Investments & Budget, Training, using national and international data survived 1997.

Output V – Establishment of Cooperatives to manage the production and commercialization of wood products, Brazil nut and natural rubber.

To obtain this output, the Project Administration choice to carry out a mobilization work of community, developing training and monitoring actions. These actions were executed by the Centro de Trabalhadores da Amazônia (CTA) and Empresa de Assistência Técnica do Governo do Estado do Acre (EMATER-AC) instead of hiring an expert on cooperative establishment.

The establishment work of the Cooperative was began in 1996, with the creation of the Associação de Seringueiros da Floresta Estadual do Antimary. Later, due to a greater community maturity, these works on Associativism promoted the creation of a Cooperative, which aims to give support for actions concerning the community organization, and so, making possible the actions established by the project continue after project conclusion.

This cooperative was created in May 1998, during a General Assembly held with the community, which recognized the Creation Minute and Social Statue, all registered in the related federal and state organization.

Cooperative associates were trained, by the Serviço Brasileiro de Apoio à Pequena e Micro Empresa (SEBRAE) and Organização das Cooperativas do Acre (OCEA), on cooperatives and management techniques.

In 2004 the Cooperative aggregates 37 associates from the local community, which have a constant trade flow of latex, Brazil nut and surplus from the agricultural production, as well as is making ready to trade wood either in log or timber form. FUNTAC, through SEBRAE, continues giving technical assistance to the Cooperative, as is requested in areas related to management and account-issues.

In the ASF are acting two rubber taper associations. The association connected to ASF cooperative count with 98 associates.)

Output VI – An integrated operation of wood, primary and secondary processing of wood and production of components wood homes.

It was hired, by FUNTAC, a specialist in management, harvesting and forest transport as well as in primary industrial wood process and a trainee Forest Engineer, to coordinate management activities in the field. In 2001, with the objective of reducing costs, FUNTAC developed that forest activity in partnership with the technical team of PROMATEC. Since 2003, the harvesting and forest transport activities are being carried out by SEF with the partnership with the technical team of ProManejo Project/FUNTAC (PROMATEC).

A harvesting Plan was elaborated for an 4,000 ha area. That plan takes into account the following activities: placement and definition of landings, skidding patch, cutting, training of harvesting crew concerning skidding, log measurement, load, transport and issues related to work safety, having as source of information, the lesson learned during the training at Tropical Forest Foundation (TFF).

In order to execute the Operative Inventory, were developed two work stages, whose made possible to obtain necessary results for the attainment of information as requested in the Management Plan: **Stage 1 – Forest mapping and Stage 2 – Forest Inventory.**

It was also elaborated an Operational Plan for the ASF related to next 5 years, as it was requested at 9th Meeting of the Steering Committee. This document was elaborated having as data base, the Multiple-use Forest Management Plan for the ASF. This Operational Plan presents a group of measures seeking to give a technical support to the Project and fit it to standards and administrative procedures adopted during the execution of works in the ASF during the 2001-2005 period.

It was defined, in the 9th Meeting of the Steering Committee that, due to great values and the economic viability in this activity, the Project would not purchase heavy equipments for harvesting anymore. However, it was allowed the purchase of the chain saws, among others equipments, whose will be used during the courses and training activities. It was also agreed the rental or carry out activity using equipments under a third parts schedule. So, was chosen, later, to bid the stumpage for harvesting of a total of 4,000 ha in the ASF for the private initiative under a modality of competition of the type greater global offer.

In the year 1999, FUNTAC sent 4 Project technicians for training at FFT headquarter (located in Belém, State of Pará). In this way, these professionals will be multipliers of the reduced impact logging (RIL) techniques in the ASF in the future. In addition to that, FUNTAC (Project PD 94/90 Rev. 3 (I)), in partnership with TFF, provided, in the ASF in September 2000, training for 10 FUNTAC technicians and 18 persons from the community, in Planning on RIL techniques. This training aimed to indicate the system of planning harvesting, including the location of forest roads and skid trails, directional felling, skidding and crosscutting of tree stem into logs.

It was started in 2002 a period of training on RIL techniques for employees working at the bidding winners firms. The training, which had the FUNTAC staff as the instructors, approached appropriate felling and bucking techniques, directional felling, cutting

stumps low to the ground and optimal crosscutting of tree stems into logs, planning and opening of secondary roads and skidding trail.

Accomplished several meetings with the Administration of Project, FUNTAC and cooperated, it was agreed, for own will of the cooperative, that this will be entrusted of accomplishing the negotiations of the products with the regional market. It was also agreed that, appearing new opportunities to export products outside of the state, it will take into account the technical support of FUNTAC and SEPROF to promote the negotiations and go through the procedure legal.

During the harvesting period in the ASF, it was held meeting among the local community, COAEPA and FUNTAC. In these meeting were agreed some points concerning the SFM in this area:

- Freedom for the local rubber tappers to chose if their areas would be harvested or not;
- Freedom to determinate species and trees to be include or not into cutting selection;
- Freedom to determinate the boundaries of their settlements (some rubber tappers argued that their settlements accounted for more than 400 ha);
- Inclusion of all families into this process, disregarding the actual timing which these families are living in this area (some families are not settled officially and are living in the ASF for a period less than six months);
- Payment for each rubber tapper, in cash, by each tree harvested and located inside of their settlement;
- Supply of a house by the State Program related to houses for low income families (these house were built using timber coming from ASF);
- Protection against cut and damage for all rubber and Brazil nut trees;
- Cleaning of all forest roads used for gathering latex and collecting Brazil nut fruits.

The payment, in cash, took into account the values paid by the market for the stumpage. The values paid by each harvested tree were: Species Group 1: R\$ 55.00/tree; Species Group 2: R\$ 45.00/tree and Species Group 3 R\$ 20.00/tree.

During the 2000-2001 period were promoted three bidding processes, whose were canceled due to the fact that the winners firms did not accomplish points agreed in the process. In the 2002-2003 period were issued other three bidding processes. The first, was auctioned, in February 2002, an area of 2,000 ha, as the wood species were divided into 3 species groups, which took into account the following minimal prices: Group 1 at R\$ 25.00/m³, Group 2 at R\$ 17.00 m³ and Group 3 at R\$13.00 / m³.

However, the timber sector (sawmill and joinery firms) claimed by a meeting in order to give suggestions, define basic price, division of harvesting lots, log measurement forms and identify requested documents for the bidding. As results from this meeting, it was designated an area of 3,500 ha to be bidden only for sawmill firms (divided into one lot of 2,000 ha and three lots of 500 ha), which would make possible a greater number of firms acting in this bidding process. On another hand, an area of 500 ha (divided into five lots of 100 ha) would be designated to firms acting in the local joinery sector, whose prefer to industrialize species included in the groups 1 and 2 (that species do not suitable to interest of sawmill groups). The prices established for both last edictals were, Group 1 (noble wood): R\$ 30.00/m³, Group 2 (hardwood): R\$ 14.00/m³ and Group 3 (softwood): R\$ 11.00/m³. The State Government, as a form of incentive, gave in this moment, a subsidy over the stumpage market price, in order to recognize the production cost of forest sustainable management.

In June of 2003 was carried out other bidding, due the cancel process for the former bidding. In this new process (n^o 162003), a consortium, known as Amazonian Sustainable Vision and compound by A.F.G. Oliveira, Ouro Branco Madeiras Importação e Exportação Ltda and Venner Lumber do Brasil Ltda, was the winner.

In this process, 3,700 ha were bid and divided in four stands of 1,000 ha each one (Chico Bocão, Jatobá, Cumaru and STCP stands). So, were harvested 2,200 ha of forest: 1,700 ha harvesting all species (Chico Bocão and Jatobá stands) and 500 ha in the Cumaru stand, where were harvested only species for sawmill, being the remaining (about 40% of the total volume) scheduled to be harvested in 2004. The prices established for the 2003 bidding were: as following, Group 1: R\$ 30.00/m³, Group 2: R\$ 14.00/m³ and Group 3: R\$ 11.00/m³. The Government, in order to incentive this process, adopted the same minimal price established for the 2002 bidding.

Indeed, the implementation success of the harvesting in the ASF was observed during the 2003 bidding. Thus, the revenue from that process, 90% were used to pay the harvesting activities as well as to pay the stumpage for each rubber taper as agreed and previously mentioned in their report. The 10% remaining from that revenue was designated for the ASF rubber taper association, as it was also agreed among members of this association, FUNTAC and SEF.

- Operational Issues

It was adopted for the ASF a policiclic SFM, with no sivicultural action in order for the reduction of basal area and the needs of planting seedling, using information from satellites images (roads planning and placement of areas for annual production) as well as data obtained from the 100% inventory. This system has as objective to reduce the harvesting impact and guarantee, by information from inventory (population composition, spatial distribution of population, remaining stock and selection criterias for cutting) a compatible use of the support forest capacity. It was used the data for the planning for the establishment of Forest roads, skidding trails and landings in order to reduce impact from the harvesting on the remaining trees, rivers and soils.

At large, the operational activities execute were: **Planning** (Definition of Annual Production Units; planning and implementation of a network of forest access roads; development of a forest census - 100% forest inventory in the stand to be harvested; systematization and analysis of data obtained in the forest census; definition of criterias on cutting selection; cutting selection and logistic maps elaboration); **Harvesting activities** (Pre-harvesting silvicultural treatment: lianas cutting, together to forest inventory activity; planning and opening of secondary forest roads (preferentially a year before harvesting), Planning and opening of landing (preferentially a year before harvesting), Direction felling, Skidding planning, Skidding, Log volume identification and Loading); **Pos-harvesting activities** (Permanents plots monitoring, Evaluation of damages to remaining forest stocks and protected species, Opening and unstopping of roads for latex gathering) and **Control** (Yield operational control, Custody chain control and Volume control by operation)

In 2002, were harvested and skidded trees located in 300 ha (Work Unit 1, 6 and 7). From this area was harveste 1,073.30 m³, while the transported volume was 135.04 m³. In the 2003 bidding, in turn, out of 3,700 ha auctioned, were harvested 2,200 ha (1,700 ha were harvested all species: Chico Bocão e Jatobá stands) and 500 ha in the Cumaru stand, where were harvested- hardwood species for end-use at sawmill (the remaining forest stock, around of 40% of the total volume was scheduled to be

harvested during the 2004 harvesting). The gross forest production was 16,713.05 m³ and the commercial volume 13,927.54 m³, which accounted for a productivity of 6.33-7.6 m³/ha. In 2004 were harvested 1,500 ha remaining.

All expenses with technical support (about R\$25,000/month) were paid by FUNTAC and SEF, using funds from PD 94/90 project, during a 4-month period. These expenses accounted for the work of following field team: 2 forest engineers, 7 forest technicians, 1 field manager, and communitarian from ASF, compound by 35 persons, working as field assistants. This field technical support made possible to guarantee a good quality for the operation executed (which was observed by the group of independent environment auditors (IMAFLOA) during its technical visit to ASF in October of 2003. the supervision o the certification will happen in October 2004.

In order to identify the value to be paid for each rubber tapper (to identify all tree located in the rubber tapper settlement) it was carried out a spatial analysis, according to GIS techniques, which indicated all cut tree inside of each settlement. This tree list was (indicating local, number and species of all tree) for analysis and payment.

For industrial techniques were defined three training stages: **Stage 1** – Training on harvesting techniques; **Stage 2** - Training in craft: accomplished in the designer area and making of small wood objects. That training accomplished by SENAI/AC (National Service of Industrial Learning) it was supplied for 15 participants: 9 from the State Forest of Antimary and 6 from Porto Dias' Extractive Reserve. The training was divided into three modules, being each module with duration of 8 days and **Stage 3** – Training on lumber production: The building of a hangar for the communitarian sawmill, located in the ASF was accomplished in December of 1999.

In 2000 were built all add facilities necessary to the original project, like hangars for energy and fuel. In 2001 was contracted a technician expert on engine, in order to be responsible for por em funcionamento to the generator.

This sawmill has the following equipments and machines: one group of horizontal saw for log (to saw 6 m³ of log/day); one circular saw edger; one cross cutting circular saw; one 4 face planer; one mechanical winch for logs; one energy generator (diesel), with 127 kva capacity, to be used by ASF communitarian.

FUNTAC developed the Technical Project of the house (49 m²). The innovation of that project consists of the use of species commonly no marketed at the traditional market of wood. However, these species, due their physical-mechanical aspects, present a potential industrial use at sawmills. In this process were already built five houses: one in the FUNTAC sawmill and other in the ASF. Add to that, other houses are scheduled to be built in the ASF later.

Output VII - Place Processing unit for Latex and Brazil nut

The equipments for the latex industrial plant (a calender to break and wash the latex, a calender to laminate and a disk to cut) were identified and purchased. These equipments have the capacity to process 30 ton of latex by month. In the specific case to process Brazil nut, was not identified any industrial line proper to provide benefits for the cooperative associates (it was not found any equipment for this end, due to the low production of the raw material coming from the ASF).

Hangar for the installation of the Plant of rubber was acquired, and electric and hydraulic facilities were installed. For the production and implementation of latex production unit were installed, as well as provided training on "FDL"¹ and "Crepe Clara"¹ processes in the ASF, in partnership with PDA Project of Antimary Association and with the "Laboratório de Tecnologia-LATEQ" of UnB (Universidade de Brasília), project PD 31/99 (I).

The cooperative industrial plant processed the latex production coming from ASF, used as raw material during these training. It was also established a partnership agreement between FUNTAC and SEPROF in order to obtain funds and so, make possible to operate this plant as well as capacity building.

In partnership with community schools, were provided courses to capacitate on handcraft issues. The training was carried out in three stages, by an artisan from Rio Branco. Products obtained from this training were showed and commercialized in Fair for Forest Products – FLORA, which is held annually in Rio Branco. This activity, concerning the realization of courses and training, was concluded, however it is necessary the implantation of a local, like a workshop of non-wooden products, in order for a continuous production of these products and an arrangement for its commercialization.

In order to implant techniques related to extraction of copaiba oil, it was carried out a pre-exploratory survey of copaiba trees in the ASF in the followings settlements: Apuí, Alto do Amor, Volta Grande, Assunção, Paloma and Limoeiro Velho. So, it was enlarged from 6 to 21 the number of participant families in the activity. The oil pass by a pre-improvement, the separation and control are done through the color and texture. The commercialization of the oil has had support of the Secretaria Estadual de Extrativismo e Floresta (SEFE, actual SEF), the played price, is in 2001 was R\$ 10.00/liter for the dark oil and R\$ 12.00/liter for the clear oil. The minimum income from that activity was of R\$ 260.00/month and the maximum income of R\$ 1,090.00/month.

The pre-exploratory survey identified approximately 94 tree/settlement as possible to be harvested. Taking into account a medium production of 2.5 liter/tree with use of 50% of the trees a production of 117.5 liters of copaiba oil was had. The method of extraction of the copaiba oil-resin was adapted according to Alencar (1982). The trees were identified with a number, being collected data of DBH and total height. For the extraction of the oil-resin an equipment of one inch was used to perforate the trees. The hole is made to a medium height of 1.30 meters of the soil, should reach the center of the tree. In this hole a piece of pipe of PVC is inserted for drainage of the oil. The pipe is connected to a container collector through a plastic hose. After the collection of the oil the pipes are closed with a cover of PVC.

The extraction of the oil is made once a year with an interval of one year to collect the oil of a same tree again, which should coincide with the months of smaller volume rainy water of the year, should happen preferentially among June to August. For the accomplishment of the extraction activity it collects, transport and commercialization of the copaiba oil was elaborated an Operational Management Plan for Copaiba, which was presented and approved for the to IBAMA. With new families working in this activity, the Operational Plan should be revised and changed and so, submitted again to analysis and approval.

According to SEBRAE (1995), the copaiba oil price played usually, in markets and

fairs, is US\$ 5.00/liter. However, was found that, due the lack of quality control and presentation of the product, the commercialization of copaiba oil in its raw form is better than to trade it in its fraction form (containers of 30 ml), at price of US\$ 0.83/ ml. In the year 2002, activities related to non-wooden products (copaiba oil) were carried out in partnership with SEFE, which gave support in the mapping of copaiba trees, in settlements of families involved in this activity. SEFE will be responsible by the commercialization of the copaiba oil collected by the Antimary community.

In the year 2002 were developed 2 work trips to ASF, in partnership with SEFE.

The first work trip (2 work days), had as objective:

- To select news families to work in the copaiba oil activity in 2002 and make contact with families already working in this process;
- To verify the necessity or not of material to execute this activity, by the families;
- To establish the return to the ASF in order to map of this 14 selected settlements. In these settlements, 2 families were newcomers. Participated in this work trip 4 technicians (2 from FUNTAC and 2 from SEFE).

The second work trip (10 works days) was carried out to map 14 settlements, as well as distribute materials to the families. In these 14 settlements, already previously selected, only in 7 settlements was done the mapping. In the 7 settlements remaining, 4 families gave up to work wit copaiba oil in 2002, pointing out to have a lot of other activities to do. On the another hand, in 3 families were not possible to map because the rubber tapers had not found copaiba trees in their areas (however these rubber tapers will collect oil this year). In short, 10 out of 14 settlements collected oil in 2002, and in this activity worked 2 technicians (1 from FUNTAC and other from SEFE).

Production of by-products of copaiba oil (extraction of copaiba oil) was initiated, however for its commercialization were just accomplished the filtrated and the packaging of the oil in synthetics containers (bottles). Currently, do exist neither quality control nor use of any technology for process, which make difficult to commercialize this product. As improvement option intends the use of the copaiba oil in the production of soaps, shampoos and the pre-improvement for the commercialization of the oil for medicinal ends. In 2002 was developed a consulting with a local pharmacy (NAPELE) for experimental production of soaps using copaiba oil as raw material at handicraft level. Added to the soap production, was produced product hydrate, using oil Brazil nut and shampoos of "capim santo" (other raw forest material coming from ASF). Finally, all these material were presented in the FUNTAC stand at Amazontec (a fair held in Rio Branco in 2002).

In 2003 FUNTAC developed, in its natural products laboratory, some medicinal products, using raw material obtained from ASF as well as from the Acrean region of Juruá. More specifically, FUNTAC developed a medicinal soap using as main raw material the são-caetano melon (*Mormodica charantia*) and a medicinal shampoo medicinal, which use as input "quina" and andiroba oil (*Geissospermum spp e Carapa guianensis*). This project is still under an experience stage and it is scheduled, for the 2004-2005 period, to be carried out pre-medicine and dermatological toxicology tests, according ethic requirement and so, to start definitive clinical trials. After these products being tested and approved, FUNTAC will share the techniques as well as will provide technical support for the ASF community and other concerned with this process.

A workshop for non timber products will be built in a wooden house having as model the prototype to be built by the FUNTAC sawmill, using wooden coming from ASF.

Output VIII - The Monitoring System for Products coming from ASF

It was indicated the Forest Economist, Dr. Zenobio Abel Gouvêa Perelli da Gama e Silva (expert on market research for forest products), to elaborate the technical report on the monitoring system for products coming from ASF.

The information sources were already elaborated and presented in the report in the period of conclusion of the first phase of the project. It understands to be necessary an updating of the information sources for the attendance of the market evolution.

Updating of the market information and feedback for management operation is being accomplished by Dr. Zenobio A. G. P. da Gama e Silva, researcher of FUNTAC.

Creation and registration of the trademark of the products of ASF was elaborated, by the technical team of the Management of Institutional Development of FUNTAC, the trademark to be used in products coming from ASF.

Output IX - A group of permanent plots to monitor several effects of the forest uses in the productivity and in environment.

It was selected and contracted the Ecologist, M.Sc. (and Dr. student) Armando Calouro, Professor at Universidade Federal do Acre (UFAC), to monitor bio-indicators and data evaluation.

The Professor Armando Muniz Calouro started the establishment of plots to monitor its work, which will approach a group of bio-indicators (primates). It is important to emphasize that this study will constitute a basic part of the Dr. thesis of this professor. After ending of 2003 harvesting operation, will start the second evaluation process (the first data collection was carried out after the 2002 harvesting activity).

Monitoring of the plots and feedback to Forest Management Plan by the implantation of the permanent plots was accomplished, in four stands of 1,000 ha. That work was carried out by the technical team of FUNTAC with attendance, analysis of the data for EMBRAPA.

Data were collected, translated to computer language and are in its final phase of analysis and so, elaboration of the final technical report by FUNTAC technicians.

Output X - Improvements of the social services for the populations that live and work in the ASF, including education, health and communication.

With the implementation of this project, the Antimary community received three schools (located at Limoeiro, Mapinguari and Cajueiro settlements), where attend, at average, 25 students by year. These schools receive students from the first to fourth grade at same classroom, which makes possible a better basic teaching system in this region. Since 2001 is being supplied teaching for the fifth grade, as a part of enlargement of the teaching in this area.

In order to improve education for adults as well, was started a process to teach reading to the local adult population (namely as MOVA).

During the 1990-1994 period, professors were trained by the Seringueiro Project and was used as didactic material a Poronga spelling-book, adapted to the rubber taper reality. Since 1995, was started the use of didactic material for regular teaching.

Currently Mapiuari and Cajueiro teachers are under a continual process of updating through a modular course of teaching, according to request from the State Secretary of Education, in order to have condition to teach in regular class. In January of 2000: It was started a qualification program for the teachers from ASF schools at Pro-formation Course, this course last one year, ending in 2002.

Supply of the Electoral Service and creation of Electoral Session in the ASF (Mapiuari – Project -Headquarter at ASF).

Once a year is carried out a visit of the Forest Platoon, which execute activities concerning environment inspection and other services with the community related to the proper use of the local forest resource.

Realization of exchange of experience on sustainable forest management (mainly on communitarian sustainable forest management) among ASF rubber tapers with rubber tapers from Porto Dias.

Currently, the State Secretary of Health is responsible by hiring 4 health agents and, periodically provides materials and drugs for the community. Added to that, the local community has access to vaccine against to Hepatitis B, Yellow Fever basic vaccines against Polio (DPT), against Measles (BCG). Furthermore, the community receive campaigns to identify and control against to Cancer in the uterine neck and Leishmaniose decease. The State provides a continual support to the local health posts and the community receives medical and odontological services once a year. It is usually the community receive 2 medical and odontological services twice a year, although in 2002 was received only one visit.

The group that works in these medical services is composed by professionals with the following expertise: Medical Clinical, Gynecology, Pediatrics and Odontology. During the year 2002 were carried out 200 medical consultations, concerning exams on "ultra-sondgrafy", collect s of material for PCCU (Preventive exams for Cancer in the uterine neck decease), tooth extraction, and shipment of patients to FUNDACRE (for ophthalmologic, urological, surgeries and other specifics exams and treatments).

- It is important to emphasize the visit of the group of medicals from FIOCRUZ, composed by 6 experts on skin Leishmaniose and mucus membrane deceases, in order to diagnose and treat infected patients. The ASF health agent received training to carry out treatments of these deceases, which treated about 30 persons and indicated drugs to them.
- Other important event is, due to a constant and good work of FUNASA, the 0 (zero) index for the malaria, during the 2000-2002 period.
- Survey of persons with the Jorge Lobo decease by a group of expert doctors from FUNDACRE, composed by Dr. Thor and by the President of Associação dos Portadores de Jorge Lobo do Acre, which was useful in order to define procedure and treatments necessaries.
- Health posts at ASF receive, periodically, drugs for deceases such as: fever, verminosis, malaria, stomachic deceases, as well as materials for sutures and injuries.

The health posts located in Limoeiro and Mapiuari settlements were built by the Project. On the another hand, Antimary I and Antimary II health posts were built by FUNTAC in partnership with the local community. The health post in Mapiuari is the best in terms of equipments, has a greater variety of drugs and works as a SUCAN onward post, doing malaria exams and preventive medicine operations.

These health units accounted for 4,305 consultations, during 1994-1998 period, most of them executed by male nurses, at the post or during visits to the settlements.

It was set up of a calendar as well as a transport itinerary to be used for personnel and services: Due to the fact that, until year 2000, had no access road to the ASF, FUNTAC transferred to the community 2 boats (with engines). It facilitated the fluvial transport all year long. Add to the boats, FUNTAC transferred also a Toyota to the community. The mentioned calendar as well as a transport itinerary were proposed and are administered by the local community.

Initially were installed communication systems by radio, directly to FUNTAC. Due to the time and deterioration of this equipment (high maintenance cost) was scheduled the installation of a rural telephony, which is already in operation running at ASF headquarter (Mapinguary site).

Output XI – Workshops

It was elaborated and submitted for analysis by the Steering Committee (ITTO e ABC) during last December/2003 a program proposal for the closing workshop of this project. The Closing workshop was held in Rio Branco, Acre-Brazil, during the April 26-28 period. The budget for this event was approved by ITTO.

The final independent account evaluation was finished.

2.2 Specific Objective Achieved

Among the specific objectives, it is possible to argue that, those related to the development of integrated methods of production with base in the forest resources and the development of appropriate crop methods seeking to avoid negative effects from logging activities was obtained, where the reduced impact logging (RIL) techniques were introduced. For the non timber products were initiated forest management actions with the implementation of methods, even so in a less intense way than that actions related to the timber forest management.

The market researches for wood were also accomplished in a satisfactory form, due to the fact that the local, national and international markets were studied by Mueller William and Zenobio da Gama e Silva. So, market studies and researches were executed and strategies for industrialization and commercialization of forest products were proposed, as it was already previously mentioned in their report.

The monitoring of the vegetation also reached its objective, through the implementation of the permanent plots and the accomplishment and continuity of the evaluations for monitoring the development of the forest after the harvesting interventions.

Sustainable forest management for timber products, carried out using RIL techniques was implemented at managerial level in the ASF. On the other hand, the community-based sustainable forest management was not executed by the own community's decision. However, sustainable forest management for non timber forest products are being executed with emphasis in the Brazil nut, Latex, Copiba oil, forest seeds and phyto-therapeutics. Now, after the increasing of relationship between the local community and harvesting activity, this community manifested interest in the establishment of community-based sustainable forest management in the area.

It was created consultation mechanisms and dialogue that sought to guarantee the community's participation and institutions in the development of the project, as the creation of the Consulting Council, the accomplishment of periodic Community Assemblies, the organization of two Rubber Taper Associations, several trainings, exchanges experiences with other regional extractive communities, and the implementation of the formal education. It was observed the community's engagement, resulting in reception of resources for the implementation and maintenance of community facilities. It is important to mention that the social, economic, cultural and political development of this community is a process under a constant construction.

The development of the use and conservation of the ASF forest resources was reached, being usefull as base for the definition of the State Public Policies for the forest sector. Besides, ASF became reference for trainings, researchers' visits and students from high school and graduate levels. It is also, in the establishment stage, in partnership with the Conselho Nacional de Desenvolvimento Cientifico e Tecnologico (CNPq), a research base in the ASF.

It was held in April of 2004 the Closing Seminar of the project, in this siminar were presented and discussed the results, as well as accomplished field visits.

2.3 Contribution to Achievement of the Development Objective

The Project contributed significantly for the development and implementation of the forest policies for the State of Acre. It facilitated, also, the establishment of Public and Private Partnerships, through Public Competition in the bidding modality to make possible logging in the ASF, that is the base for definition of the forest concessions in the State Forests of Production in creation process in the State. The success of logging demonstrated for the State timber sector the technical and economics benefits from SFM as compared with the traditional harvesting. The project made still possible the training in planning and manegement in RIL techniques, for member of the ASF community and professionals acting in the local private sector. In this way, harvesting activity in the ASF, fomenting the local timber sector sector, benefitted the ASF rubber taper community with the income obtained with the sale of the stumpage.

In the social ambit it promoted the improvement of the conditions of health, education, community organization and habitation of the resident population in the Antimary State Forest. It fomented the development of the traditional productive sector with the introduction of techniques for rubber industrial process, Brazil nut, copaiba oil and forest seeds with the objective of addeing value to those products. It enlarged the infrastructure of highways and access extensions besides the improvement of the transport in the Antimary river. This project made possible the transport by road into the ASF.

2.4 - Situation at Project completion

To give continuity the actions in the ASF, the State Government is negotiating with national and international institutions activities mentioned below:

- ✓ Installation of the Advisory Council of the ASF
- ✓ Installation of a research base in partnership with CNPq
- ✓ Accomplishment community-based forest concession in the ASF
- ✓ Accomplishment operational trainings
- ✓ Review of Forest Management Plan/ to Enlarge the ASF area
- ✓ Preparation of the 8,000 hectares for SFM with opening of access extension

- ✓ Harvesting of more 3,500 hectares
- ✓ Certification of the ASF
- ✓ Strengthening of the actions related to multiple use sustainable forest management
- ✓ Operationalization of the sawmill by the local community
- ✓ Improvement of the information system on forest economics and market of forest products issues
- ✓ Creation of the Center for training and sustainable forest management/IBAMA / PROMANEJO
- ✓ Economic and environmental monitoring

3. Target Beneficiaries Involvement

The main beneficiaries was to population (389 people) that composes the community of the Antimary State Forest, because the Project in its beginning implemented all support infrastructure for the community's activities. Along the years of execution of the project, the community established its organization forms through the creation of two associations and a cooperative of producers. Added to that, this community had access to participate in all the trainings and capacity building actions concerning, SFM for timber as well as non timber forest products.

The creation of the Consulting Council in the beginning of the Project propitiated an accompaniment and supervision of the implantation of the activities of the project executed by FUNTAC in the ASF, verifying the impact of these in the community. That Council is the base for the creation of a new Council, at the end of the project for continuity and administration of the ASF.

FFT and Promanejo were partners and beneficiaries of that process, because in the trainings and events related to sustainable forest management promoted in ASF, besides use of Antimary as local of the field practices.

The Universidade Federal do Acre, Universidade de Brasilia as well as Universidade Federal Rural do Rio de Janeiro, University of Florida and Yokohama National University, had participation through the accomplishment of classes, apprenticeships collects of data for research in the SFM areas in the Antimary State Forest. These facts are indicating this area as reference for trainings, and research concerning multiple use sustainable forest management.

The forest sector of the State is being benefitted through the supply of logs coming from a managed forest for its industries as well as to update their employees on harvesting techniques.

Finally, FUNTAC, the Executing Agency of this project, could strengthen itself in institutional aspects and to consolidate partnerships with state, national and international institutions, with ITTO and ABC, for example.

4. Lessons Learned

4.1 Development Lessons

Project Design

The governments' changes and consequently of the Project Coordinators gave rise to some problem related to continuity of the actions and commitment with the periods established in the

project document: the land tenure legalization of the ASF and the construction of the access extension the area, key activities for the for the SFM in this area.

In the initial conception of the project that should take into account a flexibility for adaptation of the objectives and goals foreseen to the community's needs and local reality.

With base in this premise, the SFM Plan, had its philosophy modified for a reality of Multiple Use of the forest resources, approaching the timber forest products foreseen originally in the project and a more significant focus for non- timber forest products.

Projects that develop actions in inhabited areas should give more importance to the community subjects. In the specific case of this project, such actions were translated in the following activities: construction of health posts and schools, fomentation to the creation of two associations and one cooperative, support for the issue of personal documents for the local rubber tappers, improvement of the access conditions to the area, land tenure in the ASF, among others.

It is still necessary to adapt the execution program of the project with the real time of the community's maturation. In the present project, it was observed that the time of understanding and the community's maturation, occurred out of tune with the periods established for the activities scheduled for this project, considering that the sustainable forest management was an activity totally unknown and innovative by ASF rubber tappers.

So, as a proposal for continuity of sustainable forest management in the ASF, new areas should be disposable for community-based sustainable forest management.

Intersectorial Links

In order to execute sustainable forest management in ASF was so important the implementation of the community infrastructure and the integration of the government and not governmental institutions to give support the activities. In this way, were established partnership, among other, in the area of health and education (State Secretaries of Health and Education), construction of the access roads (DERACRE), trainings for the community in the extractivism and co-operativism (CTA, SEBRAE and OCEA), technical training in reduced impact logging (FFT and Promanejo), environmental licensing (IMAC and IBAMA). Received Consultant and the experience exchanges with national and international research centers, which contributed contributed to the efetivação of multiple use sustainable forest management in the ASF. The creation and the operation of the Consulting Council had a significant role in the actions implemented in the ASF, when monitoring and to evaluate the activities of the project executed by FUNTAC.

Improved Cooperation

As additional measures in the elaboration of the future actions for the ASF, or even for the next projects, it is interesting to identify the direct and indirectly participant institutions, and to define clearly their function and period of performance in the Project, and so, to decentralize executing agency activities. Another factor is the option of working with third parts sytems in technical activities, which could reduce costs and avoid the shortage of un-skilled manpower. In order to maintain the continuity of the actions, is important that the Project Coordinator is aware of the activities, as well as the main responsible for this actions.

Project Sustainability

The factors that can compromise the sustainability of the Project after its closing are:

- ✓ Continuity of the process of the community's involvement with relationship to sustainable forest management for timber production;
- ✓ Consolidation of sustainable forest management as the main source of raw forest material for the Acrean timber sector, using the ASF as a optional area to be harvested under a SFM system;
- ✓ Political situation in the State of Acre.

4.2 Operational Lessons

Project Organization and Management

It should occur a larger synergy between the executing agency of the project and the Government, which would facilitate the bureaucratic procedures and allow the execution of the activities in the periods established by the project. The partnerships are beneficial when it occur in synergy with the philosophy of the project, avoiding administrative problems.

Project Documentation

The documentation of the original project should be flexible so that it can be systematically updated as well as to record all the project information and alterations. The alterations in this Project should consist in the proceedingses of the meetings of Managing Steering Committee. The progress reports should be standardized and all participants and partners should be aware on this issue. It is important to mention that should be there a better knowledge on financial issues from the first liberation to the last one and always showing all approved values.

It is necessary the standardization of the Plans of activities and payments of resources, avoiding with that information get lost or made a mistake when in the change of the coordination of the project.

Monitoring and Evaluation

The monitoring and evaluation of the Project should happen during its planning and implementation and execution stages, and not only annually after the execution of the some activities. That will allow to economize resources, taking into account just the reality with the established expectations.

Roles and Responsibility of Institutions Involved:

The main Institutions involved in the execution and evaluation of the project and its respective roles are synthesized to proceed:

- ✓ FUNTAC - executing agency of the project;
- ✓ Steering Committee (IBAMA, INPA, ABC, ITTO, representative of the Consulting Council) to accompany, evaluate and deliberate about actions of the project;;
- ✓ Consulting Council (CTA, CNS, CPT, SOS Amazônia, FETACRE, IMAC, FIEAC) - it accompanies and evaluates the actions of the project;
- ✓ SEF - responsible for the harvesting in the ASF;
- ✓ DERACRE – responsible for open and maintain the main and secondary roads;

- ✓ SEPROF – support and foment the commercialization for non timber forest products;
- ✓ IMAC/IBAMA – support and orientation to the environmental licensing issues;
- ✓ FFT/ProManejo -IBAMA – support in the training for SFM;
- ✓ ITERACRE – land tenure regulation of the ASF;
- ✓ ANAC – support in the popularization of the non timber forest products;
- ✓ EMBRAPA - technical cooperation in research activities;
- ✓ SEBRAE/CTA /OCEA – support for formation of the cooperative and associations;
- ✓ SENAI – training in timber processing;
- ✓ SESI – elaboration of PPRA and the workers' PCMSO involved in the activity of logging;
- ✓ Universities – development of researches and apprenticeships;
- ✓ LPF/IBAMA – technological support in timber forest products researches;
- ✓ SINDUSMAD – support in the accomplishment in the harvesting.

Planned and Actual Implementation

To guarantee that the executed activities are in agreement with the scheduled should be necessary the following actions:

- ✓ Always have the planning of the activities, in agreement with the original document of Project and with the accomplished in the of meeting of Steering Committee;
- ✓ Maintain the direction of the actions with base in the goals and in the foreseen results;
- ✓ Coordination of the project can have autonomy in the accompaniment of the accomplished costs;
- ✓ Accomplish the evaluation of the implemented activities.
- ✓ Mantain more contacts with the financing and monitoring agencies;

External Factors (Foreseen)

Periods for resolution of such bureaucratic subjects as licensing and authorization for implementation of Management Plans, acquisition of equipments, accomplishment of biddings, should be considered and better sized for the execution of the activities in the periods specified in the Project, because the period for the accomplishment of the field activities in the Amazon area, more specifically in Acre, it is very short (5 months), due to rainy season.

External Factors (Unforeseen)

Government changes, during the execution of a Project can cause serious problems from not stop activities, alterations of the established technical priorities, methodology changes and alteration of the technical team of the project, promoting the non execution of the goals and consequently of the objectives of the project close to community and the financing institutions.

5. Recomendations

Pragmatic research and planning prior to project formulation:

The Project should have all its actions well planned, seeking the execution of the goals and objectives in the times and established periods. That planning will involve the team of the Project, already dimentioned with all the professionals and technicians necessary and the partners institutions that should have total knowledge of the project to be implemented. In

the formulation of the project should make sure that the objectives and established goals are reached in the period and cost foreseen for its accomplishment.

Assignment of an experienced, full-time Project manager:

The coordination of the Project should possess experience in all the relative areas to the project (technique and financial) and when it doesn't possess it should be trained in time. The dedication should be integral.

On-going monitoring and evaluation:

The supervision and evaluation of the implemented activities will be bimonthly, with it reviews of partial reports of progress for analysis and alteration of the activities if necessary.

Strategic Co-funding:

The financial resources should be reviewed in period according with the program of accomplishment of the project and the installment of bills at each six months.

Project Completion

At the end of the project it would be interesting the accomplishment of two closing events: one of ambit strictly technical for realization of debates and evaluation of the accomplished works, and another one with an institutional political character.

PART II. The Project

1. Project Content

1.1 Origin

The project was presented by the Brazilian government to be developed with base to the approaches of ITTO;

1. Wood use, including the use of less well-known species and fewer used;
2. Development of natural forests
3. Crop, infrastructure of harvesting and technical personnel's training;
4. Mark institutional and national planning.

1.2 Development Objective

The main objective in long term of the Project went to motivate and promote the development based on the forests of Western Amazon, as part of a policy of the integrated land use inside of the area, using the State of Acre as model. This development will base on the administration of forest resources for the sustained production in order to elevate the level of life of the rural population, the economic prosperity of the State of Acre and the wealth of the area, with means adapted to the environmental and economic aspects.

1.3 Specific Objectives

Phase II Immediate Objectives were:

1. To develop integrated methods of production based on the forest resources of ASF;

2. To investigate and to use to the maximum the local and regional markets for wood and the products coming lumbermen of ASF .
3. To accomplish researches about regeneration and productivity in the areas explored with the objective of verifying the effects of management on the forest and on the non timber products.
4. Development of appropriate management systems for the forests of the Project and for the social, economic and environmental aspects in that it will be applied.
5. Development of appropriate logging methods for the local forests and that avoid negative effects in the supply of timber and non timber forest products and for environment.
6. To establish consultation mechanisms and dialogue that guarantee the participation of the populations and institutions of the area in the planning and execution of the use activities and that is also equity distribution of the economic benefits guaranteed by these operations.
7. To develop the use and conservation of the forest resources of the ASF in a such way that can serve as model for similar efforts and that can be answered in others areas of the State of Acre and in the area Amzônica in general.
8. Review of the methods and results obtained from the Project in events (national and international seminars;

1.4 Project Rationale

The Project PD94/90 a lot contributed to the public policies for the State of Acre, as well as to join value to the timber and non timber forest products coming from the ASF and, consequently to provide social and economic benefits. The goals and results established for they be reached were used as base in the studies a accomplished by FUNTAC in the area of ASF during the execution of the Project PD 24/88 financed by ITTO.

The development model implanted in the ASF consists of the administration of the forest resource through of multiple use forest management, for a sustainable production with purpose of elevating the level of life of the local population and the improvement of development models forward to the RIL, as well as for the non timber products.

1.5 Project Location

In 1988 the Antimary State Forest was created - ASF, for execution of the Plan of Maintainable Handling of Multiple Use in the State of Acre, Projeto PD 94/90 ITTO Ver. 3 - Integrated development of Based Western Amazônia in the Forest Resources. Phase II - Technology for Sustained Use of Raw Forest Material, financed by ITTO. This is composed by the Limoeiro rubber tree forest state and on the part of the Arapixi, Pacatuba and Mapinguari rubber tree forest states. It is placed in the municipal district of Bujari, using as a boundary that limits on a side with the State of Amazonas and of the other parallel with for BR-364. It embraces an area of 76,832 ha that divides the State Forest of Antimary with an area of 57,629 ha and the areas of Assentamento Agroextrativista's Projects (PAE's) Canary (8,053 ha) and Limoeiro rubber tree forest state (11,150 ha), enclosed the area of performance of FUNTAC, through agreement with INCRA by a 30 year-old period.

The choice of the Antimary State Forest was due to its location and favorable natural characteristics, it represents an area of high biodiversidade, composed by forest of the type open, half-open and dense "Ombrófila" with bamboo and dense with canopy uniform dossel, having been studied thoroughly during the accomplishment of the Project PD 24/88 phase I.

The Antimary State Forest is important because it is the laboratory where all the proposals above mentioned are being tested and implemented, from the pioneer experience of a contract of forest concession to the beginning of the certification process, going by community forest concessions, research activities and pilot area for the development and implementation of the technological package of SFM system integrated to be adopted at all state Forests.

It is finally important to stand out the strategic importance of Antimary as the unique State Forest in the Area of the Acre river Valley, area of the state with larger human pressure for deforestation and a reduced number of great continuous areas for SFM at large scale. Antimary State Forest with its 76,832 ha represents the warranty of timber supply with certified origin for approximately 15% of the all demand for wood for next 15 years

1.6 Outputs

All the results proposed in the project were reached, except for the Results II activity II(d) that is related to the community-based sustainable forest management, that for the community's option was postponed for if they don't feel prepared for the sustainable forest management for timber production, the second it was the Outputs VIII, where a system of information about the forest production originating from of the ASF is in its development phase.

It is also stood out that in the original document of Project the Result VI, activity Vi (e) that foresaw the acquisition of equipments for forest exploration, it was altered in to IX meeting of the Steering Committee, due to the elevated costs of those equipments, being opted to execute these activities under a third parts system.

1.7 Project Execution

The main problems in the execution of the Project went to the conciliation of the activities of Sustainable Forest Management with the ASF community, due to the small understanding from the community. Other problem it went to lend legalization and the construction of the access extension, due government's changes happened during the accomplishment of the Project.

The main difficulties for harvesting were:

- ✓ The lack of culture of the local private sector for SFM;
- ✓ Low competitiveness of cost of the wood coming from managed areas in relation to log coming from legal and illegal deforestation;
- ✓ Delay on the part of the state in making possible the access infrastructure.

From this conjuncture FUNTAC in partnership with the SEF developed an intense discussion process and negotiation with the productive sector in the sense of modifying this positioning and to facilitate an institutional arrangement capable to accomplish the harvesting in 2003.

The sustainability of the project is guaranteed by the actions foreseen by the government of the State to the Forests of Production. With resources foreseen in the " Project of Sustained Development of the State of the Acre " contract the Interamerican Development Bank (IDB), the managerial infrastructure of the Antimary Conservation Unit will be built.

2. Social result of the project

These results were developed along the last 15 years in the Antimary State Forest as several studies and interventions were executed, generating information that facilitated the definition of the current forest policies to be adopted by the Government of the State of Acre.

With relationship the health and education with the implementation of the Project were possible the following progresses:

Health

- ✓ The implementation and maintenance of 4 health post for medical and dental attendances;
- ✓ Accomplishment of yellow fever exams and Preventive of Cancer;
- ✓ Increase of the covering vacuum from 5% to 90% of the population;
- ✓ Index malaria zero in the area, for three serial years (2000, 2001, 2002);
- ✓ Visit of the medical team of FIOCRUZ for attendance of the cases of leishmaniose; ;
- ✓ Accomplishment of vaccination campaigns, arising for 95% the index of vacuum covering of the population;
- ✓ Training of 4 health agents.

Education

- ✓ Operation of 3 schools, and 86% of the population have access to the education;
- ✓ Reduction of the illiteracy from 90% to 22%;
- ✓ Introduction of the Programa Activates School;
- ✓ Implementation of the Course MOVES (adults' literacy);
- ✓ Accomplishment of modernization courses and the teachers' of ASF training;
- ✓ Accomplishment of attendance services the citizenship – Citizen Project.

In the technical ambit with implementation of Sustainable forest management for Multiple Use in the ASF can be enumerated the following progresses:

Non Timber Forest Products

- ✓ Aggregation of value to the non timber forest products;
- ✓ Maintenance of the forest covering through the incentive of activities that privilege its sustained use.;
- ✓ Diffusion of technologies adapted the local inhabitants;
Larger participation involved in the Project.

The technological innovations for the rubber were: Smoky Gross plate (PBD), Leaf of Liquid Smoky (FDL), Ecological Leather, rubber handcrafts and Industrial Plant to process clear Crepe.

Standing out that of those innovations the rubber tapper opted for producing PBD and put in operation the Industrial Plant.

For Brazil nut was not identified any technological innovation, even so through the project promoted the possibilities of commercialization of the product after the creation of the Association and Cooperative of Producers.

Management, the crop and extraction of the of Copaíba oil were introduced by the Project in the ASF, qualifying 20 families in the management, process and commercialization of the product.

SFM for production of forest seeds was proceeded under an equal form that used for the copaíba oil.

Other benefeffits accomplished by this projects

- ✓ Training for technicians, the community's people, workers and managers of the local timber sector;
- ✓ Participation in congresses and other events for discussion and presentation of the experiences of Antimary;
- ✓ Material and equipments acquisition for the accomplishment of the activities of forest exploration;
- ✓ Sensibilization of the local timber sector, through lectures and the participation in the bidding process for harvesting;
- ✓ Improvement of the transport infrastructure and transport of the production;
- ✓ Maintenance of the forest cover, through RIL techniques.
- ✓ Supply for the raw forest material for the market of log coming from legalized and managed forest areas;
- ✓ Exploration and commercialization possibilites of forest species not very known in the local market;
- ✓ Formulation of a management model that can be adopted in the State of Acre and in another areas of the western amazon area

It is previously stood out that the beginning of the Project, the wood extraction in the State of Acre was practically in the almost totality in an illegal way, with very few management plans at managerial level, ally to the little credibility of the sector with relationship to the SFM theme.

3. Analysis synthesis

(a) Specifical objeive of the project	Obtained
(b) Results	Obtained, except result II, ativities II (d) and result VIII
(c) Program	Delay
(d) Spending	10% more the the planing
(e) Potential do dobbble	Considerable
(f) Potential to amplify	Considerable

PART III: Conclusions and Recomendations

With base in the accomplished activities and the results reached in the ASF, it can be concluded that are possible two different situations.

In function of the degree of the community's organization and of the experience acquired with the project, larger focus should be given in the short term the consolidation of the community organization and also the implementation of the community-based sustainable forest management with the logging and the process in the sawmill acquired by the Project, avoiding to alter the distribution of the man-powe available significantly.

In medium period, supposing that the level of the community's organization consolidates, the same can be inserted in an exploration at managerial level with possibilities of commercialization of the wood in the national and international market.

The experience in ASF will be used for the future processes licitatórios with the section lumberman, because the same went a so much learning to the public section, as for the section deprived in as to solve the managerial conflicts, technicians and you delegate that involve the activity.

With relationship to the non timber products with the Project was possible to endow the community of the appropriate technological innovations, what facilitated a better productivity, as well as storage forms and processing that promote an efficient use, joining larger value to the products and attenuating the offer irregularity, due to sazonalidade in the production. He/she becomes necessary the larger involvement of the cooperative not only in the commercialization of the rubber and chestnut, but also in Copaíba and Forest Seeds.

The results of this Project demonstrate that the tropical forests can generate important market benefits, if the resources be taken advantage of in an efficient way and handlinh properly.

Recommendation

Planing

The Project should have all its actions well planned, seeking the execution of the goals and objectives in the times and established periods. That planning involves the team of the Project, already dimension with all the professionals and necessary technicians and the institutions partners. The planning can happen in the workshop form for debate and the elaboration of a strategic Plan of the actions, functions and each participant's of the Project responsibilities

Monitorizing and Evaluation

The monitorizing and evaluation of the implemented activities should be bimonthly; with it reviews of partial reports of progress for analysis and alteration of the activities if necessary.

Coordination

The coordination of the Project should possess experience in all the areas relative to the project (technique and financial) and when it doesn't possess should be trained in skilled time. The dedication should be integral.

Resources

The financial resources should be reviewed in period according with the accomplishment of the activities of the project and the half-yearly installment of bills.

Conclusion of the Project

Nevertheless the development happened in ASF with the execution of the project, generating significant economic and social benefits for all the involved actors, the opportunities of sustainable use of the local forest and cultural resources were not drained. Before this fact, to give continuity the actions in the State Forest of Antimary, the

Government of the State is negotiating and drifting, with national and international institutions, the implementation of actions that foment striped activities below:

- ✓ Installation of the Advisory Council of ASF
- ✓ Installation of a research base in partnership with CNPq
- ✓ Accomplishment community concession in ASF
- ✓ Accomplishment operational trainings
- ✓ Review of the Management Plan / to Enlarge area of ASF
- ✓ Preparation for more 8,000 hectares for mangment with opening of access extension
- ✓ Harvesting for more 3,500 ha
- ✓ Certification of ASF
- ✓ Invigoration of the actions of multiple use
- ✓ Operacionalization of the Community sawmill
- ✓ Implementation of the System of economy information and market of forest products
- ✓ Creation of a Center of Training in sustainable forest management /IBAMA / PROMANEJO
- ✓ Economic and environmental monitoring

At the end of the project it would be interesting the accomplishment of two events: one of ambit strictly technician for realization of debates and evaluation of the accomplished works, and another of institutional political character.

To establish a Program of annual monitoring of the family income, through the elaboration of a list of positive and negative impacts of the new productive activities implemented by the project and those already existent;

To foment the continuity of programs forward for the understanding of the producers (rubber taper) in relation to rational use of the forest resources, for the market, the quality of the product and the valuation of the labor.

To identify new non timber forest products with economic potential developing managment approaches and study of costs.

Responsible for the Report

Date: Rio Branco – Acre, September, 27 of 2004

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