Lack of qualified and trained forestry practitioners is a key problem impeding the adoption of good forest management practices in the Amazon. This project will promote sustainable forest management (SFM) in the Amazon with a three-part strategy designed to develop the human resources in the forest sector of Amazon Basin countries. Part one of the strategy consists of 38 practical, on- and off-site training courses targeting 410 forestry professionals at all levels and tailored to their diverse needs and interests. This part of the strategy teaches professionals why and how to implement forest management (FM) principles and reduced-impact logging (RIL) techniques. The second component of the strategy aims to promote interest in FM-RIL — and raise awareness about its importance and benefits — among the numerous forest stakeholders who do not understand the concepts of FM and RIL or are not yet convinced of their feasibility. This part of the strategy entails rainy season extension work consisting of lectures, small seminars, and workshops. At least 400 people will participate in these events.

The third part of the project strategy is to continue the successful FM-RIL training program of the Fundação Floresta Tropical (FFT), which will execute this project. This program — funded in part by a previous ITTO grant — is now evolving into a longer-term, more sustainable training program. While the Brazilian government works with FFT and other partners to develop this more sustainable training program, it is critical to maintain the burgeoning interest in — and partially satisfy the demand for — FM-RIL training by sustaining FFT.
# Table of Contents

## PART I. CONTEXT .............................................................. 1
1. ORIGIN ............................................................................ 1
2. SECTORAL POLICIES .......................................................... 2
3. PROGRAMS AND OPERATIONAL ACTIVITIES ................. 4

## PART II. THE PROJECT ...................................................... 5
1. PROJECT OBJECTIVES ........................................................ 5
   1.1 Development Objective ................................................. 5
   1.2 Specific Objectives ...................................................... 5
2. JUSTIFICATION ............................................................... 5
   2.1 Problem to be addressed ............................................. 5
   2.2 Intended situation after project completion .................. 9
   2.3 Project strategy .......................................................... 9
   2.4 Target beneficiaries .................................................... 10
   2.5 Technical and scientific aspects .................................. 11
   2.6 Economic aspects .................................................... 19
   2.7 Environmental aspects .............................................. 20
   2.8 Social aspects ........................................................... 21
   2.9 Risks ........................................................................... 21
3. OUTPUTS ................................................................. 22
   Specific Objective 1 ......................................................... 22
4. ACTIVITIES ........................................................................ 23
5. LOGICAL FRAMEWORK WORKSHEETS ....................... 25
6. WORK PLAN ............................................................... 34
7. BUDGETS ................................................................. 39
   7.1 Overall Project Budget by Activity (US$) .................. 39
   7.2 Yearly Project Budget by Source ............................. 45
   Yearly project budget by source – ITTO ....................... 45
   7.3 Consolidated Yearly Project Budget (US$) .............. 46

## Part III: Operational Arrangements .................................. 49
1. MANAGEMENT STRUCTURE ........................................... 49
2. MONITORING, REPORTING AND EVALUATION ................ 49
   Project progress reports ............................................... 49
   Project completion report ........................................... 49
   Project technical reports ............................................ 49
   Monitoring, review and steering committee visits .......... 49
   Evaluation .................................................................... 50
3. FUTURE OPERATION AND MAINTENANCE .................... 50

## Part IV. The Tropical Timber Framework ....................... 51
1. COMPLIANCE WITH ITTO OBJECTIVES ...................... 51
2. COMPLIANCE WITH ITTO ACTION PLAN ................. 51

Annex A. Executing Agency Profile .................................. 53
Annex B. Terms of Reference and Curricula Vitae ............. 57
Annex C – Project Organization Chart .............................. 87
Annex D – Number of Courses and Trainees .................. 88
Annex E – Activity and Subject Hours for each Course ...... 90
Annex F – Training Demand 2002 .................................. 91
Annex G – Letters of Support ........................................ 94
Annex H – Location map of training area ...................... 98
Annex I – Letter of commitment from CIKEL authorizing use of property 99
Annex J – Proposal for Permanent Training Center ........ 100
Annex K – Minutes of meeting with Ibama, MMA and FFT regarding the Schedule of establishing the permanent training center .................................. 115
Annex L: Recommendations of the 25th ITTO Experts Panel and Responses 120
PART I. CONTEXT

1.1 Origin

Since 1995, the Fundação Floresta Tropical (FFT) has been an important player in the promotion of improved forest management (FM) and reduced-impact logging (RIL) in the Brazilian Amazon. The FM-RIL training program given by FFT has been the major source of skilled labor for the forest industry and has been cited as one of the best NGO conservation programs by the Pará State Government.

The FFT program has been supported by many international donors, including among others: USAID, PROMANEJO-PPG7, and ITTO. Indeed, through its support of the project “On-site training of tropical foresters and forestry trainers (PD 45/97 Rev. 1(F))”, the ITTO is largely responsible for the content of the current FFT training program.

The practical training offered by FFT, along with many other related efforts, has catalyzed a strong interest in forest management and created a demand for skilled forestry personnel at all levels. In the past 6 years, FFT has received an increasing number of requests for qualified people from all sectors as well as from all types of producers (Figure 1). FFT’s program has expanded during this period trying to address the human resources dilemma of the forest sector. Between 1996 and 2000 the number of trainees graduating from the FFT program increased dramatically (Figure 2). Importantly, all of the trainees found forestry work immediately.

As Figure 2 (next page) illustrates, FFT has just begun to fulfill the large demand for trained forestry personnel in the region. Furthermore, FFT courses have been the only source of trained field personnel in Brazil until last year when other related initiatives started regional training programs. Some of these new initiatives have developed their activities based on FFT’s experience and many of their trainers previously received training in FFT courses. Nevertheless, the demand for training in all aspects of forest management is greater than the combined capacity of FFT and the newer training initiatives that FFT also supports. In addition, FFT’s reliance on annual grants to continue its training program is untenable over the longer term. Therefore, FFT has been working with the Brazilian government (GoB) and other partners on a viable solution to these problems – a permanent Amazon forest management training center.

In the past year, the GoB, FFT and other partners have advanced significantly towards the establishment of the training center. In October 2001, FFT completed a proposal and business...
plan to establish a new Brazilian entity, Instituto Floresta Tropical (IFT), that will absorb FFT's current program and evolve\(^1\) into a more sustainable long-term forest management training program. In December 2001, FFT met with various donors to seek financing for a training facility\(^2\). In April 2002, the Brazilian Ministry of the Environment (MMA) signed a letter of cooperation with FFT (see Annex G) to indicate its endorsement of the idea of a training center and its desire to collaborate with FFT to develop it. To further this goal, the MMA convened a meeting of key forest stakeholders to discuss key issues relating to the establishment of a training center. All participants agreed on the importance of establishing a sustainable training program as soon as possible. Despite this progress, various details must still be decided. In the meantime, it is critical to continue FFT's current training services to bridge the gap between the present\(^3\) and the inception of a more sustainable training program.

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**Figure 2. Number of participants trained to date (1996-2002) and training demand (2002)**

*In-situ = courses conducted at Fazenda Cauaxi, near Paragominas, Pará
Ex-situ = courses conducted at various other sites in the Amazon

*Projected based on participants trained to date, courses scheduled & total requests for training (see Annex F for details on requests for training by sector and level)

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### 1.2 Sectoral Policies

The great majority of the wood produced in Amazonia comes from predatory origin. At present, of the 30 million cubic meters of wood harvested annually in the region 75% comes from legally authorized deforestation, 20% from illegal sources, and only 5% from areas with regular forest

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\(^1\) IFT became a legal Brazilian NGO on October 30, 2002.

\(^2\) The United States Agency for International Development (USAID) and the United States Forest Service (USFS) are providing counterpart funding for FFT and IFT to develop a more sustainable training program and GTZ-pledged finances for the infrastructure of a permanent training facility.

\(^3\) FFT has already (October 2002) received official letters from the 4 Amazon technical schools requesting scheduling for 5 courses for the training year 2003; FFT training is part of each school's curriculum. The four schools are: Juscelino Kubitschek de Oliveira State Agro-industrial School, Marituba, Pará; State Forest School, Rio Branco, Acre; Federal Agro-technical School in Castanhal, Pará; Federal Agro-technical School in Manaus, Amazonas.
management plans. The roots of this problem lie both within and beyond the forest sector and comprise social, economic, financial, legal, political, institutional and technical dimensions. Two recently promulgated sectoral policies that are contributing in a significant way to address the problem are the Pilot Program for the Conservation of the Brazilian Rainforest – administered by the World Bank and financed by the G7 (ProManejo-PPG7) – and the National Forest Program (PNF).

One of ProManejo’s principal objectives is to support the development and the adoption of sustainable systems of forest management in Amazonia, with emphasis on wood products extraction, through strategic actions and pilot experiences in priority areas. ProManejo consists of four components:

- Strategic analyses to subsidize the formulation of public policies
- Support and promotion of promising initiatives of forest management
- Development and testing of a pilot system for control and monitoring of forest-based activities
- Management of the Tapajós National Forest especially in conjunction with nearby communities

The Brazilian government launched the National Forest Program (PNF) in September 2000. The objective of the National Forest Program, determined by Decree No. 3420, dated April 20, 2000 is to promote sustainable forest development, harmonizing economic use with the protection of ecosystems, and making forest policy compatible with the other public policies, so as to promote the expansion of markets both at home and abroad and the institutional development of the sector.

The PNF aims to (i) expand national, state and local forests in the Legal Amazon by 50 million hectares by 2010 (10 million ha by 2003); and (ii) incorporate into the system of sustainable management an area of 20 million hectares of natural forests in private properties in the Amazon region by the year 2010.

The new legislation and technical guidelines are designed to promote sustainable use of the forest resource. Coupled with a growing acceptance of the need for improved management by the forest industry these national programs have exposed the significant shortage of qualified forestry practitioners in the region. This shortfall exists across all levels of practitioners – from woodsman to forest managers – and among all stakeholders and producers. This lack of trained people constitutes one of the greatest obstacles to the adoption of good forest management practices across the Amazon. Indeed, it leaves the forest sector with limited capacity to comply with government regulations.

In addition to the PNF and ProManejo, the GoB has promulgated or eliminated other land use policies to ensure that land is put to its best use. These new policies allow forestry to better compete with other land use options. The socioeconomic impacts of these new policies regarding the benefits of adopting good forest management practices are very clear: the number of

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permanent jobs created in rural areas is more than twice as compared to conventional management and more than three times the jobs generated by other land uses, such as cattle ranching. Training has promoted better salaries in forestry and new job opportunities for young foresters. Timber companies interested in applying RIL are requiring that senior foresters, acting as consultants, be familiar with these techniques. This requirement has raised a great deal the demand by junior and senior foresters for training courses.

1.3 Programs and Operational Activities

The PNF and ProManejo objectives are part of an overall vision of improved forest management in the Amazon. And, as a result of extensive international and domestic support things have begun to change. A growing number of producers have already begun to adopt better forest management practices. For example, there are now 332,000 of FSC certified forests in Brazilian Amazon and 467,000 ha under certification review; five years ago there were no FSC certified forests in the Brazilian Amazon.

ProManejo has been promoting several initiatives with the purpose of generating demonstrative effects and to disseminate knowledge on forest management in the region, including sensitization activities, training on forest management and supporting a series of projects of forest extension and technical support close to communities and companies.

Furthermore, the ITTO has shown a remarkable commitment to Brazil and the conservation of the Amazon forest through its “Reforestation and Forest Management” projects and its “Forest Industry” Projects. As mentioned above, FFT executed the ITTO funded project “On-site Training for Tropical Foresters and Forestry Trainers” PD045/97 Rev.1 (F). FFT is also involved as a sub-contractor in the more recently funded technology transfer project “Sustainable Management of Production Forests at the Commercial Scale in the Brazilian Amazon” PD 57/99 Rev. 2 (F). Other recent reforestation and forest management projects include:

- PD013/96 Rev.1 (F) Multiple Use Management in the Macaua National Forest based on Rubber Estates – Phase I: Development of Master Plan to support Community Organization – Amazon Workers Center (CTA)
- PD030/95 Rev.1 (F) II.II Dissemination and Training on ITTO Guidelines and Criteria – Phase II, Stage II -- FUNPAR
- PD068/89 Rev.1 (F) Management of Tapajós National Forest for Sustainable Production of Industrial Timber -- IBAMA
- PPD004/97 Rev.1 (F) Rehabilitation of Damaged Areas of the “Cerrado” -- Pro-Cerrado Foundation
- PPD007/97 Rev.1 (F) Forest Inventory for the Sustainable Production of Mahogany Timber – IBAMA

Recent forest industry projects include:

- PD007/94 Rev.3 (M,I) Information and Technical Assistance for Production and Trade on Tropical Timber -- SINDIMAD
The proposed project will complement these as well as the various other conservation and forest management projects in the Brazilian Amazon supported by the international community. It will also help mitigate key impediments that limit the efficacy of forestry laws and regulations including:

- Insufficient human resources at the regulatory agencies able to enforce the laws and regulations
- Lack of trained people to apply FM-RIL concepts and techniques
- Inadequate dissemination and transfer of appropriate FM techniques to stakeholders across the Amazon

PART II: THE PROJECT

1. Project Objectives

1.1 Development Objective

To promote the use of sustainable forest management practices by timber producers while increasing the socioeconomic benefits of forest management activities in the Brazilian Amazon.

1.2 Specific Objectives

1.2.1 Increase adoption of FM-RIL practices by timber producers in Amazonian production forests through practical training.

1.2.2 De-mystify the concept and promote the practice of FM-RIL amongst stakeholders in the Brazilian Amazon through extension work

2. Justification

2.1 Problem to be addressed

The Amazon Basin is the most diverse terrestrial region on earth. It is a storehouse of biodiversity and provides numerous ecological services at local, regional, and global scales. This vast area, comprising 9 countries, is also home to millions of people, many of whom rely on the Amazon’s forests and other natural resources for their livelihoods.

The Brazilian Amazon alone encompasses 5 million km² and harbors 85% of Brazil’s remaining natural forests. A recent study concluded that 83% of the remaining upland area of the Brazilian Amazon is suitable for forestry, with a commercial timber stock of about 60 billion cubic
meters. The forest sector of the Brazilian Amazon employs more than half a million people and generates annual revenues of about $US2.2 billion. The remaining Amazon Basin countries have smaller forest areas, but forestry plays an important role in land use throughout the region.

Considering its economic potential and the large area it affects, the forest sector should play an integral role in strategies to conserve the Amazon’s environmental resources. This potential will only be realized, however, if producers improve their practices. A growing number of producers have already begun to adopt better forest management (FM) practices, but most forests across the Amazon are still being logged poorly and without regard to their long-term productivity and diversity. Moreover, workers employed by conventional logging operations often face poor or unsafe working conditions, lack of job security, and few opportunities for professional development.

In recognition of these problems, several Amazon countries have recently instituted new legislation and technical guidelines to promote sustainable use of forest resources and new national policies supporting the continued development of the forest sector. In Brazil, the National Forest Program (PNF) has made sustainable forestry an objective for the forest sector of the Amazon. In order to comply with the new legislation, the forest industry must understand and adopt improved FM practices. Many forest stakeholders have come to realize they can obtain long-term economic benefits by implementing FM principles and reduced-impact logging (RIL) practices. Increasingly, these stakeholders have begun investing in qualified personnel to implement FM-RIL practices, others are becoming interested in FM-RIL, and still others have yet to receive the message.

The FFT has provided much of the training and technical support for FM-RIL implementation in the past 6 years. Nevertheless, its capacity is not sufficient to meet the growing demand for training. The resulting shortfall in trained forestry practitioners at all levels constitutes a significant obstacle to the adoption of FM-RIL across the Amazon and leaves the forest industry unable to comply with government regulations.

The problem is summarized in the points below and described graphically on the following page:

- Increased legal and policy basis for sustainable management of Amazon forests
- Beyond subsistence agriculture, few employment opportunities exist for people living in Amazon Basin ➔ FM-RIL requires more people at all skill levels than most other land use options in the Amazon and provides more stable employment

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6 Schneider et al. 2000, Amazônia Sustentável: limitantes e oportunidades para o desenvolvimento rural, is available from the World Bank and IMAZON. According to this study, about 75 percent of the Brazilian Amazon remains forested and 15 percent has been cleared; an unknown proportion has been burned. The study also estimates that 90 percent of Brazil’s hardwood production comes from the Amazon and nearly all of that wood (~ 34 million m³ annually) is consumed domestically.

7 ‘Producers’ refers to people engaged in forest harvesting and milling activities.

8 In 1995, EMBRAPA conducted a forest management survey in Paragominas, and found that no producers had effective management plans.

9 IBAMA recently published general technical guidelines for the appropriate management of upland forests in the Brazilian Amazon.
• Interest in applying FM-RIL methods growing steadily, but ample time needed to effect significant change because forest industry in Amazon is large and complex, comprising industrial and community based producers

• Growing interest in forest certification by timber companies viz., 5 years ago – 80,000 ha (1 company); today over 330,000 ha certified (6 companies)

• Certification requires well trained personnel

• Lack of trained people to implement plans require by law has driven increased demand for training over past 5 years

• FFT trained most of the current professionals (both practitioners and trainers) in the Amazon

• Many producers still using harvest practices that degrade the forest making it more prone to fire and conversion

• Continued large proportion of wood harvested in the Amazon comes from illegal sources or deforestation

• IBAMA’s new procedures for auditing forest management require the forest industry and community forestry project to employ trained workers, foresters and technicians

• To effectively audit and regulate the forest sector, IBAMA and state environmental agencies also require personnel trained in auditing activities

• Extension work is needed to promote and disseminate good forest management practices among the various forest sector stakeholders

• FFT’s capacity unable to meet burgeoning demand / need for training; in addition, FFT program unsustainable because of reliance on annual grants

• The Brazilian government (GoB) – especially MMA, IBAMA, and the National Forest Program (PNF) – as well as FFT and partners are in the process of addressing the problems of long-term sustainability and training capacity by establishing a forest management training program that will serve all Amazon countries

• While such a training program is being developed, it’s important to maintain growing interest in FM-RIL by sustaining FFT’s training and extension program
Instead of providing stable and sustainable employment with opportunities for advancement, much of the Amazon forest industry consists of unsafe, unstable, & dead-end jobs.

Large-scale waste of precious resources reduces forest sector's present and future potential contribution to the regional economy.

Diminished potential for Amazon forests to sustain biodiversity, sequester carbon, and provide other key ecological services.

Many producers still using harvest practices that degrade the forest making it more prone to fire and conversion.

Large proportion of wood harvested in the Amazon still coming from illegal sources and deforestation.

Despite mounting interest in FM-RIL, lack of qualified, trained people at all levels and in all sectors significantly impeding its adoption.

Ignorance of, or misunderstanding or skepticism about the importance and feasibility of implementing FM-RIL.

Demand and need for FM-RIL training now exceeds the capacity of annually funded programs.

Limited capacity of existing FM-RIL promotional efforts to reach all stakeholders further impeded by vast distances and distinct contexts in different regions.

Vertically integrated forestry systems and forest certification require training of all team members.

New laws / policies requiring FM have driven demand for FM-RIL training beyond capacity of annually funded programs.

Large, diverse target audience with differing access to information, technology, & training.

Until recently, lack of forest management tradition and few practical training opportunities for forest workers at all levels in the Amazon.

Widespread incentives (until relatively recently) for forest conversion, virtually free timber resources, vast distances, and limited government capacity to regulate forest activities.

Belief among some stakeholders that forestry is not a viable development option in the Amazon.
2.2 Intended situation after project completion

One of the principal outputs of the project is to contribute significantly toward the development of a cadre of trained forest sector professionals who can effectively implement improved forest management practices. Upon successful completion of the project, at least 410 people at all levels and from all forest sectors will be capable of effectively applying FM-RIL and thus will become part of this cadre. The positive impacts of these courses on both the remaining production forests as well as on the people and economy of the region will be manifest in several ways as explained in the sections on Economic, Environmental and Social Aspects.

Because of the vastness and diversity of the Amazon, many more people than can be accommodated in the proposed courses will still need training or to be convinced of the importance of improving the management of forest resources. After the project is completed, at least 450 people from different parts of the forest sector and different regions of the Brazilian Amazon will be more aware of the importance of improving forest management. These 450 participants in the proposed extension activities will also have a greater understanding of the conceptual basis of FM-RIL as well as the rationale for its implementation. The anticipated result of the extension work, therefore, is an increase in the number and geographic spread of forest stakeholders seeking FM-RIL training.

The development and refinement of training aids and manuals is another tangible output of this project. A trainer’s manual for teaching FM-RIL in particular will help codify the kind of practical training that FFT has been conducting the past 7 years. These materials will be used in the proposed courses and extension work, but can also be adapted for use by other similar training initiatives. Finally, as FFT absorbs FFT’s capacity and evolves to a more sustainable training program, the materials and manuals will provide credibility and standards for excellence in teaching.

A fourth anticipated outcome of the project is an increased capacity of regulatory and monitoring agencies to enforce the new laws and forest management guidelines. FFT has already trained several of IBAMA’s field agents leaving that agency with a stronger ability to promote and enforce good management. The proposed courses will build on this past success.

A final key outcome of the project is continuation of the FFT training and extension program, which has helped shift the attitude that Amazon forests are an impediment to development to the attitude that they are the most likely means of achieving sustainable development for the region. By sustaining FFT’s existing program, the project will not only accomplish the outcomes mentioned above, but will also contribute toward the development of a more comprehensive, long-term and sustainable training program that will provide the Amazon forest sector with a centrally important means to blossom: trained people at all levels.

2.3 Project strategy

The proposed bridging project has several elements that together constitute a strategy to address a key barrier to the adoption of FM-RIL across the Amazon Basin: the shortage of qualified and trained people.
First, through the 38 courses FFT will offer over two years, the project will help develop a critical mass of trained people who can implement FM-RIL. Because trained workers are needed at all levels (woodsmen to forest managers) and in all sectors (industry, government, communities, etc.), the project will develop and offer on- and off-site courses tailored to the specific participants. Although all of the people seeking FM-RIL training at present will not be able to participate in these courses because of limited capacity, the courses will nonetheless help satisfy some of the current demand while a more sustainable training program is developed.

Second, the project will promote and disseminate the concept of FM-RIL to many stakeholders across the Brazilian Amazon who have not yet learned about its benefits. This rainy season activity will complement the courses while building additional demand for practical training in the near term.

Third, the project will sustain FFT's program, which has helped catalyze the transition from conventional and otherwise poor logging practices to FM in the Brazilian Amazon. This aspect of the project strategy is important because FFT plays a significant role in several other projects in the Brazilian Amazon. In addition, by sustaining FFT's current program, the project will maintain the momentum of interest in FM-RIL and allow time for the GoB, FFT, and other partners to establish a longer term, sustainable training program for the Amazon region.

The importance of sustaining FFT's current training program and the temporary forest management center is exemplified by the fact that FFT has been involved with all companies presently certified by SFC standards and with more companies seeking certification and training it is very important to take advantage and maintain the present center located at Fazenda Cauaxi. Not only does this location offer forest management and RIL experience over a period of 8 years, the additional support offered by companies such as Caterpillar do Brasil, Andreas Stihl S.A, and CIKEL Verde do Brasil S.A. provide an advantage of counterpart support which would be hard to replace. The areas, which in the past 8 years have been ceded to FFT by CIKEL, and authorized for demonstration and training by IBAMA now have a very high training value for all levels of practitioner and in all forest management and RIL activities.

2.4 Target beneficiaries

The main beneficiaries of this project are:

- Forestry practitioners (rural laborers, sawyers, machine operators, technicians, foresters, supervisors, and managers) as well as landowners from ITTO member countries in the Amazon who will benefit from professional development (improved ability to implement required practices), and enhanced conservation of the resource on which they depend;

- Forest Technical Schools are one of the primary beneficiaries. In the past the Forest Technicians engaged in forest management in the Amazon region were from the schools in the south of Brazil. Two forest technical schools started up in the Amazon region in 1999 (Amazonas and Para states). In the year 2001 two more forest technical school programs were initiated, one in the State of Acre and one additional program in the state of Para. All of these forestry technical schools have made the FFT course part of their curriculum and have requested training programs for their students for the coming years. This level of
practitioner is of extreme importance because he is the field level individual lacking between
the forester and the operator level.

• Wood industry sector (i.e. landowners, millowners, & companies engaged in forest
management) in ITTO member countries in the Amazon who will benefit from (i) enhanced
conservation of the resource on which they depend and (ii) potential economic benefits, both
of which may be achieved through more efficient wood extraction;

• ITTO member countries in the Amazon by contributing to the adaptation and application of
FM-RIL guidelines in different forest types and settings, which in turn will facilitate more
efficient use of forest resources;

• Brazilian governmental and non-governmental institutions involved in the project by
contributing to improvements in cross-sectoral linkages;

• Brazilian government entities at the National and State levels where supervisory personnel
have been trained in FM and RIL practices.

• The global community by contributing to (i) a reduction in logging damage resulting in
greater efficiency in the utilization of forests throughout the Amazon; and (ii) a reduction in
ecological impacts resulting from current practices (e.g. losses to biodiversity, greater fire
vulnerability, and decreased carbon sequestration potential);

2.5 Technical and scientific aspects

2.5.1 Training courses

2.5.1.1 Course Objectives
The training courses will emphasize principles of forest management consistent with ITTO’s
guidelines\textsuperscript{10} and the implementation and training of FM-RIL practices\textsuperscript{11}. The courses will be
practical, hands-on, and tailored to the level and needs of trainees. The number and type of
courses will be based on the demand from different levels and different parts of the forest sector.
Each type of course targets a different audience and therefore has slightly different objectives
(see below). In general, however, at the end of the courses, participants will be able to:

• explain basic principles of forest management for wood resources;
• explain the benefits and constraints of each component of RIL;
• conduct, demonstrate and/or supervise all FM-RIL components; and
• in some cases, train foresters, technicians and other forestry practitioners in the
implementation of FM-RIL methods.

2.5.1.2 Course Content, Description, and Target Participants
During the courses, the participants will be divided into small groups in order to better carry out
the practical fieldwork. At this time, everyone shall have the opportunity to observe and practice
forest management and reduced impact logging field activities, as well as first aid and workplace
safety practices. The participants will undertake pre-harvest activities, harvest planning, logging,
and post-harvest activities. They will gain practical and theoretical knowledge on the use of suitable FM-RIL techniques. The following section describes the rationale, objectives, content and target audience of each type of course FFT will offer during the project. Further details, including the number of subject hours of various activities for each type of course, are provided in Annex E.

General courses

**GM- Forest management and Reduced Impact Logging to University Level**

Rationale: Teach a new technology to forest managers. Companies that plan to adopt FM-RIL must have trained people who understand why they are changing methods. It is difficult to manage something that you have never done, and most managers have never been involved in any of these activities.

Participants: Supervising foresters at all levels and from all stakeholders (NGOs, government agencies, industry, communities). Also people who plan to disseminate this knowledge to others.

Objectives: Observe and participate in all aspects of FM-RIL to understand how and why different activities are done.

Contents: 12 days of hands-on participation and discussions.

**MF- Forest management and Reduced Impact Logging to University Level**

Rationale: Today’s technical school graduates have little practical training and hence are not sufficiently prepared for the work they are hired to do.

Participants: Technical school students (seniors in final semester).

Objectives: Translate theory to practice. Prepare students to be capable of applying FM-RIL on the job in an effective manner.

Content: 13-day practical hands-on training focused on allowing participants to conduct all aspects of FM-RIL upon completion. The course focuses on activities appropriate for technicians.

**TD - Decision maker**

Rationale: Most decision-makers are removed from the reality of forest management and need to have insight into the theory and practice of FM-RIL.

Participants: Policy makers from regulatory and monitoring agencies (at both state and federal levels); community leaders, company executives, and landowners.

Objectives: The course is designed to remove the misconceptions surrounding FM-RIL and to de-mystify the process. This will enable participants to make informed decisions.

Content: Five days of demonstration, observation, and discussion regarding all aspects of FM-RIL. The course does not have a hands-on component.

**TE - Off site RIL courses**

Rationale: This course reaches people who are unable to attend on-site courses.

Participants: Company crews or community crews.
Objectives: Use team of trainers to train or upgrade a whole crew in a community or at a company’s site. Typically, one member of the crew is trained on-site to facilitate the off-site training.

Content: 6 days on all aspects of FM-RIL

Specific Courses

**TA – Audit techniques**
Rationale: To increase the number of people who can assess the quality of forest management. Allows companies to get an idea of the quality of their operation.
Participants: Government and monitoring agencies as well as forest supervisors.
Objectives: Teach auditing criteria and indicators.
Content: 6 days of observation, lectures and discussion

**TP – Pre-harvest techniques**
Rationale: 100% inventory is a relatively new practice and concept. It is a new requirement in legislation and newly accepted by companies, but few people know how to do it.
Participants: Practical woodsmen, technicians and supervisors.
Objectives: To develop planning skills and to learn how to conduct pre harvest activities.
Content: 7 days of practical, hands-on block layout, forest inventory, and pre-harvest silvicultural treatments.

**TC – On- and off-site felling techniques**
Rationale: Felling directly affects value of wood through its impact on waste and damage.
Participants: Sawyers and sawyer supervisors in both industry and communities.
Objectives: Improve capacity of sawyers to cut trees safely, efficiently, and correctly.
Content: 7 days of safety, chainsaw maintenance and operation, and directional felling techniques

2.5.1.3 General aspects of FM-RIL to be undertake during courses

Pre-harvest Activities

**Delimitation of the plot and guide trails**
The participants will define and delimit the working units (WU) taking into account the hydrology and topography of the area. This activity involves opening trails, defining the physical area of the WU, and dividing the WU into smaller strips to carry out the inventory.

**Forest inventory (100%)**
The participants will undertake a pre-harvest inventory on 100% of trees with dbh over 35 cm (dbh ≥ 35 cm). The inventoried trees will receive a numbered field sheet and tag with its respective order number. Then the natural felling direction of the trees as well as liana tangles,
streams (ephemeral and intermittent), topographic variation, soil variation (rockiness), presence of wild animals, nest trees and trees forbidden by law to log are recorded.

**Vine Cutting**

Vine cutting shall be coordinated and conducted by participants during the pre-harvest inventory. Vines are cut only if they are clinging to trees of commercial value that will be logged or if they are connect harvest trees with other trees. During the execution of this activity, the participants will be trained to verify the distribution of intertwined vines at the crowns of the trees and especially to verify whether the vine is slanted, so that when cut the lower portion does not touch the ground again, which would facilitate its regeneration.

The participants will also be alerted as to the importance of carrying out this activity one year before logging, with the objectives of (i) reducing the size of felling gaps; (ii) decreasing damage to the remaining vegetation; (iii) decreasing competition for nutrients and light; (iv) increasing capacity of forest regeneration; (v) increasing workplace safety in felling; and (vi) facilitating log extraction.

**Definition of logging infrastructure**

**Planning secondary roads**

The participants will define the number, width and length of secondary roads to be built within the WUs. Then they will plan and demarcate the roads. The participants shall be trained to always follow the paths of least resistance, avoiding larger trees and those of commercial value and commercial potential. The road shall then be marked to facilitate the tractor operator’s job, in order to decrease machinery time and damage caused to the forest while building the road.

**Planning**

**Road-building**

While carrying out this activity the participants will accompany the tractor operator who will follow the markings for the planned road. First, the tractor will pass with its blade lifted breaking up plant material. Next, the tractor will return, leveling the ground and pushing the plant material to the sides of the road, removing as little topsoil as possible.

**Planning landing areas**

During this activity the participants will plan and define the number of landing areas. These landing areas will occupy an area of 500 m² (25x20m). The perimeter of the landing areas shall be marked so that the operator can easily follow the area set aside for construction; this planning reduces unnecessary clearing during construction.

**Building landing areas**

The participants shall accompany the building of the landing areas, observing the system that seeks to minimize damage and increase productivity. The construction is done from the outside inwards in the landing area. The tractor first breaks up the plant material, circles the entire area with the blade suspended, and then levels the area pushing the plant material to the sides.
**Data processing**
The participants will have contact with software that facilitates processing of data gathered during the pre-harvest inventory and that aids in planning harvest and post-harvest activities. The participants will have the opportunity to do calculations in databases and calculation sheets. With the aid of these and other software they shall generate lists of trees inventoried, desirable remaining trees to be logged, estimated volume to be logged, basal area and other data necessary for mapmaking and planning and execution of logging and post-harvest activities.

**Mapmaking**
The students will learn mapmaking techniques that facilitate planning and the undertaking of management activities. At least four types of maps in different scales will be used in practice during the training, these are:

*Area Location Map*: on a scale of up to 1:20,000, indicates the area to be managed, as well as access routes, geographical position and other topographical and hydrographical characteristics in the area.

*Base Map*: with inventory sheets in hand, all of the trees will be allocated on the base map using coordinates (x, y). This map is made at a scale 1:1,000 and contains all details regarding the plot and the trees inventoried from minimum dbh, providing a spatial view of all trees and characteristics existing in the area.

*Logging Map*: After making the base map, a logging map is made at a scale 1:1,000, with all trees to be logged, secondary roads and the stocking landing areas.

*Felling/skidding Map*: Smaller maps will be made based on the logging map with the landing areas and respective trees to be logged. These maps will be sent to the logging team that will do their work and deliver them to the skidding planning team and lastly to the skidding team.

Mapmaking will allow the participants an enhanced vision of the spatial distribution of the trees inventoried with respective classifications per commercial value. These maps also demonstrate vegetation variations (vine areas, clearings), rivers, streams and topographical variations (landmarks).

**Selection and marking of harvest trees**
Based on the species list, sizes used in industry and IBAMA criteria (dbh≥45cm), the participants shall select the trees to be logged, remaining trees and those to be protected and preserved. After selecting the trees to be felled and allocation of the trees on the planning map (logging map), the planning and logging teams will go into the field to verify and mark each category of tree selected.

**Logging**

**Felling trees**
The participants will gain theoretical-practical knowledge on the use, maintenance, and safety during tree felling operations with chainsaws.
With the cutting/skidding map in hand, the participants, together with the logging team, shall oversee the felling of the trees selected, defining the felling direction of each tree, and learning safety procedures for directional felling of the trees. The participants shall observe how felling trees in a planned and directed manner contributes towards the success of the skidding operation, reduces felling impacts, and reduces the waste of timber during the operation.

**Planning skid trails**
In the field classroom, the participants will plan all details of the skidding operation (how, when and why). They shall define the criteria for distribution and number of trails for each landing area as well as quantity of trees to be skidded by the main trail. The participants shall also define the standardization of markings to be utilized in the field during allocation of trails. In the field, they shall plan the skid trails, always seeking to decrease damage to the forest while increasing production.

**Skidding trees**
To undertake this activity, the participants shall discuss the advantages and disadvantages of different types of skidding methods and equipment. Next, they shall carry out the activity in the field, first receiving a theoretical-practical foundation on safety of the skidder team and the use and maintenance of the machinery during the execution of this activity.

During the execution of this stage the participants shall observe how planning reduces unnecessary movement of the machine (skidder) and consequently damage to the forest, as well as increases productivity of the skidding operation, thus decreasing operational costs.

**Landing area operations**
Together with the skidding exercise, the participants shall discuss the execution and procedures for measuring logs, stacking them and treating them to avoid cracking and attacks by fungi and/or insects, as well as accompany the loading and transportation of logs.

**Post-harvest Activity**
Based on prior knowledge of the forest and logging intensity, the participants shall discuss the best types of post-harvest intervention, such as silvicultural treatments, forest protection and forest monitoring.

Among others, the following silvicultural treatments shall be discussed: vine cutting, release thinning for future crop trees, and enrichment planting in natural and felling gaps. In each case the participants will have the opportunity to visit examples of these silvicultural treatments and discuss their effectiveness.

On the topic of forest protection the participants will have the opportunity to discuss how to prevent fires in logged forests, prevent poaching, manage fauna and control illegal logging on the management unit. It is important to point out to participants that these activities must be carried out in accordance with the needs of the area and/or region where the management is being undertaken.
Forest monitoring shall discuss best practices to be adopted for managing the forest. Here the participants will visit permanent plots and accompany a team installing or re-censusing a permanent plot, thus becoming better able to understand the development of the forest. They shall also have the opportunity to carry out a damage and waste assessment in the forest caused by logging.

**Evening lectures and discussions**

The course shall include additional introductory lectures on forest management and field practices in FM-RIL. The members of the FFT technical staff and consultants specialized in forest management from organizations with which FFT collaborates and cooperates will give the lectures and will introduce participants to topics on forest management such as:

- Forest protection
- Forest management system
- Forest management plans and POA (annual operational planning)
- Forest management certification
- Forest management costs and benefits
- Forest management legislation
- Forest management and biodiversity
- Visual aids/presentation

These lectures will be given in the FFT camp during the evening program. The discussions will be an opportunity for the participants and instructors to exchange ideas on the large variety of topics, always emphasizing the needs, challenges, innovations and future paths the forest sector is to take.

### 2.5.1.4 Participant Selection Process

Because an important goal of the project is to bridge FFT’s current transitional period, and because the ITTO funds are limited, most participants will be Brazilians. However, the participation of qualified people from other ITTO member countries in the Amazon basin will be actively promoted if no additional project costs will be incurred.

Because the courses will be held in the Brazilian Amazon, the principal language will be Portuguese. Depending on the level of demand for training from other Amazon countries, FFT will make arrangements for the translation of materials into Spanish. Participants will be expected to cover their own travel expenses to arrive at the course and also to pay a nominal enrollment fee (about $75) to guarantee their participation in the course and help cover course expenses. Some funds have been allocated for worthy participants who cannot cover all of their costs.

The number of participants accepted will depend on the type of course (see Annex D for details) but will vary between 8 and 15. Candidates must submit an application describing their background, qualifications and reasons for taking the course. To screen applications and select participants, FFT will:
• Solicit applications that include CVs, language proficiency, and qualifications; letters of support; and plan for disseminating or applying the lessons learned from the courses.

• Coordinate with the Steering Committee, and Technical Advisory Committee, to rank applications according to a system that ensures fair representation from government, industry, NGOs, and forest-based communities.

• Individuals and or groups from companies that have received subsidized training in the past and are certified are not eligible for these subsidized courses. In case where re-cycling is requested they will have to pay in full for these service. This includes the companies that are benefiting from the ITTO/Embrapa/CIFOR project and the partner company – CIKEL Verde do Brasil.

2.5.1.5 Course Scheduling and Promotion
Although FFT cannot predict with certainty the number and type of each course at this time, a tentative schedule for 2003 is presented in Annex D. FFT will fine-tune this schedule based on specific requests for training during the six months prior to the training season. Annex D also shows the number of participants that will be accepted for each type of course.

To be sure that the target audience learns about the courses, FFT will begin the following activities immediately upon receipt of grant funds:

• FFT will work with Tropical Forest Foundation (TFF) to develop and send out course announcements. These will describe details about the courses including objectives, content, dates, eligibility requirements, address for applications, etc.

• TFF and FFT will send the announcements to all potential interested parties including natural resource and forestry-related agencies and ministries in each country (also embassies), relevant university departments, industry associations, and NGOs across Amazonia.

2.5.2 Extension Work
The goal of the proposed extension activities is to stimulate interest in FM-RIL among a wide variety of stakeholders across the Amazon. To achieve this goal, FFT will provide information and basic education about FM-RIL through lectures, workshops, audio-visual presentations, and small seminars. These forums will allow FFT to de-mystify the terms ‘forest management’ and ‘reduced-impact logging’. In addition, through the proposed extension work, FFT will be able to diffuse information about FM-RIL to a broader geographic region and target audience than it could through courses alone. This diffusion will further stimulate interest in FM-RIL across the Amazon. Finally, the extension activities will provide a means for FFT to continue developing its capacity to adapt FM-RIL methods to different regions.

The target audience for these activities includes the following stakeholders/beneficiaries:

• Forest land owners
• Forest products industry owners and managers
• Independent forests and forest technicians
• Employees of government organizations
• Researchers and NGOs
• University and technical school teachers and students
• Forest community workers

The specific activities FFT will undertake include:

• Organization of visual aids, literature, slide presentations, PowerPoint presentations, and other materials for lectures and seminars;
• Plan and schedule lectures, seminars, and workshops
• Travel to target regions and conduct workshops, seminars, or lectures depending on the audience.

The main themes / topics emphasized during these events will depend on the specific audience. In general, however, FFT will emphasize the following topics:

• the principles of FM-RIL and why its adoption is essential in Amazonia
• the importance of using safety equipment
• costs and productivity of using FM-RIL relative to conventional practices highlighting results of FFT’s cost-benefit study
• mechanisms for adopting FM-RIL in the Amazon and constraining factors in the region
• alternative (traditional low-impact) extraction systems for forest communities and/or small producers
• forestry laws, policies and regulations and management implications
• disincentives to management and efforts to remove them
• market access and certification and their importance in the region

The number and location of particular events will be based on demand and logistical considerations. At present, FFT estimates that it can conduct 8 events per year attended by 200 people in total. Details will be elucidated in the early rainy season (2004 & 2005) during the project.

2.6 Economic aspects

At present, there are few viable sustainable development options for the Amazon Basin that do not affect or depend on forest resources. Sustainable forestry is considered one of the best if not the best development alternative for the region. Preliminary observations indicate that FM-RIL – a key step toward sustainable forestry – is not only positive from a forestry and environmental perspective but also from an economic one.

Without considering externalities, the basis of this hypothesis is that FM-RIL requires more people throughout the year than does conventional logging. Increased job stability is a key factor in the Amazon where people are flocking to already over-crowded cities because of the lack of stable work in rural areas. FFT and partners also believe that FM-RIL can provide much more employment than other traditional sectors such as cattle ranching or mining. Finally, when companies adopt FM-RIL they also commit to the idea of long-term management and long-term investments in their employees. The result of this commitment is greater opportunity for
professional development of employees regardless of the position at which they start (see additional details below under Social Aspects).

The direct effect of the proposed project on the economy is expected to be immediate and substantial based on previous experience. Considering the critical need for qualified and trained practitioners for producers to comply with new federal laws, it is reasonable to anticipate that all participants in the proposed courses will immediately be hired and start practicing what they learned. The validity of this expectation is based on FFT’s experience during the past four years. All FFT trained technicians -- who are quickly becoming the workhorses of the forest sector -- found employment in the forest sector upon graduation from one of the four Amazon Forest Technical Schools, which require FFT field training as part of their curricula. FFT anticipates the same to hold true for all technicians graduating in the next two years.

Finally, it is important to note that the proposed project will have a positive impact on the region’s economy because it will promote and create enabling conditions for more efficient use of the forest resource. Numerous studies have found that FM-RIL practices reduce residual stand damage12, which in turn helps mitigate the increased vulnerability to fire13 associated with logging activities. This benefit is important because the region’s economy hinges on the maintenance of the forest’s productivity. By reducing wood waste (e.g., through greater recovery of commercial volume than in conventional logging), FM-RIL also provides financial benefits14 to landowners and communities and thus to the local and regional economy.

2.7 Environmental aspects

This project aims to promote sustainable forest management through the development of human resources. As such, it will involve forest harvesting and other silvicultural operations that will affect forest stands in which these activities are conducted. Nevertheless, a central goal of sustainable forestry — which the project is promoting, demonstrating, and teaching — is to obtain non-declining timber volumes without compromising forest quality or composition over time. Although any harvest will alter the forest to some extent, it is clear that minimizing physical impacts is an important first step in the goal of sustainable production. Reduced-impact logging provides standards for mitigating the FM activities that cause the greatest ecological impact. Specifically, as mentioned above, FM-RIL methods reduce soil and canopy damage, protect future crop trees, and decrease waste by at least 50 percent compared to conventional practices. As such, RIL is considered a necessary step toward achieving sustainable forest management.

The training conducted during this project will be integrated into actual forest management and forest harvesting activities. Trees will be cut and heavy equipment used on at least 800 ha of forest will be harvested and roads will affect additional areas. In all operations and in all training activities, the FFT field crew will adhere to environmental protection regulations, which are in fact at the core of the FM-RIL methods. In addition, the project will strive to incorporate lessons

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14 See Holmes et al. 2002.

from its own applied research and from related research projects on environmental impacts of FM-RIL practices. Finally, it is worth noting that this project is expected to have a positive environmental impact because it should multiply the number and area of forests being managed with RIL practices compared with conventional logging practices.

2.8 Social aspects

The overall social impact of the project in the region is expected to be positive for many of the reasons mentioned above under Economic Aspects. The basis for this statement is that adoption of FM-RIL practices changes the cost structure for producers in a socially beneficial way. Compared to conventional logging, FM-RIL increases the proportion of total costs (per cubic meter of timber harvested) spent on salaries and additional labor by about 31% (see footnote 10). In conventional logging, that 31% is spent instead on equipment use and maintenance and fuel costs due to inefficiencies. In addition, FM-RIL operations use 64% more workers, many of whom possess special skills and training, than conventional logging operations. The dollars spent on wages stay in the Amazon region, which helps fuel the local and regional economies. In conventional operations in contrast, the beneficiaries of producer expenses for equipment and fuel are in urban centers far from the Amazon or overseas.

Another socially beneficial aspect of FM-RIL compared to conventional logging and most other land uses is that FM-RIL requires a much larger range of skills. In conventional logging, a person is a laborer, a machine operator or a crew boss; seldom is there a defined career path that allows individuals to improve their status through experience and training. In FM-RIL in contrast, various career plans are feasible even for an unskilled laborer. For example, a person can grow from a field laborer, through the various ranks of qualified labor and then to equipment operator. By training a wide range of people with varying skills and from all sectors, the project will create enabling conditions to allow greater adoption of FM-RIL in the region.

Aside from the obvious benefits to rural workers, an important consequence of the career paths and various skills associated with FM-RIL is that people trained in forestry will remain in rural areas rather than moving to cities where they might remain poor and jobless. This potential social benefit of FM-RIL is noteworthy because most cities in Amazon Basin countries are already overpopulated and have limited capacity to absorb large influxes of rural laborers.

In addition to potential careers, FM-RIL significantly upgrades attention to safety and health considerations, which is of critical importance if workers are to remain in rural settings. In every one of the proposed courses and extension activities, FFT trainers emphasize worker health and safety; in the hands-on courses, worker health and safety are a key part of the curriculum.

2.9 Risks

FFT believes that there are few risks associated with this project because of the experience gained from conducting 7 years of training in the Brazilian Amazon. Three potential risks that would affect the project are highly unlikely given recent trends. These risks derive from the possibility that the following assumptions become invalid:

- Cooperation continues between the GoB and forest stakeholders to increase adoption of good forest management practices;
• Continued commitment among stakeholders to adopt FM-RIL and continued demand for training
• CIKEL, the owner of the site where FFT will conduct the training courses, remains a willing partner

FFT considers these valid assumptions for several reasons. First, considering the large and increasing demand for FFT training (see Annex F) – including the recent request by all four Amazon Technical Schools for training in 2003 – the second assumption is easily validated by the numerous requests FFT has already received. Second, CIKEL has been a key partner for the past 7 years and recently allocated at least 2,000 ha to FFT to continue its training program. FFT has a letter of cooperation from CIKEL to demonstrate its commitment (see Annex G). Finally, the recent establishment of the PNF and other legal and policy changes indicate that the GoB is increasing in its commitment to FM in the Amazon.

Despite the points above, FFT has identified two risks—both financial—that may affect the project if they are realized. The first involves the fluctuating and uncertain currency exchange between the dollar and Brazilian real (R). The exchange rate has hovered around 3.7 Rs to the dollar in recent months. To be conservative, FFT developed a budget based on the possibility that the exchange rate would drop and the dollar become less favourable. If, however, the exchange rate drops (or is set by the new government) below the rate used in budget calculations (3.4 to 1), the budget may be insufficient to meet actual project costs. The only practical way to guard against this risk is to include a line for contingency. No such line item was included, however, to keep the overall budget as low as possible.

The second risk involves financial commitments necessary to sustain FFT and its training staff until the project begins in June 2003. In 2002, USAID and FCO supported FFT’s rainy season extension activities. USAID, and recently ProManejo, are supporting FFT’s current training activities. FFT submitted a proposal to PNF for additional training support; at present, funds are pending approval by PNF. If the PNF funds are not approved, however, it will have to search hard for other means to remain intact until it receives financing from ITTO in 2003. FFT remains confident that PNF will approve its proposal.

3. Outputs

Specific Objective 1

1.1 Course schedules for 2003 and 2004 developed in response to demand for training
1.2 Two 1,000 ha forest areas prepared for training courses (including 400 ha / year for harvesting and 600 ha / year for demonstration) during the project
1.3 Total of 410 people from all levels and all forest-related sectors trained in the application of FM-RIL principles and practices in 38 on- and off-site courses during project
1.4 Teaching and technical skills of the 13 FFT trainers improved and training repertoire expanded
1.5 FM-RIL operational manual, flip charts, and related documents refined or developed and used in training courses

1.6 Trainer lesson plans, lectures, and techniques compiled and published as FM-RIL trainer’s manual

1.7 At least 800 ha logged with FM-RIL methods during training courses

1.8 Develop and test a system for monitoring the impact of the training courses on FM-RIL – including the various levels of trainees – by the end of the project period.

**Specific Objective 2**

2.1 Annual schedules (with locations) of extension activities for 2004 and 2005 elaborated

2.2 Extension materials, dependent on the particular event, such as power point presentations, technical papers, posters, lectures, and folders updated or developed and used in events

2.3 Principles and benefits of FM-RIL explained to at least 400 participants in 16 extension events (seminars, workshops and lectures) during project

### 4. Activities

**Output 1.1** *Annual course schedules developed*

1.1.1 Schedule and promote courses

1.1.2 Screen applications; select course participants

1.1.3 Arrange travel, lodging, etc. of participants, trainers & consultants

1.1.4 Arrange for training consultants (scheduling, objectives, etc.)

**Output 1.2** *Forest areas prepared for courses*

1.2.1 Training camp prepared and upgraded

1.2.2 Training site for harvest prepared

1.2.3 Training demonstration site prepared

1.2.4 Access infrastructure (roads, bridges, culverts) maintained and prepared

1.2.5 Harvest plan submitted and approved by IBAMA – not in budget

**Output 1.3** *410 persons trained in on- and off-site courses*

1.3.1 Conduct training courses

1.3.2 Review evaluation forms and course diplomas

1.3.3 Conduct evaluations and competency tests

1.3.4 Process, analyze & synthesize evaluations for Final Report

**Output 1.4** *FFT trainer skills improved / training repertoire expanded*

1.4.1 Plan and schedule FFT-trainer development workshops and courses

1.4.2 FFT trainers attend technical workshops and courses
1.4.3 FFT trainers attend courses to increase their teaching skills

Output 1.5 FM-RIL manuals and other training materials refined / developed
1.5.1 Peer review of operational manuals and other training materials
1.5.2 Revise and tailor manuals and other training materials for each type of course
1.5.3 Print all training materials
1.5.4 Distribute manuals and other materials to course participants

Output 1.6 FM-RIL Trainer’s manual published
1.6.1 Elaboration of lesson plans, lectures, and key techniques used by trainers during each course
1.6.2 Peer review and compilation of lesson plans etc. for each training course into a trainer’s manual
1.6.3 Publication of trainer’s manual

Output 1.7 800 ha logged with FM-RIL methods
1.7.1 Acquire & transport logging equipment for RIL training harvest
1.7.2 Acquire & prepare materials & supplies for RIL training harvest
1.7.3 Conduct pre-harvest operations
1.7.4 Conduct harvest operations

Output 1.8 System for monitoring impact of training courses developed & tested
1.8.1 Prepare and disseminate a TOR for a consultant
1.8.2 Contract consultant
1.8.3 Develop monitoring system and its indicators
1.8.4 Conduct field testing of system
1.8.5 Consolidate monitoring system for use

Output 2.1 Annual extension work schedules elaborated
2.1.1 Scheduling of extension program
2.1.2 Arrange travel or logistics for extension program

Output 2.2 Extension materials updated / developed for seminars, workshops & lectures
2.2.1 Revise / update existing graphics, presentations, slide shows, and lectures for use in extension events
2.2.2 Distribute appropriate material to the participants during the extension events

Output 2.3 FM-RIL benefits explained to 400 participants in 16 events
2.3.1 Conduct extension events (seminars, workshops, & lectures
2.3.2 Conduct evaluations of events
2.3.3 Process, analyze & synthesize evaluations for Final Report
### 5. Logical Framework Worksheets

<table>
<thead>
<tr>
<th>PROJECT ELEMENTS</th>
<th>INDICATORS</th>
<th>MEANS OF VERIFICATION</th>
<th>IMPORTANT ASSUMPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEVELOPMENT OBJECTIVE</strong>&lt;br&gt;To promote the use of sustainable forest management practices by timber producers while increasing the socioeconomic benefits of forest management activities in the Brazilian Amazon</td>
<td>Increased number of companies and forest-based communities using FM-RIL methods</td>
<td>Company reports; independent audits; ITTO monitoring</td>
<td>National policies do not deter use of FM-RIL practices or preclude developing human resources&lt;br&gt;Continued cooperation between government and forest stakeholders to accelerate adoption of FM-RIL</td>
</tr>
<tr>
<td></td>
<td>Increased percentage and area (hectares) of production forests harvested with FM-RIL vs. conventional practices</td>
<td>Number of companies using FM-RIL; number of hectares harvested / being managed with FM-RIL</td>
<td>Means exist to verify indicator in the field</td>
</tr>
<tr>
<td></td>
<td>Increased number of FM-RIL elements (e.g., vine cutting, 100% inventory, etc.) being implemented by various types of producers</td>
<td>Company reports; independent field assessments</td>
<td>FM-RIL practices can be adapted for all types of producers</td>
</tr>
<tr>
<td></td>
<td>Increased proportion of logging sourced from certified sites, and those progressing to certification</td>
<td>Number of certified companies &amp; hectares&lt;br&gt;Brazilian government (GoB) and independent monitoring reports; production and trade statistics; monitoring of certification approvals and expressions of interest</td>
<td>Certification is a valid indicator of progress toward sustainable forest management</td>
</tr>
<tr>
<td></td>
<td>Increased (and more stable) employment and benefits for rural populations as compared to conventional logging practices</td>
<td>GoB statistics on employees in forest sector; uptake of trained personnel; feedback interviews from employers</td>
<td>GoB statistics accurate and up to date at time of reporting&lt;br&gt;Continued commitment by forest stakeholders to adopt FM-RIL</td>
</tr>
<tr>
<td>PROJECT ELEMENTS</td>
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<td>MEANS OF VERIFICATION</td>
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<tr>
<td><strong>SPECIFIC OBJECTIVES</strong></td>
<td></td>
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</tr>
<tr>
<td>1) Increase adoption of FM-RIL practices by timber producers in Amazonian production forests through practical training</td>
<td>410 forestry practitioners trained in the application of FM-RIL; training program (38 on- and off-site courses) completed</td>
<td>Follow-up surveys of course participants; country and sectoral reports; FFT courses offered and training activities conducted by staff; course evaluations</td>
<td>Performance in training courses is an indicator of ability to apply principles and lessons in other contexts; Clients are willing and able to sponsor training candidates and develop dissemination plans.</td>
</tr>
<tr>
<td></td>
<td>At least 90% of students from Amazon Technical Schools who participate in courses employed in FM within 1 year of graduation</td>
<td>Technical School records; government statistics; follow-up with students upon graduation</td>
<td>Continued commitment by forest stakeholders to adopt FM-RIL</td>
</tr>
<tr>
<td></td>
<td>Annual demand for FM-RIL training sustained at more than 500 people during and after project</td>
<td>FFT records of training requests</td>
<td>Continued commitment by forest stakeholders to adopt FM-RIL and invest in training</td>
</tr>
<tr>
<td>2) De-mystify the concept and promote the practice of FM-RIL amongst stakeholders in the Brazilian Amazon through extension work</td>
<td>Progressively more comprehensive training program developed in response to demand</td>
<td>Demand for FFT trained personnel from forest sector</td>
<td>Exposure to information and ideas during a single event is sufficient to stimulate interest in FM-RIL and desire for training</td>
</tr>
<tr>
<td></td>
<td>Annual demand for FM-RIL training sustained at more than 500 people during and after project</td>
<td>FFT records of Extension work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demand for extension events increased during project from 8 events per year to 10 events per year</td>
<td>FFT records of demand for extension activities</td>
<td></td>
</tr>
<tr>
<td><strong>OUTPUT 1.1</strong></td>
<td>Course schedules for 2003 and 2004 developed in response to demand for training</td>
<td>Detailed course content planned (including subject hours) Course list &amp; schedule developed</td>
<td>FFT reports, ITTO audits Landowner continues to allow on-site training</td>
</tr>
<tr>
<td></td>
<td>No of requests for training by type</td>
<td>FFT record of training requests</td>
<td></td>
</tr>
<tr>
<td>PROJECT ELEMENTS</td>
<td>INDICATORS</td>
<td>MEANS OF VERIFICATION</td>
<td>IMPORTANT ASSUMPTIONS</td>
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<td></td>
<td>Number of requests for training by sector and course at least as high as in 2002</td>
<td>FFT records of demand for training activities</td>
<td></td>
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<tr>
<td><strong>OUTPUT 1.2</strong></td>
<td></td>
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<td></td>
<td>Two 1,000 ha forest areas prepared for training courses (including 400 ha / year for harvesting and 600 ha / year for demonstration) during the project</td>
<td>Field training camp prepared (and upgraded if necessary) in time for courses. 400 ha prepared for harvest prior and during courses; 600 ha of demonstration areas prepared for courses (i.e., roads &amp; sites cleaned and maintained)</td>
<td>Prior inspection of training site and camp confirms everything is in place Km of roads and structures maintained (bridges &amp; culverts); number of demonstration areas cleaned and prepared.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Donor commitments and international support delivered on time to fulfill course schedule</td>
</tr>
<tr>
<td><strong>OUTPUT 1.3</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Total of 410 people from all levels and all forest related sectors trained in the application of FM-RIL principles and practices in on- and off-site courses during project</td>
<td>Number of actual participants for planned number of courses; relationship of on-site and of-site training and their relationship to each sector and local of origin.</td>
<td>Course evaluations by trainers and participants; FFT progress reports. Number of training certificates issued.</td>
</tr>
<tr>
<td></td>
<td>Increase by 410 the number of forestry practitioners and trainers capable of implementing, demonstrating and teaching FM-RIL methods.</td>
<td>Broader adoption of FM-RIL techniques in industry and in forest based communities Responses and uptake of trainees from sponsors / employers</td>
<td>FFT management and training crew will remain complete; GoB and industry partners will maintain interest</td>
</tr>
<tr>
<td></td>
<td>Participants selected from full range of levels and sectors</td>
<td>Records of course participants and selection process</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Participants completing courses fulfill competency standards</td>
<td>Competency based final evaluations consistent with final exam and trainer evaluations. Follow-up of past trainees</td>
<td>Appropriate exam or trainee evaluations are developed and fairly administered</td>
</tr>
<tr>
<td><strong>OUTPUT 1.4</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Teaching and technical skills of 13 FFT trainers improved and training capacities expanded</td>
<td>At least 2 courses provided for trainers;</td>
<td>Course reports by trainer-teacher</td>
</tr>
<tr>
<td>PROJECT ELEMENTS</td>
<td>INDICATORS</td>
<td>MEANS OF VERIFICATION</td>
<td>IMPORTANT ASSUMPTIONS</td>
</tr>
<tr>
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</tr>
<tr>
<td>repertoire expanded</td>
<td>13 trainers trained; Types of training offered (Technical – Teaching)</td>
<td>Certificates obtained by trainers Tuition paid by FFT</td>
<td></td>
</tr>
<tr>
<td>OUTPUT 1.5</td>
<td>FM-RIL operational manual, flip charts, and related documents refined or developed and used in courses</td>
<td>Existence of revised manuals and other training materials for use in courses (e.g., guidelines, procedures, etc.)</td>
<td>Adequate writing and graphics services can be obtained; adequate funding for printing</td>
</tr>
<tr>
<td>OUTPUT 1.6</td>
<td>Trainer lesson plans, lectures, and techniques compiled and published as FM-RIL trainer’s manual</td>
<td>Existence of one (1) FM-RIL trainer’s manual ITTO audits and FFT reports; A trainer’s manual based on FFT’s experiences can be usefully adopted by similar projects elsewhere and can speed the dissemination of good forest management</td>
<td></td>
</tr>
<tr>
<td>OUTPUT 1.7</td>
<td>At least 800 ha logged with FM-RIL methods during training courses</td>
<td>Inventory and harvest maps, harvest plans completed, and area harvested using RIL practices for each year of project. Harvesting plan (per block – UT) approved by IBAMA.</td>
<td>Landowner interest continues</td>
</tr>
<tr>
<td>OUTPUT 1.8</td>
<td>Develop and test a system for monitoring the impact of the training courses on FM-RIL – including the various levels of trainees – by the end of the project</td>
<td>One (1) system to monitor the impact of training on FM-RIL developed and tested</td>
<td>Valid and useful indicators of impact can be developed and feasibly verified</td>
</tr>
<tr>
<td>OUTPUT 2.1</td>
<td>Annual schedules (with locations) of extension activities for 2004 and 2005 elaborated</td>
<td>List &amp; schedule of extension events developed by year</td>
<td></td>
</tr>
<tr>
<td>PROJECT ELEMENTS</td>
<td>INDICATORS</td>
<td>MEANS OF VERIFICATION</td>
<td>IMPORTANT ASSUMPTIONS</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>OUTPUT 2.2</strong></td>
<td></td>
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</tr>
<tr>
<td>Extension materials, dependent on the particular event, such as power point presentations, technical papers, posters, lectures, and folders updated or developed and used in events</td>
<td>Didactic materials (presentations, flip charts, manuals, etc.) completed in time for events</td>
<td>Number and type of presentation and lecture materials developed and / or upgraded</td>
<td></td>
</tr>
<tr>
<td><strong>OUTPUT 2.3</strong></td>
<td></td>
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</tr>
<tr>
<td>Principles and benefits of FM-RIL explained to 400 participants in 16 extension events (seminars, workshops and lectures) during project</td>
<td>Increased demand for FM-RIL training during and after project Number of participants and events realized.</td>
<td>Records of participants in extension activities; evaluations Records of requests for training and other FFT services</td>
<td>Requests for training and elaboration of new forest management plans are valid indicators of increased understanding and awareness of benefits of FM-RIL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>INPUTS</th>
<th>INPUT CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1 Schedule and promote courses</td>
<td>FFT Director and staff, TFF Director; Meetings; Procurement of materials</td>
<td>Project personnel: FFT staff Consumable items: office, computers, printer, &amp; desktop publishing software; leaflets with course descriptions, schedules and applications; office supplies; letterhead &amp; envelopes; postage</td>
</tr>
<tr>
<td>1.1.2 Screen applications; select course participants</td>
<td>FFT Director, Administrator Technical staff; course coordinator</td>
<td>Project personnel: FFT staff Consumable items: office, computers, phone, fax, printer, office supplies, postage</td>
</tr>
<tr>
<td>1.1.3 Arrange travel, lodging, etc. of participants, trainers &amp; consultants</td>
<td>FFT Director, Administrator and assistants</td>
<td>Project personnel: FFT staff &amp; consultants Duty travel: for above as well as trainees Consumable items: office, phone, fax, computers, fuel</td>
</tr>
<tr>
<td>1.1.4 Arrange for training consultants (scheduling, objectives, etc.)</td>
<td>FFT Director, Administrator, and assistants</td>
<td>See 1.3</td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td>INPUTS</td>
<td>INPUT CATEGORIES</td>
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</tbody>
</table>
| 1.2.1 Prepare and upgrade training camp | FFT Director and staff | Project personnel: FFT staff  
Duty travel: for trainers, laborers  
Capital items: 4WD vehicles  
Consumable items: safety equipment, first aid, technical material, fuel, food and camp supplies |
| 1.2.2 Prepare training site for harvest | FFT Director and staff, consultant, existing maps | Project personnel: FFT staff & consultants  
Duty travel: for trainers, laborers and consultant  
Capital items: 4WD vehicles, heavy machines  
Consumable items: safety equipment, first aid, technical material, fuel and food |
| 1.2.3 Prepare training demonstration site | FFT Director and staff, consultant, existing maps | Project personnel: FFT staff & consultants  
Duty travel: for trainers, laborers and consultant  
Capital items: 4WD vehicles, heavy machines  
Consumable items: safety equipment, first aid, technical material, fuel and food |
| 1.2.4 Prepare and maintain access infrastructure (roads, bridges, culverts) | FFT Director and staff, consultant, existing maps | Project personnel: FFT staff & consultants  
Duty travel: for trainers, laborers and consultant  
Capital items: 4WD vehicles, heavy machines  
Consumable items: safety equipment, first aid, technical material, fuel and food |
| 1.2.5 Submit harvest plan for IBAMA approval | FFT Director and senior staff; CIKEL foresters; IBAMA staff | Project personnel:  
Consumable items: computers, printers, office supplies, photocopies |
| 1.3.1 Conduct training courses | FFT Director & staff; industrial partners; consultants; (see outputs 1.2, 1.3, & 1.4) | Project personnel: FFT staff, consultants, laborers  
Capital items: training site, 4WD vehicles, logging equipment (tractor, skidder, loader, chainsaws)  
Consumable items: office, training materials, safety equipment, technical and camp supplies, first aid, fuel, food  
Duty travel: for trainers, trainees, laborers, & consultants |
| 1.3.2 Review evaluation forms and course diplomas | FFT Director & staff; consultants | Project personnel: FFT staff & consultants  
Consumable items: office, computers, printer, phone, fax, office supplies, photocopies |
<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>INPUTS</th>
<th>INPUT CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.3 Conduct evaluations and competency tests</td>
<td>FFT Trainers; trainees; consultants</td>
<td>Project personnel: FFT staff &amp; consultants; Consumable items: evaluation forms</td>
</tr>
<tr>
<td>1.3.4 Process, analyze &amp; synthesize evaluations for Final Report</td>
<td>FFT staff, sub-contractor</td>
<td>Project personnel: FFT staff, sub-contractors; Consumable items: office, computers, printer, office supplies</td>
</tr>
<tr>
<td>1.4.1 Plan and schedule FFT-trainer development workshops and courses</td>
<td>FFT Director and staff, administrative</td>
<td>Project personnel: FFT staff, administrative personnel; Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.4.2 FFT trainers attend technical workshops and courses</td>
<td>FFT staff</td>
<td>Project personnel: FFT staff; Capital items: vehicles</td>
</tr>
<tr>
<td>1.4.3 FFT trainers attend courses to increase their teaching skills</td>
<td>FFT staff</td>
<td>Project personnel: FFT staff; Capital items: vehicles</td>
</tr>
<tr>
<td>1.5.1 Peer review of operational manuals and other training materials</td>
<td>FFT Director and staff; consultants; training and design specialists</td>
<td>Project personnel: FFT staff &amp; consultants; training and design specialists; Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.5.2 Revise and tailor manuals and other training materials for each type of course</td>
<td>FFT Director &amp; staff; consultants</td>
<td>Project personnel: FFT staff &amp; consultants; training and design specialists; Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.5.3 Print all training materials</td>
<td>FFT Director &amp; staff, sub-contractor</td>
<td>Project personnel: FFT staff, training and design specialists; Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.5.4 Distribute manuals and other materials to course participants</td>
<td>FFT Director &amp; staff; sub-contractor</td>
<td>Project personnel: FFT staff; Sub-contracts: printing service; Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.6.1 Elaboration of lesson plans, lectures, and key techniques used by trainers during each course</td>
<td>FFT Director &amp; staff,</td>
<td>Project personnel: FFT staff; Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td>INPUTS</td>
<td>INPUT CATEGORIES</td>
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</tr>
<tr>
<td>1.6.2 Peer review and compilation of lesson plans etc. for each training course into a trainer’s manual</td>
<td>FFT Director &amp; staff, consultant</td>
<td>Project personnel: FFT staff, consultant Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.6.3 Publication of trainer’s manual</td>
<td>FFT Director &amp; staff, sub-contractor</td>
<td>Project personnel: FFT staff Sub-contracts: printing service, translation service Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>1.7.1 Acquire &amp; transport logging equipment for RIL training harvest</td>
<td>FFT Director, Administrator, &amp; assistants; industrial partners</td>
<td>Project personnel: FFT staff Capital items: vehicles Consumable items: office, computers, printer, phone, fax</td>
</tr>
<tr>
<td>1.7.2 Acquire &amp; prepare materials &amp; supplies for RIL training harvest</td>
<td>FFT Director, Administrator &amp; assistants</td>
<td>Project personnel: FFT staff Consumable items: office, computers, printer, phone, fax, technical material, course material</td>
</tr>
<tr>
<td>1.7.3 Conduct pre-harvest operations</td>
<td>FFT Director &amp; staff; trainees; industrial partners</td>
<td>See 1.3.1</td>
</tr>
<tr>
<td>1.7.4 Conduct harvest operations</td>
<td>FFT Director &amp; staff; trainees; industrial partners</td>
<td>See 1.3.1</td>
</tr>
<tr>
<td>1.8.1 Prepare and disseminate a TOR for a consultant</td>
<td>FFT Director &amp; staff, technical partners</td>
<td>Project personnel: FFT staff Consumable items: office, computers, printer, phone, fax, technical material, course material</td>
</tr>
<tr>
<td>1.8.2 Contract consultant</td>
<td>FFT Director, administrative personnel</td>
<td>Project personnel: FFT staff Consumable items: office, computers, printer, phone, fax, technical material, course material</td>
</tr>
<tr>
<td>1.8.3 Develop monitoring system and its indicators.</td>
<td>FFT Director &amp; staff, consultant.</td>
<td>Project personnel: FFT staff, consultant Duty travel: transport costs Capital items: vehicles Consumable items: office, computers, printer, phone, fax, technical material, course material</td>
</tr>
<tr>
<td>1.8.4 Conduct field testing of system</td>
<td>FFT Director &amp; staff, consultant.</td>
<td>Project personnel: FFT staff, consultant Duty travel: transport costs Capital items: vehicles Consumable items: office, computers, printer, phone, fax, technical material, course material</td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td>INPUTS</td>
<td>INPUT CATEGORIES</td>
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<tr>
<td>1.8.5 Consolidate monitoring system for use</td>
<td>FFT Director &amp; staff, consultant.</td>
<td>Project personnel: FFT staff, consultant Duty travel: transport costs Capital items: vehicles Consumable items: office, computers, printer, phone, fax, technical material, course material</td>
</tr>
<tr>
<td>2.1.1 Scheduling of extension program</td>
<td>FFT Director &amp; staff; Meetings</td>
<td>Project personnel: FFT staff Consumable items: office, computers, printer, ; leaflets with course descriptions, schedules and applications; office supplies; letterhead &amp; envelopes; postage</td>
</tr>
<tr>
<td>2.1.2 Arrange travel or logistics for extension program</td>
<td>FFT Director, Administrator and assistants</td>
<td>Project personnel: FFT staff &amp; consultants Duty travel: transport costs Consumable items: office, phone, fax, computers, fuel</td>
</tr>
<tr>
<td>2.2.1 Revise / update existing graphics, presentations, slide shows, and lectures for use in extension events</td>
<td>FFT Director, staff</td>
<td>Project personnel: FFT staff, technical designer Consumable items: office, phone, fax, computers, fuel</td>
</tr>
<tr>
<td>2.2.2 Distribute appropriate material to the participants during the extension events</td>
<td>FFT Director &amp; staff</td>
<td>Project personnel: FFT staff Consumable items: office, computers, printer, phone, fax, office supplies</td>
</tr>
<tr>
<td>2.3.1 Conduct extension events (seminars, workshops, &amp; lectures)</td>
<td>FFT trainers &amp; target audience</td>
<td>Project personnel: FFT staff &amp; consultants Duty travel: transport costs, travel &amp; lodging Capital items: vehicle Consumable items: office, phone, fax, computers, fuel</td>
</tr>
<tr>
<td>2.3.2 Conduct evaluations of events</td>
<td>FFT Director, staff</td>
<td>Project personnel: FFT staff Consumable items: office, phone, fax, computers, fuel</td>
</tr>
<tr>
<td>2.3.3 Process, analyze &amp; synthesize evaluations for Final Report</td>
<td>FFT staff, sub-contractor</td>
<td>Project personnel: FFT staff Sub-contracts: translation service Consumable items: office, computers, printer, office supplies</td>
</tr>
</tbody>
</table>
## 6. Work Plan

<table>
<thead>
<tr>
<th>OUTPUTS / ACTIVITIES</th>
<th>Responsible</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output 1.1</strong> Course schedules for 2003 and 2004 developed in response to demand for training</td>
<td></td>
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</tr>
<tr>
<td>1.1.1 Schedule and promote courses</td>
<td>FFT/TFF</td>
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<tr>
<td>1.1.2 Screen applications; select course participants</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.3 Arrange travel, lodging, etc. of participants, trainers &amp; consultants</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.1.4 Arrange for training consultants (scheduling, objectives, etc.)</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Output 1.2</strong> Two 1,000 ha forest areas prepared for training courses (including 400 ha / year for harvesting and 600 ha / year for demonstration) during the project</td>
<td></td>
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<tr>
<td>1.2.1 Training camp prepared upgraded</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.2.2 Training site for harvest prepared</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.2.3 Training demonstration site prepared</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.2.4 Access infrastructure (roads, bridges, culverts) maintained and prepared</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.5 Submit harvest plan for IBAMA approval</td>
<td>CIKEL/IBAMA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### OUTPUTS / ACTIVITIES

<table>
<thead>
<tr>
<th>Output 1.3 Total of 410 people from all levels and all forest related sectors trained in the application of FM-RIL principles and practices in on- and off-site courses during project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3.1 Conduct training courses</td>
</tr>
<tr>
<td>1.3.2 Review evaluation forms and course diplomas</td>
</tr>
<tr>
<td>1.3.3 Conduct evaluations and competency tests</td>
</tr>
<tr>
<td>1.3.4 Process, analyze &amp; synthesize evaluations for Final Report</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output 1.4 Teaching and technical skills of the 13 FFT trainers improved and training repertoire expanded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.1 Plan and schedule FFT-trainer development workshops and courses</td>
</tr>
<tr>
<td>1.4.2 FFT trainers attend technical workshops and courses</td>
</tr>
<tr>
<td>1.4.3 FFT trainers attend courses to increase their teaching skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output 1.5 FM-RIL operational manual, flip charts, and related documents refined or developed and used in training courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5.1 Peer review of training materials</td>
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<thead>
<tr>
<th>Responsible</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFT/TFF</td>
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<tr>
<td>FFT/TFF</td>
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<tr>
<td>OUTPUTS / ACTIVITIES</td>
<td>Responsible</td>
<td>2003</td>
<td>2004</td>
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<tr>
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</tr>
<tr>
<td>1.5.2 Revise all training materials</td>
<td>FFT/TFF - Consultants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.3 Print all training materials</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.4 Distribute manuals and other training materials to course participants</td>
<td>FFT/TFF</td>
<td></td>
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</tr>
<tr>
<td><strong>Output 1.6</strong> Trainer lesson plans compiled and published as FM-RIL trainer’s manual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6.1 Elaboration of lesson plans and lectures to be used by trainers in FFT courses</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6.2 Peer review and compilation of lesson plans for each training course into a trainer’s manual.</td>
<td>FFT/TFF - Consultants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6.3 Publication of trainers manual</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Output 1.7</strong> At least 800 ha logged with FM-RIL methods during training courses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7.1 Acquire &amp; transport logging equipment for RIL training harvest</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7.2 Acquire &amp; prepare materials &amp; supplies for RIL training harvest</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7.3 Conduct pre-harvest operations</td>
<td>FFT/TFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7.4 Conduct harvest operations</td>
<td>FFT/TFF</td>
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</tr>
<tr>
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<td>Output 1.8 Develop and test a system for monitoring the impact of the training courses on FM-RIL – including the various levels of trainees – by the end of the project period.</td>
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<tr>
<td>1.8.1 Prepare and disseminate a TOR for a consultant</td>
<td>FFT/TFF</td>
<td></td>
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</tr>
<tr>
<td>1.8.2 Contract consultant</td>
<td>FFT/TFF - Consultant</td>
<td></td>
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</tr>
<tr>
<td>1.8.3 Develop monitoring system and it's indicators.</td>
<td>FFT/TFF - Consultant</td>
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<tr>
<td>1.8.4 Conduct field testing of system</td>
<td>FFT/TFF - Consultant</td>
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<tr>
<td>1.8.5 Consolidate monitoring system for use</td>
<td>FFT/TFF - Consultant</td>
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<tr>
<td>Output 2.1 Annual schedules (with locations) of extension activities for 2004 and 2005 elaborated</td>
<td></td>
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<tr>
<td>2.1.1 Scheduling of extension program</td>
<td>FFT/TFF</td>
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<tr>
<td>2.1.2 Arrange travel or logistics for extension program</td>
<td>FFT/TFF</td>
<td></td>
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<tr>
<td>Output 2.2 Extension materials, dependent on the particular event, such as power point presentations, technical papers, posters, lectures, and folders updated or developed and used in events</td>
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<tr>
<td>2.2.1 Revise and update graphics, presentations, slide</td>
<td>FFT/TFF</td>
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<table>
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<tr>
<th>OUTPUTS / ACTIVITIES</th>
<th>Responsible</th>
<th>2003</th>
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<th>2005</th>
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<td>shows, &amp; lectures</td>
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<tr>
<td>2.2.2 Distribute appropriate material to the participants during the extension events</td>
<td>FFT/TFF</td>
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<tr>
<td>Output 2.3 Principles and benefits of FM-RIL explained to at least 400 participants in 16 extension events (seminars, workshops and lectures) during project</td>
<td>FFT/TFF</td>
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<tr>
<td>2.3.1 Conduct extension events (seminars, workshops, &amp; lectures)</td>
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<td>2.3.2 Conduct extension events evaluations.</td>
<td>FFT/TFF</td>
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<td>2.3.3 Process, analyze &amp; synthesize evaluations for Final Report</td>
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<td>Steering committee meetings</td>
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### 7. Budgets

#### 7.1 Overall Project Budget by Activity (US$)

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<tbody>
<tr>
<td>Output 1.1 Course schedules for 2003 and 2004 developed in response to demand for training</td>
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<tr>
<td>1.1.1 Schedule and promote courses</td>
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<td>1.1.2 Screen applications; select course participants</td>
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<td></td>
<td>14,000</td>
<td>9,000</td>
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<tr>
<td>1.1.3 Arrange travel, lodging, etc. of participants, trainers &amp; consultants</td>
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<td>1.1.4 Arrange for training consultants (scheduling, objectives, etc.)</td>
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<td>Output 1.2 Two 1,000 ha forest areas prepared for training courses (including 400 ha / year for harvesting and 600 ha / year for demonstration) during the project</td>
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<td></td>
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<td>1.2.3 Prepare training demonstration site</td>
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<td>4,000</td>
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<td>1.2.4 Prepare and maintain access infrastructure (roads, bridges, culverts)</td>
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<td>Output 1.3 Total of 410 people from all levels and all forest related sectors trained in the application of FM-RIL principles and practices in on- and off-site courses during project</td>
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<td>72,940</td>
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<td>41,000</td>
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<td>20,200</td>
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<td>Q1&amp;2, Y1&amp;2</td>
<td>449,200</td>
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<td>1.3.2 Review evaluation forms and course diplomas</td>
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<td>1.3.3 Conduct evaluations and competency tests</td>
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<td>Q4, Y1&amp;2</td>
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<td>86,000</td>
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<td>Output 1.4 Teaching and technical skills of the 13 FFT trainers improved and training repertoire expanded</td>
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<td>1.4.1 Plan and schedule FFT trainers development workshops and courses</td>
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<td>1.4.2 FFT trainers attend technical workshops and courses</td>
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<tr>
<td>1.4.3 FFT trainers attend courses to increase their teaching skills</td>
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<td><strong>14,500</strong></td>
<td><strong>6,000</strong></td>
<td><strong>8,500</strong></td>
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<td>Output 1.5 FM-RIL operational manual, flip charts, and related documents refined or developed and used in training courses</td>
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<tr>
<td>1.5.1 Peer review of training materials</td>
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<td>Q3 &amp; 4, Y1</td>
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<td>1.5.2 Revise all training materials</td>
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<td>Q3 &amp; 4, Y1</td>
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<td>6,000</td>
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<td>1.5.4 Distribute manual and other training materials to course participants</td>
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<td>Output 1.6 Trainer lesson plans compiled and published as FM-RIL trainer’s manual</td>
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<tr>
<td>1.6.1 Elaboration of lessons plans and lectures to be used by trainers in FFT courses</td>
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<td></td>
<td></td>
<td></td>
<td>Q3 &amp; 4, Y1</td>
<td></td>
<td>4,000</td>
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<td>1.6.3 Publication of trainer’s manual</td>
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<tr>
<td>Output 1.7 At least 800 ha logged with FM-RIL methods during training courses</td>
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<tr>
<td>1.7.1 Acquire &amp; transport logging equipment</td>
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<td>Q1 &amp; 4, Y1</td>
<td>4,500</td>
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<tr>
<td>1.7.2 Acquire &amp; prepare materials &amp; supplies for RIL training harvest</td>
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<td>1.7.3 Conduct pre-harvest operations</td>
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<td>see 1.3</td>
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<td></td>
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<td>1.7.4 Conduct harvest operations</td>
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<td>see 1.3</td>
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<td>Output 1.8 Develop and test a system for monitoring the impact of the training courses on FM-RIL – including the various levels of trainees – by the end of the project period</td>
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<td>Q4, Y1</td>
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<td></td>
<td>Q4, Y1</td>
<td>1,000</td>
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<tr>
<td>1.8.3 Develop monitoring system and its indicators</td>
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<td>1,500</td>
<td>1,000</td>
<td>Q4, Y1; Q1, Y2</td>
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<td>1.8.4 Conduct field testing of system</td>
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<td>3,500</td>
<td>Q1-3, Y2</td>
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<td>Q1-3, Y2</td>
<td>15,000</td>
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<td>11,000</td>
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<td>1.8.5 Consolidate monitoring system for use</td>
<td>6,000</td>
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<td>500</td>
<td>Q3-4, Y2</td>
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<td>Q3-4, Y2</td>
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<td>Output 2.1 Annual schedules (with locations) of extension activities for 2004 and 2005</td>
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<td>1,000</td>
<td>Q4, Y1 &amp; 2</td>
<td>8,000</td>
<td>2,500</td>
<td>5,500</td>
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<td>Sub-total 2.1</td>
<td>26,008</td>
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<td>1,000</td>
<td></td>
<td>28,008</td>
<td>13,708</td>
<td>14,300</td>
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<tr>
<td>Output 2.2 Extension materials, dependent on the particular event, such as power point presentations, technical papers, posters, lectures, and folders updated or developed and used in events</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>2.2.1 Revise/update existing graphics, presentation, slide show and lectures for use in extension events</td>
<td>22,000</td>
<td></td>
<td>8,500</td>
<td>Q3, Y1 &amp; 2</td>
<td>30,500</td>
<td>5,000</td>
<td>25,500</td>
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</tr>
<tr>
<td>2.2.2 Distribute appropriate material to the participants during extension events</td>
<td>1,500</td>
<td></td>
<td>Q3 &amp; 4, Y1 &amp; 2</td>
<td>1,500</td>
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<td>Sub-total 2.2</td>
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<td>27,000</td>
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<tr>
<td>Output 2.3 Principles and benefits of FM-RIL explained to at least 450 participants in 16 extension events (seminars, workshops and lectures) during project</td>
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<tr>
<td>2.3.1 Conduct extension events (seminars, workshops, &amp; lectures)</td>
<td>210,200</td>
<td>32,000</td>
<td>7,500</td>
<td>Q3 &amp; 4, Y1 &amp; 2</td>
<td>249,700</td>
<td>52,000</td>
<td>197,700</td>
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<td>2.3.2 Conduct extension event evaluations</td>
<td>9,000</td>
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<td>Q4, Y1 &amp; 2</td>
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<td>2.3.3 Process, analyze &amp; synthesize evaluations for Final Report</td>
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<td>1,000</td>
<td>Q4, Y1 &amp; 2</td>
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<td>273,200</td>
<td>57,500</td>
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<td>361,216</td>
<td>20,200</td>
<td>1,246,124</td>
<td>499,208</td>
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<td>24,000</td>
<td>-</td>
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<tr>
<td>(2) Office equipment &amp; supplies</td>
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<td></td>
<td>23,000</td>
<td></td>
<td></td>
<td>23,000</td>
<td>-</td>
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<td>(3) Independent Audit</td>
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<td>(4) Contingency &amp; petty cash</td>
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<td></td>
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<td>Sub-total 6</td>
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<td>23,000</td>
<td>132,000</td>
<td>45,500</td>
<td>384,216</td>
<td>35,700</td>
<td>1,313,624</td>
<td>530,708</td>
<td>782,916</td>
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<tr>
<td>Sub-total ITTO</td>
<td>330,608</td>
<td>23,000</td>
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<td>30,000</td>
<td>81,100</td>
<td>5,000</td>
<td>530,708</td>
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<tr>
<td>Sub-total Ex. Agency</td>
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<td>15,500</td>
<td>303,116</td>
<td>30,700</td>
<td>782,916</td>
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<tr>
<td>TOTAL</td>
<td>693,208</td>
<td>23,000</td>
<td>132,000</td>
<td>45,500</td>
<td>384,216</td>
<td>35,700</td>
<td>1,313,624</td>
<td>530,708</td>
<td>782,916</td>
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</table>
7.2 *Yearly Project Budget by Source*

### Yearly project budget by source – ITTO

<table>
<thead>
<tr>
<th>Budget Components</th>
<th>Annual Disbursements</th>
<th>Total</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
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<tbody>
<tr>
<td>10. Project personnel</td>
<td></td>
<td>330,608</td>
<td>166,402</td>
<td>164,206</td>
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<td>20. Sub-contracts</td>
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<td>23,000</td>
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<tr>
<td>30. Duty travel</td>
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<td>61,000</td>
<td>30,500</td>
<td>30,500</td>
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<tr>
<td>40. Capital items</td>
<td></td>
<td>30,000</td>
<td>30,000</td>
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</tr>
<tr>
<td>50. Consumable items</td>
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<td>81,100</td>
<td>42,050</td>
<td>39,050</td>
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<td>60. Miscellaneous</td>
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<td>2,800</td>
<td>2,200</td>
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<td><strong>Sub-total 1</strong></td>
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<td>530,708</td>
<td>282,552</td>
<td>248,156</td>
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<tr>
<td>80. ITTO Monitoring, Evaluation &amp; Admin Costs</td>
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<td>81. Monitoring &amp; Evaluation</td>
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<td>10,000</td>
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<td>82. Ex-post evaluation</td>
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<td>15,000</td>
<td>-</td>
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<td><strong>Sub-total 2</strong></td>
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<td>292,552</td>
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<tr>
<td>83. Program Support Costs (6% of subtotal 2)</td>
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<td>90. Refund of Pre-project Costs</td>
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<tr>
<td><strong>ITTO Total</strong></td>
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<td>599,650</td>
<td>309,523</td>
<td>290,127</td>
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### Yearly project budget by source – Executing Agency (FFT)

<table>
<thead>
<tr>
<th>Budget Components</th>
<th>Annual Disbursements</th>
<th>Total</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Project personnel</td>
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<td>362,600</td>
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<td>20. Sub-contracts</td>
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<td>-</td>
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</tr>
<tr>
<td>30. Duty travel</td>
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<td>71,000</td>
<td>35,500</td>
<td>35,500</td>
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<tr>
<td>40. Capital items</td>
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<td>15,500</td>
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<tr>
<td>50. Consumable items</td>
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<td>303,116</td>
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<td>150,558</td>
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<td>60. Miscellaneous</td>
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<tr>
<td>70. Ex. Agency Management Costs (15% of Activity Budget)</td>
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<tr>
<td><strong>Executing Agency / Host Gov't Total</strong></td>
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<td>979,960</td>
<td>493,652</td>
<td>486,308</td>
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## 7.3 Consolidated Yearly Project Budget (US$)

<table>
<thead>
<tr>
<th>BUDGET COMPONENT</th>
<th>UNIT</th>
<th>TOTAL</th>
<th>ITTO portion</th>
<th>FFT portion</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Personnel</strong> (salary + legal burden)</td>
<td>Person Months</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>10</strong> National Experts</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Forest Operations Manager - 1 @ $3,000/mo</td>
<td>24</td>
<td>72,000</td>
<td>0</td>
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<td>19,200</td>
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<td>Senior Forester - 1 @ $1,600</td>
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<td>38,400</td>
<td>38,400</td>
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<td>19,200</td>
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<tr>
<td>Forester - 1 @ $1,200</td>
<td>24</td>
<td>28,800</td>
<td>0</td>
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<td>14,400</td>
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<tr>
<td>Course Coordinator - 1 @ $600</td>
<td>24</td>
<td>14,400</td>
<td>14,400</td>
<td>0</td>
<td>7,200</td>
<td>7,200</td>
</tr>
<tr>
<td>Technician I - 2 @ $1,000</td>
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<td>46,000</td>
<td>46,000</td>
<td>0</td>
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<td>22,000</td>
</tr>
<tr>
<td>Technician I - 1 @ $1,000</td>
<td>23</td>
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<td>12,000</td>
<td>11,000</td>
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<tr>
<td>Technician II - 1 @ $800</td>
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<tr>
<td>Technician II - 1 @ $800</td>
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<td>Technician III - 1 @ $400</td>
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<td>Technical designer &amp; graphics specialist - 1 @ $750</td>
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<td>Botanical Technician - 1 @ $500</td>
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<td>Operator Instructor I - 3 @ $500</td>
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<td>Operator Instructor II - 3 @ $375</td>
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<td><strong>Consultants</strong></td>
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<td>BUDGET COMPONENT</td>
<td>UNIT</td>
<td>TOTAL</td>
<td>ITTO portion</td>
<td>FFT portion</td>
<td>Year 1</td>
<td>Year 2</td>
</tr>
<tr>
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<td>16 International Experts</td>
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<td>45,000</td>
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<td>International Promotional Expert - 1 @</td>
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<td>10,800</td>
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<td>30 Duty Travel</td>
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<td>36 Trainee Transport</td>
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<td>51 Materials</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Safety equipment, medicines, &amp; 1st aid for courses participants</td>
<td></td>
<td>8,000</td>
<td>8,000</td>
<td>0</td>
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<td>Safety equipment, medicines, &amp; 1st aid for training crew</td>
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<td>8,000</td>
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<td>Technical materials for courses</td>
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<td>Office equipment &amp; supplies</td>
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<td>Course and extension materials</td>
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<td>BUDGET COMPONENT</td>
<td>UNIT</td>
<td>TOTAL</td>
<td>ITTO portion</td>
<td>FFT portion</td>
<td>Year 1</td>
<td>Year 2</td>
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<td>Fuel &amp; lubricants - operations</td>
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<td>12,000</td>
</tr>
<tr>
<td>Fuel &amp; lubricants - training courses</td>
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<tr>
<td>Food &amp; supplies - FFT operational</td>
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<td>0</td>
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<td>12,100</td>
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<tr>
<td>Equipment rental</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>CAT Tractor - 1 @ $3,125/mo x 16 mos</td>
<td></td>
<td>50,000</td>
<td>0</td>
<td>50,000</td>
<td>25,000</td>
<td>25,000</td>
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<tr>
<td>CAT Skidder - 1 @ $4,438/mo x 16 mos</td>
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<td>CAT Loader - 1 @ $3,438/mo x 16 mos</td>
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<td>27,504</td>
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<td>Chainsaws - 10 @ $40/mo x 18 mos</td>
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<td>7,200</td>
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<tr>
<td>Maintenance &amp; repairs</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Training camp infrastructure</td>
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<tr>
<td>Trainee facilities</td>
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<tr>
<td>Field equipment</td>
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<td>4,000</td>
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<tr>
<td>Trainee vehicles</td>
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<td>8,000</td>
<td>0</td>
<td>3,000</td>
<td>5,000</td>
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<tr>
<td>Operational vehicles</td>
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<tr>
<td>Course promotion and communication</td>
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<td>8,000</td>
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<td>Consumables Total</td>
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<td>Miscellaneous</td>
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<tr>
<td>Contingency &amp; petty cash</td>
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<td>Trainee insurance - 410 x $6.10 per participant</td>
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<td>1,200</td>
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<tr>
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<td>Ex. Agency Mgt Total</td>
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<td>100,492</td>
<td>96,552</td>
</tr>
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<td>Sub-total</td>
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<td>530,708</td>
<td>979,960</td>
<td>776,204</td>
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<td>ITTO Administration, Monitoring &amp; Evaluation</td>
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<td>0</td>
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<tr>
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<td>Program Support Costs (6% of ITTO portion)</td>
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<td>GRAND TOTAL</td>
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<td>979,960</td>
<td>803,176</td>
<td>776,435</td>
</tr>
</tbody>
</table>

Part III: Operational Arrangements

1. Management Structure
IBAMA and PNF will coordinate the project for ITTO and together with ABC (Brazilian Agency for International Cooperation) will audit the project's activities. FFT, in cooperation with TFF, is the executing agency in charge of all field activities and will report to ITTO. The Steering Committee will monitor the execution of the project and deliberate on operational and administrative issues. FFT's Technical Advisory Committee (TAC) will discuss and advise on technical issues. The Project Organization Chart (Annex C) illustrates relationships among these organizations as well as the overall management structure for the project.

Government institutions (e.g., EMBRAPA, IBAMA, INPA, MPEG, and SECTAM), NGOs (e.g., IMAZON and IPAM), and universities (e.g., FCAP) will provide personnel to present lectures on subjects related to the project objectives including: silviculture, forest ecology, environmental impacts, and forest legislation and economics. These partner institutions will also have an opportunity to conduct research on various issues emerging as a result of the project.

2. Monitoring, Reporting and Evaluation

Project progress reports
FFT will prepare and submit three progress reports to all these parties starting 9 months after the project initiation date. Specifically, these reports will be completed in February 2004, September 2004 and February 2005. FFT will submit the progress reports (financial and operational) to the ABC and the Agricultural and Commodities Division (DPB) for analysis and to facilitate national monitoring. Once approved, ABC will forward the reports to ITTO for consideration.

Project completion report
FFT will prepare and submit the project completion report to ITTO and ABC within 3 months of project completion. The same procedure described above will be followed.

Project technical reports
The principal technical documents this project will generate are (i) the trainer's manual, (ii) other training and teaching aids used in the courses and extension activities, and (iii) a report based on the test of the monitoring system to assess the impact of the training courses (output 1.8). FFT will submit all of these technical documents to ITTO with the project completion report. In addition, FFT will make available to ITTO and other interested parties any other relevant reports generated as a result of the project.

Monitoring, review and steering committee visits
The project steering committee, IBAMA/PNF, ABC, FFT, and ITTO will share responsibility for project monitoring. The steering committee will meet three times during the project (see workplan). The specific dates will be determined once the project begins, but the proposed dates are November 2003, April 2004 and April 2005.
**Evaluation**

The project will be subject to *ex-post* evaluation in accordance with Guidelines established by the ITTO Manual of Project Monitoring, Review and Evaluation. ABC will also evaluate the project according to the Brazilian technical cooperation guidelines.

3. **Future Operation and Maintenance**

*Continued use of assets*

It is hoped that a longer term, more sustainable training program will be established by the time this project terminates. FFT’s existing program will be absorbed by the new Brazilian NGO Instituto Floresta Tropical (IFT), which in turn will evolve into this new program. Assuming these plans are realized, the IFT will continue using the principal assets generated as a result of this project. IFT will use the facilities — especially the training camp and numerous silvicultural and FM-RIL demonstration sites in Cauaxi — and materials developed as a result of this project in its longer-term training program.

*Continuation of program following project termination*

As mentioned several times in this proposal, the problem of lack of trained forestry practitioners is deep, characteristic of most parts of the Amazon Basin, and likely to persist for several years the outputs of this project notwithstanding. Ultimately, therefore, this problem will be most effectively addressed with a long-term, self-sufficient, training center dedicated to providing practical, on-site training for forest sector professionals at all levels. The GoB, FFT and other partners are committed to developing such a center by the time the proposed project terminates. Assuming that goal is achieved, the training and extension activities executed by the current project will be expanded, codified, and continued by the new center.

Since the idea of developing an Amazon forest management training center was first advanced during the July 1999 ITTO Steering Committee meeting, FFT, the GoB, and other partners have already made significant progress toward its establishment. At the July meeting, the Steering Committee suggested that FFT submit a proposal to help fund the training center’s establishment and operation. For various reasons the proposal was not submitted. With funding from USAID Brazil, FFT developed a more detailed proposal and business plan. FFT submitted the peer-reviewed version to both the GoB and other potential donors in December 2001 (see Annex J).

Although various meetings and workshops to advance the training center’s establishment were held over the past 36 months, a conclusive meeting took place on the 25th of February 2003 between the Ministry of Environment (MMA), IBAMA, and FFT. At this meeting, MMA, IBAMA, and FFT reached consensus on various issues and set a time schedule set for the establishment of the training center (see Annex K). One key agreement was that the center would not only serve Brazil but also other ITTO member countries in the Amazon basin. In addition, the partners agreed that the training activities of this center would target the full range of forestry practitioners (all actors relevant to the implementation of FM-RIL) as well as a broad spectrum of entities in the forest sector. A final key point of consensus was that the center would be operated on a partnership basis with many organizations that both financially support the center and actively participate in the center’s activities and programs.
Part IV. The Tropical Timber Framework

1. Compliance with ITTA Objectives

This project proposal is consistent with the following ITTO objectives:

• To help research & development which will improve forest management and wood use
• To encourage tropical timber reforestation and forest management
• To encourage national policies which aim at sustainable use and conservation of tropical forests and their genetic resources, and at maintaining the ecological balance in the regions concerned

The project also complies with ITTO criteria established by the Committee on Reforestation and Forest Management and is principally related to the following areas:

• Natural Forest Management
• Harvesting, logging infrastructure, training of technical personnel

The project also with each of the following objectives established by this committee:

• relation to production and use of industrial tropical timber
• benefits to the tropical timber economy and relevance to producing and consuming nations
• relation to maintenance and expansion of the international tropical timber trade
• prospects for positive economic returns
• use of existing research institutions and relationship to other efforts supported by ITTO

2. Compliance with ITTO Action Plan

This project proposal is consistent with the ITTO Action Plan and it relates to the priorities established by the Committee on Reforestation and Forest Management in the areas classified within Demonstration as follows:

• Demonstrate the economic viability and promote long-term investments in sustainable forest management
• Develop and promote the intellectual, economic and technological basis for integrated forest management systems and optimal use of the tropical forests, taking in consideration multiple benefits that can be derived from them
• Assist in creating a scientific basis for sound forest management

and within Facilitation as follows:

• Promote and assist in the development of adequate skills for research and for implementation of forest management operations
• Facilitate the establishment of demonstration areas that reflect different models of management to enhance the transfer of technology and scientific knowledge.

It also relates to the following priority established by the Forest Industry Committee:

• Promotion of human resources development on all levels.

Finally, it is worth noting that this proposal is consistent with the recommendations of the recently conducted diagnostic survey\textsuperscript{15} in Brazil to elucidate the key impediments to the achievement of the ITTO 2000 objective in Brazil. The report concluded that the ITTO should support proposals in five categories. The development of human resources for the implementation of sustainable forest management was one of the priority areas for ITTO support recommended in the report. This project aims to achieve exactly that goal.

Annex A. Executing Agency Profile

Executing Agency Expertise

In 1994, the Tropical Forest Foundation (TFF), a U.S. based non-profit organization dedicated to the achievement of sustainable forest management in the tropics, established its FM-RIL program in the Brazilian Amazon. Building on IMAXON’s research that demonstrated the technical feasibility and financial viability of FM-RIL, TFF’s objective was to accelerate the adoption of FM-RIL by producers across the Amazon. In 1995, TFF created a subsidiary, the Fundação Floresta Tropical (FFT), to implement this program. The FM-RIL program integrates practical training with demonstration models and applied research. It also involves a broad coalition of stakeholders including private landowners, industry, the conservation community, government agencies, and donors. The FFT organizational chart is at the end of this annex.

By 1997, FFT had established five FM-RIL model sites and trained a core crew of foresters, technicians, and operators. With funds from USAID and the World Bank, the FFT crew trained other forestry practitioners through on-site field courses. In 1998, FFT began a 2-year ITTO-funded project that eventually trained 138 foresters, trainers, and technicians from Brazil, Guyana, Suriname, Colombia, Ecuador, Peru, Venezuela, and Ghana. In 2000 and 2001, FFT continued and expanded its training courses with funds from ProManejo. Including the training of personnel and other involvement, for the companies which have been SFC certified in the Amazon during this period.

To date, funding to pay for the costs incurred by FFT has been through the generous assistance of international donors. In the past three years, USAID, USFS, ProManejo, Caterpillar, Inc., and the British Embassy have provided the bulk of FFT’s support. Overall, in the past 6 years, TFF and FFT have raised over 5.5 million dollars from international donors in a combined effort to improve forest management in the Brazilian Amazon.

The practical training offered by FFT, along with many other related efforts, has catalyzed a strong interest in forest management and created a demand for skilled forestry personnel at all levels. In the past 5 years, FFT has received an increasing number of requests for qualified people from all sectors as well as from all types of producers. FFT’s rainy season extension work has contributed in part to this increasing demand. FFT’s applied research – especially the recently published cost-benefit study that demonstrated the cost-effectiveness of FM-RIL – has also played a key role in convincing producers to adopt better management practices.

FFT/TFF Accomplishments

- 7 years of practical training experience
- 1,200 people trained
- $5.5 million in international grants received
- 8 years of FM-RIL model development
- 12 practical FM-RIL manuals published
- Several videos (including training videos) distributed
- Helped IBAMA improve FM regulations
FFT’s success in Brazil prompted TFF to extend its efforts to other tropical regions. At present, TFF also has FM-RIL projects in Indonesia and Guyana – with active or pending ITTO projects in both countries – and is working with partners to promote the adoption of sustainable forest management in other regions as well.

**Executing Agency Infrastructure**

TFF is headquartered in Alexandria, VA, USA, where it rents office space with meeting rooms. Its location allows TFF to interact with the numerous international development and conservation agencies based in Washington, D.C.

FFT is headquartered in Belem, Pará, Brazil where it rents an office. FFT’s Director and permanent staff work out of this office, which is equipped with a computer network and other standard office equipment and supplies. FFT stores all its field equipment and supplies as well as its vehicles at this office. FFT’s location affords it easy access to banking and other key services as well as to the numerous government agencies and other institutions working to improve forest management in the Amazon.

FFT has established FM-RIL demonstration models in five different forest sites in the Brazilian Amazon. FFT has conducted training courses at all of these sites, but one of them, Fazenda Cauaxi (near Paragominas, Pará), has been FFT’s principal training site for the past 6 years.

Fazenda Cauaxi was the site of FFT’s first ITTO supported project, PD 45/97 Rev. 1(F), and has also served as the site for courses FFT has conducted with ProManejo support. The landowner, CIKEL, has allocated more than 2,000 ha for FFT to conduct training over the next 4-5 years. It is noteworthy that after 4 years of quietly observing FFT’s FM-RIL activities at this site, CIKEL finally requested that FFT train all of its field personnel; CIKEL is now the largest producer of certified wood in tropical South America. Every year, the site becomes more valuable for training because it (i) has a suitable field camp with access to potable water; and (ii) is accessible to forest areas harvested with FM-RIL practices since 1995; and (iii) has been used as a training and applied research site since 1995. These latter two advantages in particular make the site invaluable for training because course participants can observe the results of various years of FM-RIL harvesting as well as silvicultural and other experiments.

**Executing Agency Budget**

During the past three years, FFT’s annual budget has averaged about $650,000. FFT had to reduce its budget somewhat in 2002 – mostly by reducing staff – because the ProManejo program ended. The following table shows the approximate cash budget for corresponding components for the past three years:
These budget numbers do not show the total cost for TFF administration and overhead nor most of the in kind contributions. It is important to note that the decrease steady decrease in expenses is a result of the exchange rate fluctuation: in 2000, the rate was bad; in 2001, it was normal; and in 2002 it was favorable. The exchange rate masks the fact that most costs stayed the same and personnel salaries actually increased in the past 3 years because the trainers have gained more experience and been upgraded through professional development workshops. It is worth noting that the annual budget for personnel in the proposed budget is very much inline with the costs shown in the above table.

**Executing Agency Personnel**

FFT has invested substantial time and money in developing the professional skills of its training staff. Other key staff members, including management and administrative personnel are also pushed to continue developing their skills. Because training is a central activity for FFT, it has a large permanent staff of qualified and experienced personnel. FFT’s apprenticeship program has allowed it to provide extensive training to young foresters and technicians, several of whom are now part of FFT’s training staff. The table below shows the number of FFT staff personnel with their corresponding levels and functions, this does not include the 12 additional qualified field personnel which are supplied by the CIKEL company as counterpart support:

<table>
<thead>
<tr>
<th>Level of Expertise</th>
<th>Personnel (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-graduation degrees</td>
<td>3</td>
</tr>
<tr>
<td>Graduation degrees</td>
<td>5</td>
</tr>
<tr>
<td>Mid-level technicians</td>
<td>12</td>
</tr>
<tr>
<td>Administrative</td>
<td>4</td>
</tr>
<tr>
<td>Field Support (cooks - drivers)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total staff in forestry related field</strong></td>
<td><strong>28</strong></td>
</tr>
</tbody>
</table>

In addition to these permanent staff, FFT benefits from its partnership with CIKEL, which provides 12 field assistants for FFT’s training courses and other field activities in Cauaxi.
SPONSORS AND SUPPORTERS
- Wood Industry
- Forest Equipment Industry
- Forest Management Research Institutions
- NGO's
- Private Foundations
- Government Institutions
- Others

PersoNNeL
- Director
- Administrator
- Forest-Trainers
- Forest Technical-Trainers
- Sawyer-Trainers
- Machine Operator-Trainers

ACTIVITIES
- Project Establishment
- Demonstrate Benefits of Management
- Research Support
- Diffusion of Management Techniques (On-site and off site Courses, Extension activities: seminars, lectures, videos and technical workshops, etc.)
Anex B. Terms of Reference and Curricula Vitae

National Experts

**Function:** Forest Operations Manager

**Title:** Forester

**Qualifications:**
- Professional with 6 years of experience in tropical forestry and in education or training
- Specific forest management and RIL experience in the Brazilian Amazon.
- Specialization in community forest management and small riverine producers.
- Minimum 5 years experience in project coordination and administration
- Strong communication and organizational skills
- Proven leadership abilities
- Proven abilities to coordinate and negotiate with key stakeholders including government agency officials
- Fluent in Portuguese and Spanish, English desirable

**Responsibilities:**
- Substitute for the Director in his absence
- Coordinate logistical and technical aspects of project (establishing contact with applicants, communicating with candidates, helping schedule courses, updating course content and materials, compiling/distributing course evaluation and trainee recommendations)
- Maintain dialogue between FFT, the Steering Committee and ITTO
- Coordinate courses and extension activities
- Responsible for fulfilling course requirements
- Write progress reports in accordance with ITTO guidelines
- Assist in participant selection process
- Assist in development of training materials
- Provide lectures on costs & benefits of FM-RIL
- Provide lectures on community forestry and small producers
- Coordinate production of training materials
- Assist in development of course promotional materials
- Assist in the coordination of technical and operational materials.
- Help acquire imported technical and safety equipment

**Function:** Senior Forester

**Title:** Senior Forester

**Qualifications:**
- Brazilian national
- Fluent in Portuguese, Spanish desirable
- Minimum 3 years experience in administration of forestry activities, forest management, forest harvesting and silviculture in the Amazon
- Experience in the function of forest harvesting equipment and implementation of RIL operations
- Knowledge and experience in data collection and processing
• Good communication skills and proven capacity to train others
• Experience conducting seminars and giving lectures
• Proven ability to manage and relate to employees
• Knowledge of and ability to enforce safety and hygiene regulations

Responsibilities:
• Coordinate and directly participate in field activities
• Coordinate and participate in data processing and analysis
• Participate in the development of training materials
• Assist in planning and developing course activities
• Develop and give lectures about various FM-RIL activities and methods
• Supervise all project personnel and provide leadership on all project activities
• Enforce safety and hygiene regulations for all course related activities
• Assign work details to field crew on a daily basis

Function: Course Coordinator
Title: Course Coordinator
Qualifications:
• Bilingual – Spanish, Portuguese and English desirable
• General computer skills (e.g., word processing, spreadsheets, and preparation of summary tables)
• Good communication (writing and speaking) and organizational skills

Responsibilities:
• Coordinate all administrative activities related to trainees
• Organize and maintain all course materials, correspondences and contacts
• Provide management with summaries of participant requests for evaluation
• Provide information to all those interested how to participate in the courses
• Make travel arrangements and purchase necessary tickets

Function: Forester
Title: Forester
Qualifications:
• Brazilian national
• Fluent in Portuguese; Spanish desirable
• Minimum 3 years experience in administration of forestry activities, forest management, forest harvesting and silviculture in the Amazon
• Knowledge of RIL methods for forest harvesting machines
• Knowledge and experience in data collection and processing
• Good communication skills and proven capacity to train others
• Proven capacity to give lectures to a variety of audiences
• Knowledge of and ability to enforce safety and hygiene regulations

Responsibilities:
• Coordinate and directly participate in field activities
• Coordinate and participate in data processing in the field
• Develop and give lectures about various FM-RIL methods
• Organize and facilitate debates about the field practices
• Enforce safety and hygiene regulations for all course related activities
• Assign work detail to field crew and supervise their activities
• Substitute for the Senior Forester in his absence.

**Function: Forest Technician logging and forestry machine specialist**

**Title:** Technician I

**Qualifications:**
• Brazilian national
• Fluent in Portuguese, Spanish desirable
• Professional with more than 5 years experience implementing FM-RIL methods in the Amazon
• Professional with more than 5 years experience giving lectures and conducting courses in FM-RIL in the Amazon
• Specific experience in mechanized harvest activities
• Proven ability with heavy equipment use and chainsaw practices
• Manual map-making (Draftsman) skills
• Proven ability to supervise field crews
• Good communication skills
• Computer skills (including ArcView, Excel, and Access)
• Knowledge of and ability to enforce safety regulations

**Responsibilities:**
• Supervise crews during execution of field activities
• Review and disseminate practical and theoretical knowledge during the courses
• Develop and improve training materials for courses on heavy equipment and chainsaws use.
• Provide lectures on the use of heavy equipment and chainsaw practices and maintenance
• Discuss field practices with crews and with course participants
• Develop and give lectures on logging methods with emphasis on safety
• Be able to substitute as lecturer for other FM-RIL activities
• Be able to provide lectures on manual map making and different types of maps in FM-RIL
• Enforce safety regulations for all course related activities
• Assign work to field crew

**Function: Forest Technician pre-harvest and post harvest activities specialist**

**Title:** Technician I

**Qualifications:**
• Brazilian national
• Fluent in Portuguese, Spanish desirable
• Professional with more than 5 years experience implementing FM-RIL methods in the Amazon
• Professional with more than 5 years experience giving lectures and conducting courses in FM-RIL in the Amazon
Specific experience in carrying out pre-harvest and post harvest components of FM-RIL
Knowledge of silvicultural treatments and the ability to provide instruction on the same.
Proven ability to supervise field crews
Good communication skills
Computer skills (including Excel and Access)
Knowledge of and ability to enforce safety regulations

Responsibilities:
- Supervise crews during execution of field activities
- Review and disseminate practical and theoretical knowledge during the courses
- Discuss field practices with crews and with course participants
- Develop and give lectures on pre harvest activity methods
- Develop and give lectures on silvicultural post harvest practices
- Be able to substitute for other field activities in harvest and planning
- Computer skills (including Excel and Access)
- Provide lectures on inventory data processing.
- Enforce safety regulations for all course related activities
- Assign work to field crew

Function: Forest Technician harvest planning specialist
Title: Technician I
Qualifications:
- Brazilian national
- Fluent in Portuguese, Spanish desirable
- Professional with more than 5 years experience implementing FM-RIL methods in the Amazon
- Professional with more than 5 years experience giving lectures and conducting courses in FM-RIL in the Amazon
- Specific experience in harvest planning, including roads, skid trails, and drainage systems.
- Understand the use of heavy equipment used in FM-RIL methods
- Proven ability to supervise field crews
- Good communication skills
- Computer skills (including Excel and Access)
- Familiarity with special technical equipment used in land surveys, road layout, and general planning.
- Ability to use and conduct courses in road layout and block layout, skid trail layout.
- Knowledge of and ability to enforce safety regulations

Responsibilities:
- Supervise crews during execution of field activities
- Be able to substitute other technical trainers in any other FM-RIL activity
- Review and disseminate practical and theoretical knowledge during the courses
- Discuss field practices with crews and with course participants
- Develop and give lectures on harvest planning activity methods
- Provide lectures on heavy equipment use in FM-RIL
- Enforce safety regulations for all course related activities
- Assign work to field crew
**Function:** Forest Technician  
**Title:** Technician II  

**Qualifications:**
- Brazilian national  
- Fluent in Portuguese; Spanish desirable  
- Professional with more than 3 years experience implementing FM-RIL methods in the Amazon  
- Professional with more than 3 years experience giving lectures and conducting courses in FM-RIL in the Amazon  
- Proven ability to supervise field crews  
- Good communication skills  
- Computer skills and in particular with Excel, Access, ArcView and other mapping programs  
- Knowledge of and ability to enforce safety regulations  

**Responsibilities:**
- Supervise crews during execution of field activities  
- Review and disseminate practical and theoretical knowledge during the courses  
- Discuss field practices with crews and with course participants  
- Give lectures on pre harvest, harvest and post harvest activities methods  
- Provide lectures on computer use in FM-RIL and in particular ArcView and inventory processing  
- Substitute for (or assist) Technician I in field training of participants  
- Enforce safety regulations for all course related activities  
- Assign work to field crew  

**Function:** Forest Technician  
**Title:** Technician III  

**Qualifications:**
- Brazilian national  
- Fluent in Portuguese; Spanish desirable  
- Professional with more than 2 years experience implementing FM-RIL practices in the Amazon  
- Proven ability to supervise field crews  
- Good communication skills and prior training experience  
- Experience giving lectures  
- Computer skills  
- Knowledge of and ability to enforce safety regulations  

**Responsibilities:**
- Supervise crews during execution of field activities  
- Discuss field practices with crews and with course participants  
- Support Technician I and II in their training activities  
- Enforce safety regulations for all course related activities  
- Assign work detail to field crew
**Function:** Technical designer and graphics specialist  
**Title:** Technical designer and graphics specialist  
**Qualifications:**  
- Brazilian national  
- Computer skills (graphic design software and Powerpoint)  
- Proven ability to develop training materials and illustrations  
**Responsibilities:**  
- Develop graphics and illustrations for technical material  
- Review and up-date the layout and general presentation of technical materials  
- Support the technicians in developing visual training aids

**Function:** Tree identifier  
**Title:** Botanical Technician  
**Qualifications:**  
- Brazilian national  
- Fluent in Portuguese; Spanish desirable  
- Professional with more than 20 years experience in the identification of Amazon forest species as well as in the collection and preservation of botanical specimens  
- At least 5 years of practical experience conducting 100% and permanent plot inventories  
**Responsibilities:**  
- Identify plant species (common and scientific), principally woody species (all size classes) during forest inventory and permanent plot survey  
- Collect botanical specimens for future identification and preservation  
- Convey basic knowledge about how to systematically identify principal timber species  
- Support the technician I, who lectures on inventory systems

**Function:** Crawler tractor operator and instructor  
**Title:** Operator Instructor I  
**Qualifications:**  
- Brazilian national  
- Fluent in Portuguese  
- Professional with more than 15 years experience operating various crawler tractor models  
- Development training in a factory or authorized technical assistance provider  
- At least 5 years experience in implementation of FM-RIL practices in the Amazon  
- At least 5 years experience giving lectures and conducting courses in FM-RIL in the Amazon  
- Good communication skills  
- Ability to monitor the operation and maintenance of machines and related equipment  
- Knowledge of safety regulations  
**Responsibilities:**
• Convey RIL operating methods of the crawler tractor and related equipment as needed throughout the project
• Use appropriate operational techniques designed to reduce the impact of the machines on the forest
• Provide lectures and disseminate knowledge about the operation and maintenance of the machines and related equipment during the course
• Observe safety regulations

**Function: Skidder operator and instructor**

**Title: Operator Instructor I**

**Qualifications:**
• Brazilian national
• Fluent in Portuguese
• Professional with more than 15 years experience operating various models of articulated, wheeled tractors
• Development training in a factory or authorized technical assistance provider
• At least 5 years experience in implementation of FM-RIL practices in the Amazon
• At least 5 years experience giving lectures and conducting courses in FM-RIL in the Amazon
• Good communication skills
• Ability to monitor the operation and maintenance of machines and related equipment
• Knowledge of safety regulations

**Responsibilities:**
• Convey RIL operating methods of the crawler tractor and related equipment as needed throughout the project
• Use appropriate operational techniques designed to reduce the impact of the machines on the forest
• Provide lectures and disseminate knowledge about the operation and maintenance of the machines and related equipment during the course
• Observe safety regulations

**Function: Sawyer and instructor**

**Title: Operator Instructor I**

**Qualifications:**
• Brazilian national
• Fluent in Portuguese
• Professional with more than 10 years experience operating chainsaws
• Development training in a factory or authorized technical assistance provider, including mechanics, operation, maintenance and cutting techniques
• At least 5 years experience in implementation of FM-RIL practices with application of directional felling methods in the Amazon
• At least 5 years experience giving lectures and conducting courses in FM-RIL in the Amazon
• Good communication skills
• Ability to monitor the operation and maintenance of chainsaws in the field
• Knowledge of safety regulations
Responsibilities:
• Convey RIL operating methods of the crawler tractor and related equipment as needed throughout the project
• Use appropriate operational techniques designed to reduce the impact of tree felling on the residual forest
• Review and disseminate knowledge about the operation and maintenance of chainsaw during courses
• Observe safety regulations

Function: Loader operator and instructor
Title: Operator Instructor II
Qualifications:
• Professional with more than 5 years experience
• Experience operating and maintaining heavy machines
• Good communication skills
• Ability to monitor the operation & maintenance of machines and related equipment in the field
• Knowledge of safety regulations

Responsibilities:
• Convey RIL operating methods of the loader as needed throughout the project
• Use appropriate techniques to reduce the impact of machine use on the forest
• Review and disseminate knowledge about the operation and maintenance of the loader during the courses
• Be able to substitute other equipment operators on a variety of machines
• Observe safety regulations

Function: Sawyer and instructor
Title: Operator Instructor II
Qualifications:
• Brazilian national
• Fluent in Portuguese
• Professional with 5 years experience operating chainsaws
• Development training in a factory or authorized technical assistance provider, including mechanics, operation, maintenance and cutting techniques
• At least 2 years experience in implementation of FM-RIL practices with application of directional felling methods in the Amazon
• At least 2 years experience giving lectures and conducting courses in FM-RIL in the Amazon
• Good communication skills
• Ability to monitor the operation and maintenance of chainsaws in the field
• Knowledge of safety regulations

Responsibilities:
• Convey RIL operating methods of the crawler tractor and related equipment as needed throughout the project
• Use appropriate operational techniques designed to reduce the impact of tree felling on the residual forest
• Review and disseminate knowledge about the operation and maintenance of chainsaw during the course
• Be able to substitute for the sawyer I in lectures and courses on chainsaw operation and maintenance
• Observe safety regulations

**Function:** Equipment operator and instructor  
**Title:** Operator Instructor II  
**Qualifications:**
• Brazilian national  
• Fluent in Portuguese  
• Professional with more than 5 years experience operating related forests equipments  
• Development training in a factory or authorized technical assistance provider  
• At least 2 years experience in implementation of FM-RIL practices in the Amazon  
• At least 2 years experience giving lectures and conducting courses in FM-RIL in the Amazon  
• Good communication skills  
• Ability to monitor the operation and maintenance of machines and related equipment  
• Knowledge of safety regulations  
**Responsibilities:**
• Convey RIL operating methods of related equipment as needed throughout the project  
• Use appropriate operational techniques designed to reduce the impact of the machines on the forest  
• Review and disseminate knowledge about the operation and maintenance of the machines and related equipment during the course  
• Observe safety regulations

**ITTO Project Administration Personnel**  
**Function:** Course Logistics & Materials Coordinator  
**Title:** Course Logistics & Materials Coordinator  
**Qualifications:**
• Brazilian national  
• Fluent in Portuguese; Spanish desirable  
• At least 20 years experience in business administration with an emphasis in purchasing and acquisition of materials, supplies and equipment, for forest management projects in the Amazon  
• Proven ability to provide logistical support to field crews and to maintain field vehicles  
• Accounting knowledge and experience  
**Responsibilities:**
• Acquire all necessary materials, supplies and equipment for courses  
• Provide all logistics support for courses and field activities  
• Maintain all vehicles associate with participant travel and course activities in good order  
• Acquire provisions and necessary food supplies for courses  
• Maintain direct communication with field crews
**Function: Accountant**
**Title:** Accountant

Qualifications:
- Brazilian national
- Fluent in Portuguese; Spanish and some English desirable
- Accounting specialization
- 10 years experience in business administration with an emphasis in project accounting in the Amazon

Responsibilities:
- Maintain accurate and up-to-date accounting records for the ITTO project
- Maintain direct communication with project director

**Other Labour**

**Function:** Training camp coordinator
**Title:** Training camp coordinator

Qualifications:
- Brazilian national
- Knowledge of and ability to maintain a clear area
- Knowledge of safety regulations

Responsibilities:
- Total responsibility for training camp maintenance
- Enforce safety regulations in training camp area
- Storage of all technical materials, supplies and equipment

**Function:** Camp Nurse
**Title:** Nurse technician

Qualifications:
- Brazilian national
- Fluent in Portuguese, Spanish desirable
- At least 2 years experience
- Good communication skills
- Knowledge of safety regulations

Responsibilities:
- Assist all courses and give nursing assistance for trainees, trainer and field crew
- Control, organize and maintain first aid materials and equipment

**Function:** Cook I
**Title:** Cook I

Qualifications:
• Professional with 5 years experience cooking in field camps
• Experience in the requisition and control of provisions and necessary cooking supplies
• Knowledge of and ability to provide a healthy, balanced diet
• Knowledge of hygiene and ability to maintain a clean cooking area

**Responsibilities:**
• Coordinate and supervise all kitchen related activities
• Responsible for timely requisition of adequate food throughout the project period
• Forecast and make lists of all necessary supplies and provisions
• Observe safety and hygiene regulations

**Function: Cook II**

**Title:** Cook II

**Qualifications:**
• Professional with 2 years experience cooking in field camps
• Experience in the acquisition and control of provisions and necessary cooking supplies
• Knowledge of hygiene and ability to maintain a clean cooking area

**Responsibilities:**
• Help Cook I in kitchen related activities
• Responsible for timely delivery of adequate food throughout the project
• Control and make lists of all necessary supplies and provisions
• Observe safety and hygiene regulations

**Function: Driver I**

**Title:** Driver I

**Qualifications:**
• Professional with more than 5 years experience and a Class C operating license
• Experience working in forest areas
• Good communication skills
• Knowledge of safety regulations

**Responsibilities:**
• Total responsibility for the operation and maintenance of field support vehicles and drivers
• Daily transport of crews, food and needed supplies as needed throughout the project
• Observe safety regulations

**Function: Driver II**

**Title:** Driver II

**Qualifications:**
• Professional with at least 2 years experience and a Class C operating license
• Experience working in forest areas
• Good communication skills
• Knowledge of safety regulations

Responsibilities:
• Operation and maintenance of field support vehicles
• Daily transport of crews, food and needed supplies as needed throughout the project
• Observe safety regulations

Function: Field camp assistant
Title: Field camp assistant

Qualifications:
• Basic verbal skills
• Experience working on a field crew

Responsibilities:
• Help maintain clean and safe living quarters in the field
• Assist kitchen staff as needed throughout project

Function: Field crew assistant
Title: Laborers

Qualifications:
• Basic verbal skills
• Experience working on a field

Responsibilities:
• Help technicians and operators in the field work

International Experts

Function: General Director
Title: Project director

Qualifications:
• Degree in Forestry and Forest Management
• 30 years of direct forest management experience in the Brazilian Amazon with expertise in reduced impact logging
• 25 years experience in project management, personnel management and training
• Specific experience working with – and creating linkages among – government, industry, NGOs and international development institutions
• Fluent in Portuguese and English, Spanish desirable

Responsibilities:
• Manage and supervise all project activities including preparation, training, evaluation and follow-up
• Manage and supervise all project personnel
• Manage project finances and supervise accounting
• Supervise selection of course participants
• Meet with Steering Committee to review results and at other times as needed
• Meet with independent auditor to review financial accounts
• Approve purchase of all capital items
• Supervise and approve acquisition and transport of all equipment and materials
• Supervise development of training materials
• Approve progress reports
• Report to Board of Directors and Donors

**Function: International course promotion**

**Title:** International promotional expert

**Qualifications:**
• 30 years experience and expertise in information dissemination with specific experience in the tropical timber industry
• Proven ability to organize and run major international events
• At least 10 years of experience in fundraising for NGO activities in forest management
• At least 6 years of experience promoting and facilitating FM-RIL training courses

**Responsibilities:**
• Advise officials in relevant government agencies, universities and NGOs in LAC of training opportunity, request cooperation and assistance in advertising and promoting courses
• Establish and maintain database off all relevant contacts for courses in non ITTO member countries
• Assist in counterpart fundraising in conjunction with the project director
• Work with project director and coordinator to develop course promotional materials
• Supervise development, production and distribution of course promotional materials
• Supervise establishment of a course database including all relevant contacts

**Consultants**

**Function: Consultant**

**Title:** First Aid and Safety Instructor for forest workers

**Qualifications:**
• Professional with more than 6 years experience as Military First Aid and Safety instructor
• Specific experience as instructor of first aid
• Good communication skills
• Experience giving lectures
• Knowledge of safety regulations

**Responsibilities:**
• Develop and give lecture on first aid for forest workers
• Disseminate practical and theoretical knowledge during the courses
• Instructor in safety regulations
• Develop specific manual for forest workers first aid and safety
Function: Consultant

Title: Environmental Law

Qualifications:

• Fluent in Portuguese; Spanish desirable
• Minimum 5 years research experience in Brazilian environmental law with a concentration on forestry laws, policies, and regulations (especially of those pertaining to Amazon forests)
• Working knowledge of environmental, forestry, and other relevant laws and regulations from all ITTO member countries in the LAC region
• Author of peer-reviewed articles and various lectures on this subject
• Experience teaching environmental law and related topics

Responsibilities:

• Give classes on Brazilian forestry laws and regulations
• Facilitate exchange of information on national forestry laws among trainees from participating countries
• Facilitate discussion regarding international pressures for and against forest resource utilization given the socio-economic, political and environmental context in Brazil
• Facilitate discussion on impact of international and national trade and commercial practices on forest management
• Prepare training materials on Brazilian forestry legislation for inclusion in the training manual

Function: Consultant

Title: Silviculture and Forest Management

Qualifications:

• Fluent in Portuguese; Spanish desirable
• Minimum 15 years research experience in forest management and silviculture with a principal focus in tropical forests
• Author of peer-reviewed articles and lectures in this area
• Experience teaching graduate level forest management and silviculture; experience developing and conducting scientific research in this area

Responsibilities:

• Give classes on tropical forest management and silviculture
• Explain and demonstrate in a practical way the benefits of FM-LIL principles and practices from a silvicultural perspective
• Explain the use and theory of various silvicultural systems, the application of silvicultural treatments, and specific silvicultural adaptations for Amazon forests
• Facilitate discussion of the rationale for as well as advantages and implications of various silvicultural treatments (e.g. vine cutting, poising-girdling, etc)
• Prepare training materials on these subjects for training manual
Function: Consultant
Title: Ecology

Qualifications:
- Fluent in Portuguese; Spanish desirable
- Minimum 5 years ecology research experience with a principal focus in tropical forest ecology
- Author of peer-reviewed articles and various lectures on this subject
- Experience teaching graduate level ecology; experience developing and conducting scientific research

Responsibilities:
- Give classes on Amazon forest ecology including background on goods and services of forest (e.g. nutrient cycling, mitigation of climate, watershed protection, habitat, wood and non-wood products, etc.)
- Explain ecological foundation of forest management including background on tree growth and regeneration, pollination, seed dispersal, and the role of pollinators and seed dispersal agents
- Facilitate discussions on the ecological effects of logging with emphasis on the difference between FM-LIL and conventional logging
- Prepare bibliography of key ecology resources for inclusion in training material
- Prepare training materials on forest ecology and the ecological impacts of logging for inclusion in the training material
Curricula Vitae of Key Staff

General Director

Johan Cornelis Zweede

Profession: Tropical Forester

Function: Director FFT – Tropical Forestry Consultant

Birth date: 01-07-1940

CIC: 028 999 222 20

Ident. number: W 590371 SERDPMAF

Schooling: Graduate in Biolog, Syracuse University, Syracuse, N. Y.

Graduate in Tropical Forestry, New York State University, N. Y.

Nationality: United States of America

Native: Indonesia

PROFESSIONAL EXPERIENCE:

1994 – to present: Director of Fundação Floresta Tropical, Belém - PA

• Responsible for coordinating and implementing reduce impact logging demonstration models in upland forests in Brazilian Amazonia;

• Development of training programs and human capacity building for operational activities involved in forest management and reduced impact logging;

• Development and coordination of Forest management research both within the organization and with partnerships.

• Overall supervision of employees and logistics control of forest management and reduced impact logging projects – FM-RIL;

• Presentation of seminars on FM-RIL practices in Brazil and abroad;

• Implementation and development of forest projects and sustainable management programs in the tropics;

• Responsible for proposals and reporting to Board of Directors and Donors.

1989 – 1996 Consultant – Various institutions Belém – PA

• Auditing and Leading certification teams (Forest Certification), for FSC through “Rainforest Alliance & Scientific Certification Systems”, of native and plantation forests in Brazil and Latin America

• Researcher of EMBRAPA / CPATU, in the area of forest management and silviculture

• Coordinated and organized with investigators, industry.ists in seminars on LIL harvesting.

• Presentation of lectures on forest management and silviculture, natural regeneration


• Director of Production


• Director of Forest Operations


• General Manager - Forest Management
Forest Operations Manager

André da Silva Dias

**Profession:** Forester

**Function:** Manager / Coordinator of Forest Management Model Project and FM/RIL Courses

**Schooling:**
- Graduate Forestry Engineering School (B.Sc.) – University of Sao Paulo
- Master of Science (M.Sc.) at CATIE, Costa Rica

**Nationality:** Brazilian

**Native:** São Paulo

**Birth date:** 07-24-1971

**PROFESSIONAL EXPERIENCE:**

2002 F.F.T. Belém - PA
- Manager / Coordinator of FFT projects in forest management, training and extension
- Coordinator of courses and training of forest management activities and Reduced Impact Logging (RIL)
- Supervisor on operational activities of forest management and RIL (forest inventory, vine cutting, mapping, forest equipment, planning and construction of skid trail, skidding, silvicultural treatment, forest monitoring and forest protection)
- Coordination and supervision of management research and RIL
- Presentation in seminars on environmental education, sustainable forest management and harvesting

1995 – 1999 Saude e Alegria NGO Santarem - PA
- Coordinator of Environmental and Forest Management
- extensive experience in project management and community forestry.

**COURSES:**

2002 FSC / IMAFLORA Manaus - AM
- Forestry Certification

2002
- Site visits to Specific Forest Management visitations, Acre, Amazonas, and Mato Grosso.
Senior Forester

Raniery Vale Neri Branco

Profession: Forester  
Function: Forester Operations Supervisor  
Birth date: 06-17-1975

Schooling: Graduate Forestry Eng. School (B.Sc.) -  
Faculty of Agrarian Sciences of Pará

Nationality: Brazilian  
Native: Pará

PROFESSIONAL EXPERIENCE:

2000  
F.F.T. Belém – PA  
- Field supervisor of forest management and reduced impact logging techniques for FFT courses.  
- Field coordinator of Reduced Impact Logging (RIL) activities, including collection and analysis data, as well as planning of harvesting and execution of post-harvesting activities (100% Inventory, vine cutting, mapping, forest equipment, planning and construction of forest infrastructure, directional felling planning of skid trail, skidding, silvicultural treatments and forest protection)  
- Instructor in practical training in planning of operational activities of forest management and RIL  
- Participated in the elaboration and development of methodologies of RIL in different forest types in the Brazilian Amazon  
- Coordination of the execution of safety programs in situations of risk in RIL  
- Presentation in seminars on environmental education, sustainable forest management and harvesting  
- Supervision and administration of physical bases (camp), logistic and personnel in forest operations in the Brazilian Amazon  
- Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL

COURSES:

2002  
IMAZON Belém - PA  
- Training on Geographic Information System (GIS), with focus on the utilization of the software Arc View for mapping the harvesting activities of forest management

2002  
Fluency Cursos Belém - PA  
- English Course: Basic

2002  
Training Center STHIL Belém - PA  
- Recycle on maintenance and new technology and operations, of heavy equipment

2001  
FIEPA/SENAI Belém - PA  
- Methodology in environmental impact evaluation short course

2001  
SOTREQ / Caterpillar Belém - PA  
- Training in operation of heavy equipment utilized in forest harvesting operations

2000  
Lider informática Belém - PA  
Information system course: Microsoft Excel, Microsoft Access and Microsoft Office
Technician I

Celso dos Santos Couto

**Profession:** Forester Technician
**Function:** Harvest Planning specialist
**Birth date:** 07-28-1971

**Schooling:** Federal Agro-technological School of Castanhal - Pará
**Nationality:** Brazilian
**Native:** Pará

**PROFESSIONAL EXPERIENCE:**
1995 F.F.T. Belém - PA
- Coordinator on planning of operational activities in Reduced Impact Logging (RIL). General knowledge of pre-harvesting and post-harvest activities, such as: Block layout, definition and line cutting, 100% Inventory and Vine cutting, Installation of Permanent Plots, Continuous Inventory on Permanent Plots, Data processing, Design, drawing & map making (Base map, Per-harvesting map, Harvesting map), Harvest damage evaluation, Harvest waste evaluation, Silvicultural treatments
- Instructor of practical training in planning of operational activities of forest management and RIL
- Experience in developing methodology of RIL in different types of forest of the Brazilian Amazon, with installation of practical models of sustainable forest management
- Manager of operations on risks in forest harvesting, conducting safety programs
- Evaluation of operational activities of forest management in industries of wood with goal of training and offer qualified labor in RIL
- On site study of traditional harvesting practices in the lower Amazon region by small producers and communities.
- 1996 - Technical visits to other institutions and companies that develop forest management activities in the Amazon, aiming the interchange of knowledge and techniques in the Amazon
- 1995 - Participation in seminars, presentations and technical meetings to discuss forest management and RIL in the Amazon

**COURSES:**

2002 IMAZON Belém - Para
- GIS basic operations

1999 Government Fire and Rescue Organization Paragominas - PA
- Training of first aid on forest activities

1998 SOTREQ / Caterpillar Belém - PA
- Training in operation of heavy equipment utilized in forest harvesting operations

1998 Líder Informática Belém - Pará
- Information system course: Microsoft Excel, Microsoft Access and Microsoft Office
Technician I

César de Souza Pinheiro

**Profession:** Forester Technician  
**Function:** Pre-Harvest Planning and Inventory specialist  
**Schooling:** Federal Agro-technological School of Castanhal - Pará  
**Nationality:** Brazilian  
**Native:** Pará  
**Birth date:** 04-28-1972

**PROFESSIONAL EXPERIENCE:**

1995  
F.F.T.  
Belém - PA  
- Coordinator on pre-harvesting operations of forest management activities in Reduced Impact Harvesting (RIL). General knowledgement of 100% Inventory and Vine cutting, Installation of Permanent Plots, Continuous Inventory on Permanent Plots, Data processing, Design, drawing & map making (Base map, Per-harvesting map, Harvesting map), Harvest damage evaluation, Harvest waste evaluation, Silvicultural treatments  
- Ministration of practical training in planning of operational activities of forest management and RIL  
- Coordinator of field groups, responsible for forest inventory, vine cutting and data processing  
- Experience in developing methodology of RIL in different types of forest of the Brazilian Amazon, with installation of practical models of sustainable forest management  
- Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL  
- 1998 - Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL  
- 1995 - Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL

**COURSES:**

2002  
FSC / IMAFLORA  
Manaus - AM  
- Forest Certification  
2002  
Fluency Cursos  
Belém - PA  
- English Course  
2002  
IMAZON  
Belém - PA  
- Training on Geographic Information System (GIS), with focus on software Arc View for mapping  
2000  
Government Fire and Rescue Organization  
Paragominas - PA  
- Training of first aid on forest activities  
1999  
SOTREQ / Caterpillar  
Belém - PA  
- Training in operation of heavy equipment utilized in forest management  
1999  
Museu Goeldi – Embrapa  
Belem – PA  
Dendrology and field tree identification instruction  
1998  
Lider Informática  
Belém - Pará  
- Information system course: Microsoft Excel, Microsoft Access and Microsoft Office
Technician I

Marlei Monteiro Nogueira

Profession: Forester Technician
Function: Harvesting and Forest Equipment Instructor
Birth date: 11-06-1974

Schooling: Federal Agro-technological School of Castanhal - Pará
Nationality: Brazilian
Native: Pará

PROFESSIONAL EXPERIENCE:
1995 F.F.T. Belem - PA
- Coordinator on harvesting operations of forest management activities in Reduced Impact Harvesting (RIL).
- General knowledge of 100% Inventory and Vine cutting, Installation of Permanent Plots, Continuous Inventory on Permanent Plots, Data processing, Design, drawing & map making (Base map, Per-harvesting map, Harvesting map), Harvest damage evaluation, Harvest waste evaluation, Silvicultural treatments
- Ministration of practical training in planning of operational activities of forest management and RIL
- Experience in developing methodology of RIL in different types of forest of the Brazilian Amazon, with installation of practical models of sustainable forest management
- Participate in activities of RIL, with focus in operations of heavy equipment, planning and supervising better utilization of those equipment of forest activities
- Coordinate activities on mapping of forest operations (logistic mapping of tree distribution, infrastructure, planning of harvesting and post-harvesting activities
- Experience in developing models of RIL in different forest types in the Brazilian Amazon, installing practical models of sustainable forest management
- Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL
- Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL
- Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL

COURSES:
2002 IMAZON Belém - PA
- Training on Geographic Information System (GIS), with focus on software Arc View for mapping

2002 Fluency Cursos Belém - PA
- English Course: Basic

2002 Training Center STHIL Belém - PA
- Recycle on maintenance and new technology and operations, of heavy equipment

2001 Training Center STHIL São Leopoldo - RS
- Specialized chain saw maintenance course
Technician II

André Maria Oliveira Miranda

Profession: Forester Technician
Function: Pre-Harvest Planning and Inventory specialist

Schooling: Juscelino Kubitschek de Oliveira* State Agro-industrial School, in Marituba-Pará

Birth date: 10-13-1978
Identification number: 3498966 Segup/Pa

Nationality: Brazilian
Native: Pará

PROFESSIONAL EXPERIENCE:

2000 F.F.T. Belem - PA
• Ministration of practical training in planning of operational activities of forest management
• Coordinator of field groups, responsible for forest inventory
• Experience in developing methodology in different types of forest of the Brazilian Amazon
• Evaluation of operational activities of forest management in wood industries with goal of training and offer qualified labor in RIL

COURSES:

2002 IMAZON Belém - PA
• Training on Geographic Information System (GIS), with focus on the utilization of the software Arc View for mapping the harvesting activities of forest management

2002 Fluency Cursos Belém - PA
• English Course

2001 Lider Informática Belém - Pará
Information system course: Microsoft Excel, Microsoft Access and Microsoft Office

Technician designer & graphics specialist

Emerson Carlos Boulhosa

Profession: Designer
Function: Computer Technician Support
Birth date: 11-25-1972

Schooling: Grade school completed
Nationality: Brazilian
Native: Pará

PROFESSIONAL EXPERIENCE:

1998 - F.F.T.
• Experience in TV Broadcasting
• Specialized Computer graphic for TV / animation
• Develop graphics for the manuals of TFF

COURSES

2002 - TECNOINF
• Computer Technician Supply
Belém - PA

2002 - Fluency Cursos
• English Course
Belém – PA

1998 - Young Informática
• 3D Studio R4
Niterói - RJ
Operator Instructor I

Antônio José de Lima

<table>
<thead>
<tr>
<th>Profession:</th>
<th>Senior skidder operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function:</td>
<td>Skidder operations instructor</td>
</tr>
<tr>
<td>Birth date:</td>
<td>19-03-1960</td>
</tr>
<tr>
<td>Schooling:</td>
<td>Grade school completed</td>
</tr>
<tr>
<td>Nationality:</td>
<td>Brazilian</td>
</tr>
<tr>
<td>Native:</td>
<td>Maranhão</td>
</tr>
</tbody>
</table>

PROFESSIONAL EXPERIENCE:

1995  
- F.F.T. 
  Belém - PA
  - Experience in Forest Management with emphasis on reduced impact Logginging (RIL)
  - Specialized in planning and layout of skid trails
  - Testing of skidding systems and intensities
  - Instructor on heavy equipment operation and safety

1993  
- IMAZON 
  Paragominas - PA
  - On the pilot model in Paragominas as tractor operator (Caterpillar model – 518C)
  - Testing of skidding systems
  - Construction of principal, secondary skid trails and log decks
  - Monitoring on the behavior of the equipment in the forest
  - Maintenance of heavy equipment
  - Training of operation and maintenance with orientation of instructor of SOTREQ

1984 – 1990  
- Jari Florestal Ltda. 
  Monte Dourado – PA
  - Skidder Operator

1981 – 1983  
- Sasi - Jari Ltda. 
  Monte Dourado – PA
  - Helper of Skidder Operator

COURSES

2002  
- Government Fire and Rescue Organization 
  Paragominas - PA
  - Training of first aid on forest activities

2000  
- SOTREQ / CAT 
  Belém - PA
  - Annual training on operation and maintenance of heavy equipment

1999  
- F.F.T. 
  Belém - PA
  - Course on Forest Management and RIL practices
  - Recycle on maintenance and new technology and operations, of heavy equipment
  - First aid training for forest operations

1996  
- Caterpillar 
  Belém - 80
  - Training in heavy equipments operation and maintainance
Operator Instructor I

Manoel Barbosa da Conceição

**Profession:** Senior tractor operator

**Function:** Forest infrastructure layout and construction instructor

**Birth date:** 01-11-1947

**Schooling:** Grade school completed

**Nationality:** Brazilian

**Native:** Pará

**PROFESSIONAL EXPERIENCE:**

- **1995** F.F.T. Belém - PA
  - Experience in Forest Management with emphasis on reduced impact logging (RIL)
  - Specialized in the construction of principal and secondary roads and log decks for harvesting activities
  - Instructor on F. M. operations for more than three years
  - Instructor on heavy equipment and safety

- **1993** IMAZON Paragominas - PA
  - On the pilot model in Paragominas as tractor operator (Caterpillar model D5-C)
  - Construction of principal, secondary roads and log decks
  - Infrastructure systems development for reduced impact logging
  - Maintenance of machines
  - Training of operation and maintenance with orientation of instructor of SOTREQ

- **1992 - 1993** CN Road Construction PA
  - Operation on heavy equipment

  - Operation on heavy equipment
  - Construction of principal, secondary skid trails, log decks and general infrastructure

**COURSES:**

- **2001** Government Fire and Rescue Organization Paragominas - PA
  - Training of first aid on forest activities

- **1999** SOTREQ / CAT PA
  - Annual training on operation and maintenance of tractor D6-SR and Loader 924F
  - Specialized training on operation of Loader 938F, Skidder 525 and Tractor D6E – SR
Operator Instructor I

Valderez Vieira

**Profession:** Senior Sawyer  
**Function:** Sawyer Instructor  
**Birth date:** 09-12-1953  
**Schooling:** Grade School completed  
**Nationality:** Brazilian  
**Native:** Ceara

**PROFESSIONAL EXPERIENCE:**

1997  
F.F.T.  
Belém – PA  
- Senior chainsaw and chainsaw maintenance Instructor for FFT FM/RIL courses  
- Participation in Sustainable Forest Management activities, with focus on chainsaw operations  
- Operation and maintenance of chainsaw  
- Operation of safety on chainsaw  
- Directional felling  
- Instructor of operational practices of chainsaw and safety  
- Improvement and development of new techniques of directional felling

1976 - 1997  
JARI Celulose S.A.  
Monte Dourado - PA  
- Senior chainsaw operator  
- Maintenance and operations of chainsaw  
- Specialization in chain filing and maintenance of chainsaws and directional felling  
- Productivity and quality programs  
- Safety programs

**COURSES:**

2000  
Training Center STHIL  
São Leopoldo - RS  
- Recycle course in chain saw sharpening, filing and operations  
- Mechanic and maintenance of chainsaw  
- Recycle course and annual training on chainsaw operations

2000  
Government Fire and Rescue Organization  
Paragominas - PA  
- Training of first aid on forest activities

1999  
F.F.T.  
PA  
- Course on Forest Management and Reduced Impact Logging

1998  
JARI Celulose S.A.  
Monte Dourado – PA  
- General workers safety course  
- Chainsaw operations, maintenance and directional felling courses

1998  
JARI Celulose S.A.  
Monte Dourado - PA  
- Course in directional felling of natural forest trees  
- Course in felling principles and techniques
Operator Instructor II

Arivaldo Almeida de Souza

Profession: Senior Sawyer
Function: Sawyer operations instructor
Birth date: 03-21-1979

Schooling: Grade School completed
Nationality: Brazilian
Native: Para

PROFESSIONAL EXPERIENCE:
2001 F.F.T. Belém - PA
• Participation in Sustainable Forest Management activities, with focus on chainsaw operations in reduced impact Logginging
• Operation and maintenance of chainsaw
• Operation of safety on chainsaw
• Directional felling
• Instructor in practices of chainsaw operations and safety
• Improvement and development of new techniques of directional felling

1997 – 2001 Cikel Brasil Verde S. A. Paragominas – PA
• Assistant of chainsaw
• Operator of chainsaw

COURSES:
2002 Government Fire and Rescue Organization Paragominas - PA
• Training of first aid in forest activities

2001 STHIL São Leopoldo - RS
• Course in chainsaw sharpening and filing of chainsaw
• Maintenance of chainsaw
• Recycle courses and annual training on chainsaw operations

2001 F.F.T. Ulianópolis - PA
• Course on Forest Management and Reduced Impact Logging

2001 F.F.T. Belém - PA
• Course on Forest Management and RIL practices
Recycle on maintenance and new technology of heavy equipment
Operator Instructor II

Gilmar Souza dos Santos

**Profession:** Forester Technician

**Function:** Heavy Equipment Operator

**Birth date:** 04-04-1960

**CIC:** 123039762-00

**Identification number:** 4898586 Segup/Pa

**Schooling:** Grade school completed

**Nationality:** Brazilian

**Native:** Pará

PROFESSIONAL EXPERIENCE:

2002 F.F.T. Belem - PA

- Operator of heavy equipment utilized in forest harvesting operations in Reduced Impact Harvesting
- Instructor of practical training in heavy equipment.
- Experience in developing methodology in different types of equipment

1991-2001 JARI Celulose S.A. Monte Dourado-PA

- Construction of principal, secondary roads and log decks
- Infrastructure systems development for reduced impact Logging
- Maintenance of machines

COURSES:

2002 SOTREQ / Caterpillar Belém - PA

- Training in operation of heavy equipment utilized in forest harvesting operations
Raimundo Sanches Amaral

**Profession:** Administrator

**Title:** Manager of Administration

**Birth date:** 03/14/1944

**Schooling:**
- First State Grand School of Vereador Gonçalo Duarte
- Technical School for Sciences and Literature

**Nationality:** Brazilian

**Native:** Pará

**PROFESSIONAL EXPERIENCE:**

1994 - F.F.T. Belém - PA
- Administrative Manager for the Tropical Forest Foundation
- Coordinate the administrative services to the office
- Acquisition of all necessary materials, supplies and equipment
- Maintain direct communication with field crews
- Supervise project accounting

1990 – 1993 R.S. Amaral Comercial and Representatives Ltd Brazil
- Commercial representative
- Parts manufacturing supervision
- Vehicle parts and equipment sales

1969 – 1989 Export Firm of Rosewood oil Brazil
- Producer and Exporter of oil of Rosewood oil
- Contact with buyers from of USA, France and Japan
- Responsible for the administration of 100 workers
- Responsible for the acquisition of supply and equipment of maintenance

1964 – 1968 ACREANA S/A Acre
- Supervisor of the latex industry and product derived from plants in Rio Branco – Acre, Brazil
- Responsible for the production and processing of raw materials (rubber) to be sold to Goodyear of Brazil
- Administration and supervision of 56 workers
- Coordinator of the quality control of the factory

**COURSES:**

1998 Líder Informática Belém – PA
Information system course: Microsoft Excel, Microsoft Access and Microsoft Office
International Promotional Expert

O. Keister Evans

Profession: Executive Director
Function: International Coordinator and Course Promoter
Birth date: 10/05/1939
CIC: N/A
Identification number: N/A

Schooling: M. Sc. Agronomy at the Virginia Polytechnic Institute
B. Sc. Forestry at the Virginia Polytechnic Institute

Nationality: North American
Native: Virginia, USA

PROFESSIONAL EXPERIENCE:

1990 - T.F.F. Alexandria, Va. USA
• Executive Director in Alexandria, Virginia
• Developing together with Project Director and Coordinator course promotional materials
• Advising officials in relevant government agencies, universities, and NGO’s in LAC countries in training opportunity; requesting cooperation and assistance in advertising and promoting courses
• Organizing and running international events
• Supervision on production (including design, translation and printing) and distribution of promotional material
• Supervision on development of informational web page describing the courses
• Supervision on development and distribution of application material
• Establishment and maintenance of database of all relevant contacts for courses

1997 - World Bank CEO Forum
• Colleague status

• Executive Vice President
• Legislative/Lobbying – Founding member of Joint Industries Group (JIG), an international trade coalition which became a major legislative coalition in Washington

• Executive Director

1961 – 1964 Virginia Agricultural Extension Service Virginia
• Agricultural Extension Agent for the Virginia Polytechnic Institute and State University
Annex C – Project Organization Chart

ITTO

INDEPENDENT AUDITOR
IBAMA BRAZIL
ABC BRAZIL
PNF / MMA

INSTITUTIONAL PARTNERSHIPS
- EMBRAPA
- IMAZON
- MPEG
- CIFOR

SECTORIAL PARTNERSHIPS

FFT
Executing agency

STEERING COMMITTEE
- FFT
- IBAMA
- PNF / MMA
- ABC
- ITTO
- TAC
- INDUSTRY

TECHNICAL ADVISORY COMMITTEE
- Natalino Silva (President)
- Evaristo Terezo (Industry)
- Elizabeth van den Berg (MPEG)
- Paulo Contente (IBAMA)
- Nilma Sarmento (IBAMA)
- Syglea Lopes (Research Env. Law)
- Adalberto Verissimo (IMAZON)

SECTORS
- Industry
- University
- Technical School
- NGO's
- Communities
- Government Of Brazil
## Annex D – Number of Courses and Trainees

### Table 1. Proposed Number of courses and trainees by year

<table>
<thead>
<tr>
<th>Course</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of courses</td>
<td># Trainees by course</td>
</tr>
<tr>
<td>TD- Decision maker</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>GM- Forest manag. University level</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>MF- Forest manag. Technical level</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>TC- Felling techniques</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>TP- Pre harvest techniques</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>TA- Audit techniques</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>IE- Off site RIL courses</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>TCo- Off site Felling techniques</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total # courses</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total trainees -on site</strong></td>
<td><strong>150</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total trainees -off site</strong></td>
<td><strong>50</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total trainees per year</strong></td>
<td><strong>200</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### PERSONNEL
- Director
- Administrator
- Forest-Trainees
- Forest Technical-Trainees
- Sawyer-Trainees
- Machine Operator-Trainees

#### ACTIVITIES
- Project Establishment
- Demonstrate Benefits of Management
- Research Support
- Difusion of Management Techniques (On-site Courses, Seminars, Videos and Technical Workshops, etc.)
| Month    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| June     |   | TC|   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| June     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| June     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| July     |   | TD|   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| July     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| August   |   | TA|   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| August   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| September|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| September|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| October  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| October  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| October  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| November |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| November |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| December |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| December |   | TD|   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
Annex E – Activity and Subject Hours for each Course

<table>
<thead>
<tr>
<th>Activities</th>
<th>Courses/subject hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TD</td>
</tr>
<tr>
<td><strong>Pre Harvest</strong></td>
<td></td>
</tr>
<tr>
<td>Block layout, definition and line cutting</td>
<td>2</td>
</tr>
<tr>
<td>100% Inventory and vine cutting</td>
<td>2</td>
</tr>
<tr>
<td>Continuous forest inventory</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to data processing</td>
<td>2</td>
</tr>
<tr>
<td>GIS for FM planning and map making</td>
<td>2</td>
</tr>
<tr>
<td>Forest infrastructure planning and construction (R&amp;L)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Harvest Activities</strong></td>
<td></td>
</tr>
<tr>
<td>Tree marking</td>
<td>1</td>
</tr>
<tr>
<td>Directional felling and cutting techniques</td>
<td>4</td>
</tr>
<tr>
<td>Skid trail planning, mapping, &amp; layout</td>
<td>2</td>
</tr>
<tr>
<td>Log skidding</td>
<td>1</td>
</tr>
<tr>
<td>Log deck operations (grading and scaling)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Pos Harvest activities</strong></td>
<td></td>
</tr>
<tr>
<td>Harvest damage and waste evaluation</td>
<td>2</td>
</tr>
<tr>
<td>Post harvest silvicultural treatments</td>
<td>2</td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td>2</td>
</tr>
<tr>
<td><strong>Complementary activities</strong></td>
<td></td>
</tr>
<tr>
<td>Worker safety for forestry activities</td>
<td>4</td>
</tr>
<tr>
<td>First-aid training for forestry activities</td>
<td>8</td>
</tr>
<tr>
<td>Heavy equipment operation</td>
<td>2</td>
</tr>
<tr>
<td>Chainsaw safety</td>
<td>2</td>
</tr>
<tr>
<td>Chainsaw maintenance and use</td>
<td>3</td>
</tr>
<tr>
<td>Traditional harvesting methods</td>
<td>2</td>
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## Annex F – Training Demand 2002

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**TOTAL 557**

**LEGEND**

- **TO**: Operational Techniques
- **TCI**: Infrastructure techniques
- **MF**: Forest Management for agro-technical schools
- **GM**: Forest Management for forestry engineers
- **TC**: Directional Felling Techniques
- **TD**: Decision Makers
- **TP**: Pre Harvesting Techniques
- **Tx**: Application Fees
Annex G – Letters of Support

a. Terms of Agreement Cikel and FFT

TERMOS DE COMPROMISSO

Pelo presente Termo, estamos nos Comprometendo, pelo prazo de vinte anos que a área de 1.000ha na Fazenda Rio Capim de propriedade do Grupo Cikel, cedida para a FFT - Fundação Floresta Tropical com o objetivo de pesquisas e treinamento no Manejo de Baixo Impacto, garantindo disponibilidade e integridade para os fins especificados.

Belém, 28 de Outubro de 1999

CIKEL COMÉRCIO E INDÚSTRIA KEILA S/A
Manoel Pereira Dias
b. Letter of Support from CIFOR

DECLARAÇÃO

O Centro Para Pesquisa Florestal Internacional - CIFOR, sediado em Bogor, Indonésia, foi estabelecido em 1993 como parte integrante do Grupo Consultivo de Pesquisa Agrícola Internacional (CGIAR) em resposta às preocupações globais com as conseqüências sociais, ambientais e econômicas da perda e degradação de florestas.

No Brasil, o CIFOR vem desenvolvendo várias iniciativas para a promoção e adoção do bom manejo florestal na Amazônia Brasileira, tanto em florestas primárias como secundárias (vide anexo). A conjugação de esforços entre a FFT e o CIFOR tem sido fundamental no cumprimento deste desafio, como no caso dos quatro projetos que visam incentivar as práticas de manejo florestal sustentável em escala industrial (tabela 1).

Ademais podemos atestar que a FFT, a partir de seu programa de capacitação e treinamento e da sua experiência de mais de 7 anos na difusão do conhecimento gerado sobre Manejo Florestal e Exploração de Impacto reduzido (MF-EIR), vem formando profissionais aptos a aplicar técnicas de bom manejo florestal na região Amazônica, contribuindo de maneira direta para o alcance dos nossos objetivos.

César Sabogal M.
Coordenador Regional do CIFOR
### Table 1: Projects with focus on the promotion of sustainable forest management practices at the industrial-scale

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<th>Title of the project or activity</th>
<th>Main partners and collaborators</th>
<th>Funding</th>
<th>Budget (US$)</th>
<th>Period of execution</th>
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<td>- FFF</td>
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<td>750,000</td>
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<td>Development of a GEF-funded prototype for analysis and auditing of SFM projects</td>
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<td>- IBAMA</td>
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### Table 2: Projects with focus on the promotion of sustainable forest management for communities and small and medium farmers

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<td>Municipalidade of Moana</td>
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<td>Economic opportunities from non-timber forest products</td>
<td>CIFOR</td>
<td>USAID</td>
<td>[60,000]</td>
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<td>Mulheres da Mata</td>
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<td>Conservation of biodiversity to improve local incomes in the Brazilian Amazon</td>
<td>CIFOR</td>
<td>Overlook Foundation</td>
<td>[70,000]</td>
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<td>Diagnostic of silvicultural practices in the Brazilian Amazon</td>
<td>Embrapa (4 centers in the Amazon)</td>
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<td>University of Mato Grosso</td>
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### Escritório Regional do CIFOR
Embrapa Amazonas Oriental, Tel: Dr. Emilio Palhotta 34, CEP 66.085-100, Belém - PA, Brazil
**Table 3: Projects with focus on providing information and advice for public policies for the sustainable development of the Amazon based on the use of the forest resources**

<table>
<thead>
<tr>
<th>Title of the project or activity</th>
<th>Main partners and collaborators</th>
<th>Funding</th>
<th>Budget (US$)</th>
<th>Period of execution</th>
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<tbody>
<tr>
<td>Impact of the political-administrative decentralization on the use of forest resources in eight municipalities of the Brazilian Amazon</td>
<td>CIFOR, IPAM, FUNDEP, NOVO RIO</td>
<td>DFID</td>
<td>??</td>
<td>2001 – 2002</td>
</tr>
<tr>
<td>Infrastructure, regional development and livestock in the Brazilian Amazon</td>
<td>CIRAD, Embrapa, CIFOR, University of Natal, UFP, IMazon</td>
<td>CIRAD</td>
<td>??</td>
<td>2000 – 2003</td>
</tr>
<tr>
<td>Regional development, livestock and deforestation in Para State</td>
<td>CIFOR, IPAM, CIRAD, Embrapa, Clark University</td>
<td>CIRAD</td>
<td>??</td>
<td>2000 – 2003</td>
</tr>
</tbody>
</table>
Annex H – Location map of training area
Annex I – Letter of commitment from CIKEL, authorizing use of property

CIKEL
Cikel Brasil Verde S/A


Sr. Johan C. Zweede
Executive Director
Fundação Florestal Tropical
Travessa 14 de Abril, 1464 – São Brás
Belém, Pará, Brazil

Dear Mr. Zweede,

In regards to the proposal (PD 206/03 F) which the Fundação Florestal Tropical submitted to the International Timber Trade Organization, which is to "develop human resources in sustainable forest management and reduced impact logging in the Brazilian Amazon", Cikel Brasil Verde S/A will provide counterpart support for the proposed training activities to the extent we have done during the past 7 years. This will include providing the land and forest resources at the Cauaxi and Rio Capim properties, for the years of 2003 through 2005 in order to carry out the proposed project.

Sincerely yours,

[Signature]
MANOEL PEREIRA DIAS
General Director
Cikel Brasil Verde S/A
Annex J – Proposal for Permanent Training Center

PROJECT PROPOSAL

INSTITUTO FLORESTA TROPICAL

Project Proposal 2002-2006

Prepared by

Fundação Floresta Tropical
1464, 14 de Abril, São Brás
Belém, Pará
Brazil

Revision 1.1

December, 2001
ACKNOWLEDGMENTS

We would like to state our special appreciation to the United States Agency for International Development (USAID) and the USDA Forest Service Office of International Programs whom, in 2001, financed this proposal and business plan for IFT, conceived by FFT and its technical advisory committee two years ago. The proposal and business plan was a collaborative effort by the Fundação Floresta Tropical and following consultants Dr. Frank Merry, Geoffrey Blate, and Dr. Jose Natalino Silva.

FFT would like to also thank Adalberto Verissimo, and Rodrigo Pereira Junior for their effort in preparing some of the data and reviewing the documents. In addition we appreciate the effort of both past and present FFT employees whose dedication, in establishing the FM-RIL models and training programs, was of utmost importance.

We would also like to acknowledge the widespread support that TFF-FFT has received over the last seven years for its forest management models and training program from the following institutions. Simply put, FFT could not have functioned without this support.

USAID - Brazil Office, Latin America and Caribbean Office, and Global Bureau.
USDA Forest Service – International Programs
ITTO – International Tropical Timber Organization
Caterpillar do Brasil Ltda.
Pro-Manejo – PP-G7 – KfW – GTZ
FORD Foundation – Brazil
TINKER-Foundation - USA
FCO – Foreign and Commonwealth Office – British Embassy
IBAMA – Brazilian Institute for the Environment and Natural Resources
David and Lucile Packard Foundation USA
Cikel Brasil Verde S.A.
John D and Catherine T. MacArthur Foundation – USA
SUMMIT Foundation USA
EMBRAPA - Brazilian Corporation for Agricultural Research
IITF – International Institute of Tropical Forestry
Alfred Jurzykowski Foundation USA
JARCEL Celulose S.A.
CIFOR – Center for International Forest Research
IMAazon – Institute of Man and Environment of Amazon
GETHAL Amazonas S.A.
IPAM – Institute of Environmental Research in the Amazon
Andreas STIHL Moto-Serras Ltda.
JURUÁ FLORESTAL Ltda.

Johan C. Zweede
Director – FFT
EXECUTIVE SUMMARY

This document constitutes a proposal to formally establish a forest management center, hereafter named Instituto Floresta Tropical (IFT). The IFT will provide the forest sector with the human resources it needs to conduct good forest management. In addition, IFT will continually research, develop, and teach new techniques in all aspects of forest management. The rationale for establishing IFT, rather than simply expanding Fundação Floresta Tropical’s current program is elucidated below. In addition, a business plan for IFT is attached. The business plan details the scope and cost of IFT’s proposed activities as well as the funding that will be required to bridge FFT’s program until IFT is formally established.

Sustainable development implies a balance between conservation, social, and economic objectives through the rational use of renewable resources. The forests of the Amazon are such a resource and present such an opportunity. The sustainable use of the region’s forests depends, however, on the application of appropriate systems and technologies by trained people. At present, the region’s human resources cannot adequately fulfill this criterion. The forest management training center proposed in this document will provide an institutionalized approach to resolving this problem.

The Amazon’s forest resources are indeed vast. The five million km² of the Brazilian Amazon alone are estimated to have a commercial timber stock of over 60 million m³ and several other Amazon Basin countries have similar resources. Thus, forestry constitutes an important land use and development option, and if practiced well, may become an integral part of conservation strategies for the Amazon. Until recently, however, the forest industry has had a negative association with conservation and has undertaken extractive rather than sustainable forestry practices. Although this situation is slowly changing, the opportunity to accelerate the transition from extractivism to forest management has never been better.

A revolution is underway in tropical forestry. Through the efforts of a wide variety of forest stakeholders – including government agencies, the scientific and conservation communities, educational institutions, international donors, and the private sector – Amazon forests are no longer viewed as an impediment to economic development but rather the source. A growing number of stakeholders are learning about forest management (FM). What they hear is that although no single system exists for managing the wide diversity of Amazon forests for timber production, minimizing harvesting impacts is a prerequisite for sustained yields nearly everywhere across the Basin. With this point in mind, several companies and communities are starting to implement reduced impact logging (RIL) practices, and a growing number want to certify their operations. Unfortunately, however, knowledge about FM-RIL is not universal and although many producers want to improve their management practices, most lack the capacity to do so.

Today, perhaps the greatest barrier facing the Amazon forest sector is the lack of trained and qualified people to implement FM-RIL. The sheer size and diversity of the area, complex array of types and sizes of producers, and the need to target all levels and all stakeholders has made the spread of knowledge about FM-RIL a complicated task. Nevertheless, several successful programs have begun to tackle this problem. One of these is the FM-RIL program run by the Fundação Floresta Tropical (FFT).

The FFT is the Brazilian subsidiary of the Tropical Forest Foundation, a U.S.-based non-governmental organization. FFT’s principal goal is to accelerate the adoption of FM-RIL practices by all types of producers in the Brazilian Amazon. To achieve this goal, FFT involves a variety of stakeholders in a program that integrates demonstration, training and practical research.

FFT’s training program, in particular, is unique because it embraces all facets of forest management and production from the basic labor tasks to the oversight of an integrated forestry
operation and from small individual or community operations to large-scale industrial production. The training consists of practical, on-site short courses tailored to different target groups (e.g., from sawyers and operators to technicians and foresters, and from land owners to community leaders and decision makers).

FFT’s training program has helped catalyze a strong and burgeoning interest in FM-RIL across the Brazilian Amazon. In the last five years, the number of trainees—foresters, trainers, technicians, sawyers, decision-makers, and other people in the forestry sector—graduating annually from the FFT program increased dramatically (from less than 10 to nearly 400). Today, the demand for training, technical assistance, and information exceeds FFT’s capacity.

The FFT program, though successful to date, has been dependent on annual grants. This dependence has injected an unacceptable level of uncertainty into the program. The best option—based on consensus from numerous stakeholder meetings—for meeting the growing demand for FM-RIL training and simultaneously removing the tenuous nature of the FFT program is to create a permanent forest management training center for the Amazon.

The IFT will be a Brazilian NGO that works in concert with a variety of partners including key government agencies, other NGOs, and educational and research institutions to provide training, research, and extension in forest management for all countries in the Amazon. The training program, which will consist of on- and off-site courses as well as internships, will target all levels of forestry professionals (from operators to decision-makers) from all sectors (industry, communities, government, NGOs, etc.). Extension activities, such as seminars, workshops and lectures, will raise awareness about the benefits of FM-RIL. In the process, extension will build demand for training and provide feedback critical to the development of better FM-RIL systems.

IFT will strive to develop FM systems that meet the needs of all types of forestry operations including small producers, communities, and mid-size and large companies. Initially the focus will be on FM-RIL, but IFT will quickly diversify its services according to the changing needs and opportunities of the region. In particular, IFT will expand its training, research, and extension activities to address industrial aspects of forestry such as value added processing and wood marketing. Likewise, IFT will eventually broaden its scope to include non-timber forest products and extractive reserves. Ultimately, IFT will aim to provide a variety of services pertaining to all aspects of forest management in the Amazon.

This diversification will require the active involvement of the partners mentioned above as well as the participation of a coalition of leaders representing a wide variety of stakeholders. To achieve this objective, IFT will have a Board of Directors comprising individuals from Federal and State governments, the private sector, environmental NGOs, and educational institutions. To ensure involvement of other countries in the region, IFT will strive to add representatives from key institutions in other Amazon Basin countries to its Board of Directors. This wide assortment of Directors will infuse IFT with the ideas and vision it needs to be successful.

A fundamental operating principle for IFT will be to achieve long-term financial stability. To become established, IFT will require financing from both national and international donors. During a five-year transition period, IFT will rely less on donor funding by generating revenues from course fees, research grants, and the sale of forest products. Despite the increasing reliance on IFT generated revenues, financial projections detailed in the Business Plan indicate that this income will not cover all of IFT’s costs. Indeed, even after its fourth year of operation, IFT will need about $400,000 because of investments in highly qualified trainers and support staff. Self-sustainability would be possible, however, with an endowment of about $5 million. With or without the endowment, IFT will forge partnerships with private and public institutions to help cover operational expenses and course costs.
The IFT will be established in 2002, begin operating in 2003, and grow to full capacity – training about 450 people per year – by 2006. Because IFT’s operations will only start in 2003, 2002 will be a transitional year during which FFT will continue its current program. Bridging FFT’s program will maintain interest in FM-RIL and ensure a smooth transition from FFT to IFT. The bridging program will extend from December 2001 until December 2002 and require about $582,000 in donor support, some of which is already committed.

In addition to bridging FFT’s FM-RIL program, several other key steps must be accomplished to successfully establishment IFT. The most critical step is to identify potential donors and sponsors who are willing to cover construction costs for the IFT training center – estimated at about $350,000 – and IFT’s development costs – ranging from about $200,000 to $400,000 per year – during its building phase. Other key steps include (a) obtaining a commitment for active participation by key agencies of the Brazilian government; (b) formalizing partnerships with other stakeholders; (c) finalizing selection of an appropriate site for the training center; and (d) legally establishing IFT as a Brazilian NGO. These last four activities must be completed by June 2002 for IFT to be operational in 2003.
INTRODUCTION

This document constitutes a proposal to formally establish a forest management center, hereafter named Instituto Floresta Tropical (IFT). The IFT will provide the forest sector with the human resources it needs to conduct good forest management. In addition, IFT will continually research, develop, and teach new techniques in all aspects of forest management. The rationale for establishing IFT, rather than simply expanding Fundação Floresta Tropical’s current program is elucidated below. In addition, a business plan for IFT is attached. The business plan details the scope and cost of IFT’s proposed activities as well as the funding that will be required to bridge FFT’s program until IFT is formally established.

1. PROBLEM DEFINITION

The Amazon Basin is the most diverse terrestrial region on earth. It is a storehouse of biodiversity and provides untold ecological services at local, regional, and global scales. This vast area, comprising 9 countries, is also home to millions of people, many of whom rely on the Amazon’s forests and other natural resources for their livelihoods.

The Brazilian Amazon alone encompasses 5 million Km² and harbors 85 percent of Brazil’s remaining natural forests. A recent study\textsuperscript{16} concluded that 83 percent of the remaining upland area of the Brazilian Amazon is suitable for forestry, with a commercial timber stock of about 60 billion cubic meters\textsuperscript{17}. The remaining Amazon Basin countries have smaller forest areas, but forestry plays an equally important role in land use throughout the region. Therefore, the scope of this proposal is international and includes the entire Basin area.

Considering its economic potential and the large area it affects, the forest sector –in conjunction with other land uses – should play an integral role in strategies to conserve the Amazon’s environmental resources. This potential will only be realized, however, if producers\textsuperscript{18} improve their practices. A growing number of producers have already begun to adopt better forest management practices. There are currently 278,000 ha of FSC certified\textsuperscript{19} forests in Brazil and 467,000 ha under certification review. Two years ago there were no FSC certified forests in Brazil. The area certified by FSC in Bolivia is even greater – nearly 1 million hectares. Most forests across the Amazon, however, are still being logged poorly and without regard to their long-term productivity and diversity.

In recognition of this problem, several Amazon countries have recently instituted new national policies supporting the continued development of the forest sector. The Brazilian government,

\begin{itemize}
\item \textsuperscript{16} Schneider et al. 2000. \textit{Amazônia Sustentável: limitantes e oportunidades para o desenvolvimento rural}, is available from the World Bank and IMAZON. According to this study, about 75 percent of the Brazilian Amazon remains forested and 15 percent has been cleared; an unknown proportion has been burned.
\item \textsuperscript{17} The forest sector of the Brazilian Amazon employs more than half a million people and generates annual revenues of about 2.2 billion dollars. About 90 percent of Brazil’s hardwood production comes from the Amazon and nearly all of that wood (~ 34 million m³ annually) is consumed domestically.
\item \textsuperscript{18} ‘Producers’ refers to people engaged in forest harvesting and milling activities.
\item \textsuperscript{19} Forest certification refers to third party verification that a company’s management practices are moving toward sustainability. The Forest Stewardship Council (FSC) accredits third party certifiers that use FSC criteria and indicators when they audit companies.
\end{itemize}
for example, wants to increase the area of well-managed forests and certified timber on world markets by 10 percent in the next few years. In addition, the government launched a new National Forest Program (PNF) in September 2000. The PNF aims to commit more than 200,000 Km$^2$ of Amazon forest to sustained timber production and to reforest 600 thousand ha per year. The PNF also calls for 500,000 Km$^2$ under concessions by the year 2010. If these targets are to be met, it will require trained personnel.

The new legislation and technical guidelines$^{20}$ are designed to promote sustainable use of the forest resource$^{21}$. Coupled with a growing acceptance of the need for improved management by the forest industry these national programs have created a shortage of qualified forestry practitioners in all countries in the region. This shortfall exists across all levels of practitioners – from woodsmen to forest managers – and among all stakeholders and producers. This lack of trained people constitutes one of the greatest obstacles to the adoption of good forest management across the Amazon. Indeed, it leaves the forest sector with limited capacity to comply with government regulations.

$^{20}$ IBAMA recently published general technical guidelines for the appropriate management of upland forests in the Brazilian Amazon.

$^{21}$ In 1995, EMBRAPA conducted a forest management survey in Paragominas, and found that no producers had effective management plans.
ADDRESSING THE PROBLEM

Forest Management and Reduced Impact Logging

Forest management (FM) is a broad concept the meaning of which depends on the objectives of the forest owner. The term forest management is not reserved exclusively for timber harvesting. It includes a broad array of forest-related activities including wildlife management, extractive reserves, and recreation. Across much of the Amazon, however, the principal FM objective is the sustainable production of wood products. In this case, forest managers need to consider the silvicultural requirements that will yield sustained timber volumes without compromising forest quality or composition over time.

Although any harvest will alter the forest to some extent, it is clear that minimizing physical impacts is an important first step in the goal of sustainable production. Reduced-impact logging (RIL) provides standards for mitigating the silvicultural activity that causes the greatest ecological impact. As such, RIL is considered a necessary step toward achieving sustainable forest management. RIL is an essential component of forest management where the principal objective is to provide a sustained yield of wood products while simultaneously maintaining native species diversity and key ecological processes and services.

Information about how to harvest trees with minimum damage exists. FM-RIL guidelines are available through ITTO, FAO, government agencies and NGOs. In addition, IMAZON, EMBRAPA, and the Fundação Floresta Tropical have field models in Brazil that demonstrate the improvements of FM-RIL practices over conventional logging. Specifically, FM-RIL methods reduce soil and canopy damage, protect future crop trees, and decrease waste by at least 50 percent. The Fundação Floresta Tropical has demonstrated how these ecological benefits can be obtained without an increase in costs. In addition to its ecological, silvicultural and financial benefits, FM-RIL also can potentially yield significant social benefits.

Social Benefits of FM-RIL Adoption

Adoption of FM-RIL practices changes the cost structure for producers in a socially beneficial way. Compared to conventional logging, FM-RIL increases the proportion of total costs (per cubic meter of timber harvested) spent on salaries and additional labor by about 31% (see Holmes et al. 2000). In conventional logging, that 31% is spent instead on equipment use and maintenance and fuel costs due to inefficiencies. In addition, FM-RIL operations use 64% more workers, many of whom possess special skills and training, than conventional logging operations. The dollars spent on wages stay in the Amazon region, which helps strengthen the local and regional economies. In conventional operations in contrast, the beneficiaries of producer expenses for equipment and fuel are in urban centers far from the Amazon or overseas.

Basic Tenets of RIL

- Proper planning
- Use of proper technology
- Pre-harvest inventory
- Vine cutting where needed
- Directional felling
- Proper skidding
- Trained workforce
- Qualified supervision

22 Activities away from the forest can also affect profitability and should be considered in management plans. For example, wood processing, wood marketing, and business development.
23 IMAZON is the Amazon Institute for People and the Environment; EMBRAPA is the Brazilian Corporation for Agricultural Research
Another socially beneficial aspect of FM-RIL compared to conventional logging and most other land uses is that FM-RIL requires a much larger range of skills. In conventional logging, a person is a laborer, a machine operator or a crew boss; seldom is there a defined career path that allows individuals to improve their status through experience and training. In FM-RIL in contrast, various career plans are feasible even for an unskilled laborer. For example, a person can grow from a field laborer, through the various ranks of qualified labor and then to equipment operator.

Aside from the obvious benefits to rural workers, an important consequence of the career paths and various skills associated with FM-RIL is that people trained in forestry will remain in rural areas rather than moving to cities where they might remain poor and jobless. In addition to potential careers, FM-RIL significantly upgrades attention to safety and health considerations, which is of critical importance if workers are to remain in rural settings. Given that most cities in Amazon Basin countries are already overpopulated and have limited capacity to absorb large influxes of rural laborers, this potential social benefit of FM-RIL should be considered in rural development policies.

Fundaçao Floresta Tropical – Catalyzing Interest in FM-RIL

In 1994, the Tropical Forest Foundation (TFF), a U.S. based non-profit organization dedicated to the achievement of sustainable forest management in the tropics, established its FM-RIL program in the Brazilian Amazon. Building on IMAZON’s research that demonstrated the technical feasibility and financial viability of FM-RIL, TFF’s objective was to accelerate the adoption of FM-RIL by producers across the Amazon. In 1995, TFF created a subsidiary, the Fundação Floresta Tropical (FFT), to implement this program. The FM-RIL program integrates practical training with demonstration models and research. It also involves a broad coalition of stakeholders including private landowners, industry, the conservation community, government agencies, and donors.

By 1997, FFT had established five FM-RIL model sites and trained a core crew of foresters, technicians, and operators. With funds from USAID and the World Bank, the FFT crew trained other forestry practitioners through on-site field courses. In 1998, FFT began a 2-year ITTO-funded project that eventually trained 138 foresters, trainers, and technicians from Brazil, Guyana, Suriname, Colombia, Ecuador, Peru, Venezuela, and Ghana. Currently, FFT is conducting more training courses with funds from ProManejo. These courses are due to end in November 2001.

To date, funding to pay for the costs incurred by FFT has been through the generous assistance of international donors. TFF and FFT have raised over 5 million dollars from international donors in a combined effort to improve forest management in the Brazilian Amazon.

The practical training offered by FFT, along with many other related efforts, has catalyzed a strong interest in forest management and created a demand for skilled forestry personnel at all

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25 ProManejo is a project of IBAMA that administers the promising initiatives project of the Pilot Program to Conserve the Brazilian Amazon, which receives its funding from G7 donors.
levels. In the past 5 years, FFT has received an increasing number of requests for qualified people from all sectors as well as from all types of producers (Figure 1).

![Stakeholders participating in FFT FM-RIL training program (1996-1999; percent of total people trained).](image)

FFT's program expanded during this period to try to address the human resources dilemma of the forest sector. Between 1996 and 2001 the number of trainees graduating from the FFT program increased dramatically (Figure 2). Importantly, all of the trainees found forestry work immediately.

![Participants in FFT's on- and off-site FM-RIL training courses and extension activities (1996-2000).](image)

As Figures 1 and 2 suggest, FFT has just begun to fulfill the large demand for trained forestry personnel in Brazil let alone other countries in the region. Unfortunately, the FFT courses have so far been the only source of trained field personnel in Brazil and the increasing demand is rapidly overwhelming FFT's current training capacity.

In recognition that the shortage of trained personnel will continue across the Amazon for several years to come, FFT and collaborators began discussing ways to solve this problem. In mid-1999, participants in a small workshop and various technical meetings agreed that training efforts must move beyond short-term projects with annual funding from international donors to a longer-term sustainable program. The idea of establishing a permanent forest management training center for the Amazon, dedicated to the hands-on training of FM-RIL, emerged from these discussions. FFT has continued to meet with various stakeholders including key...
government agencies, the business sector, environmental NGOs, traditional communities, and forestry researchers. The concept of the training center has received universal support.

INSTITUTO FLORESTA TROPICAL – OBJECTIVES AND RATIONALE

The idea of an Amazonian forestry training center is not new – FAO established a center in the mid-1950s – but the timing now is better. With stronger government policies and more vigilant enforcement, there is now greater regulatory support than ever before in the Amazon. These improvements in government regulations, along with a growing awareness of the multiple values of the region’s forests, have stimulated interest in FM-RIL across a wide spectrum of stakeholders in all the Amazon Basin countries. Training that targets landowners, community leaders, and decision-makers has become an important component of FFT’s current FM-RIL program.

Forest sector growth has already motivated several universities and technical schools to improve their curricula. IFT courses will complement these curricula and IFT will eventually become an integrated part of a broader program for foresters, technicians, and other practitioners who receive formal education at established institutions. IFT will provide a practical training component so foresters can apply FM-RIL. In addition, IFT will provide similar practical training for operators and other forest sector employees who do not necessarily receive higher education.

The IFT will be an independent Brazilian NGO that provides training, research, and extension in forestry for all countries in the Amazon. Although IFT will initially focus its efforts in Brazil, the goal is to quickly expand to include stakeholders from the other countries in the region. IFT will have a Board of Directors representing a range of stakeholders including Federal and State government, the private sector, environmental NGOs, and educational institutions. To ensure involvement of other countries in the region, IFT will strive to add representatives from key institutions in other Amazon Basin countries to the Board. In addition, it is hoped that TFF will provide a member to serve on the
Board to provide an international perspective. This wide assortment of Directors will infuse IFT with the ideas and vision it needs to be successful.

Establishing IFT will be a costly and time-consuming endeavor. It will, however, eventually be the most effective means of providing practical training to current and future generations of forestry practitioners in the Amazon. The rationale for undertaking this effort can be summarized with three main points—financial stability, funding flexibility, and increased training capacity.

First, the IFT will eventually become financially stable, with decreasing reliance on donor support and greater incidence of long-term partnerships with Brazilian educational funding agencies (see Figure 3 below; also see Business Plan for details). The current practice of teaching a series of courses that are funded on an annual basis is not sustainable. Furthermore, reliance on funds obtained through annually proposed projects is too tenuous.

The second reason for establishing IFT also relates to funding and flexibility. At present, FFT is a subsidiary of the Tropical Forest Foundation. Although this relationship has proved effective in raising funds, it also places certain limits on the kinds and sources of funds FFT may receive. For example, FFT may not receive funds directly from a variety of international donors that only finance Brazilian NGOs. In addition, FFT is not eligible for funding from various Brazilian governmental agencies that finance training programs such as the one envisioned for IFT. We anticipate that agencies like SENAI and SENAR26 will become formal partners and help subsidize training for numerous stakeholders. As a Brazilian NGO, IFT can make long-term partnerships with governmental agencies and other key institutions without losing its flexibility.

Third, the programmatic needs have grown far beyond FFT’s capacity. Simply stated, FFT needs support and direct involvement from existing institutions in Brazil and other Amazonian countries with expertise in different aspects of FM. To date, FFT has relied on informal arrangements with key individuals in various agencies. These individuals participate in FFT’s training courses but the association is informal, and expensive. In some cases, FFT must pay experts from other institutions as independent consultants. These formal partnerships will be especially important as IFT diversifies its services and broadens its target audience beyond stakeholders principally interested in management for timber production. In Brazil for example, the direct involvement of key partners such as IBAMA, EMBRAPA, FCAP, Museu Goeldi, IMAZON, IPAM27, and others, will help IFT improve forest management in the broadest sense far more effectively than through individual efforts or informal arrangements.

The IFT’s principal goal is to improve forest management across the Amazon with a view toward its long-term conservation. IFT will focus on building the capacity of people to adopt FM practices. IFT will also collaborate with partners to continually upgrade FM-RIL models and techniques through applied research. This research will be critical to help answer the questions that still exist related to all aspects of tropical forest management. Ultimately, this research, along with training and extension, will help accelerate the adoption of good FM across the Amazon. Finally, because of the tremendous diversity of the region, IFT will aim to involve a broad coalition of stakeholders many of whom will become active partners in IFT’s programs.

Although IFT will initially focus on accelerating the adoption of FM-RIL practices, it will eventually diversify its services and activities according to the changing needs and opportunities in the region. In particular, IFT will expand its capacity over time to provide training to stakeholders with disparate FM objectives. It is already clear that IFT will need to develop

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26 SENAI is the National Service for Industrial Apprenticeship and SENAR is the National Service for Rural Apprenticeship.
27 IPAM is the Instituto de Pesquisa Ambiental da Amazônia.
training modules that address especially value added processing and wood marketing. Similarly, IFT will need training modules pertinent to non-timber forest products and extractive reserves. Ultimately, IFT will aim to provide a variety of services pertaining to all aspects of forest management in the Amazon.

**IFT Establishment Strategy and Financial Requirements**

The IFT will be established and grow to full capacity over a five year period encompassing the years 2002 through 2006. Accomplishing this goal will require substantial effort and support from partners and donors. It will also hinge on achieving several interim objectives that together comprise the IFT establishment strategy.

The first step in this strategy, obtaining the Government of Brazil’s (GoB) official endorsement for IFT, is vital. The scale of training required to improve FM in the Amazon is so great that IFT will need to rely on partners. FFT will seek support and formal partnerships for the IFT with government agencies including MMA, IBAMA, SENAI, and SENAR. For IFT to be successful, these agencies must become active partners who directly participate in IFT’s activities. Obtaining support from IBAMA will be especially important because it regulates forestry activities and because it is keen to develop and improve the forest sector in the Amazon. IBAMA’s support will also be critical for overcoming obstacles pertaining to site selection.

As explained in detail in the Business Plan, selecting an adequate training site is critical for the success and financial independence of IFT. The site must have forest that is suitable for a wide variety of FM objectives including recreation, non-timber products, and wood production. The forest must be representative of the range of conditions present in other forests in the region and have sufficient volumes of commercial species. The IFT forest must also have adequate access-critical for logistics and for marketing. Because of the importance of site selection in the overall IFT establishment strategy, FFT will continue meeting with stakeholders to finalize this process during the first quarter of 2002. Stakeholder meetings will also help identify potential donors and formalize partnerships.

The preliminary estimates of operational costs for the IFT show a funding shortfall of approximately $425,000 in per year, based on values for 2006 (i.e. costs not covered by income from training, research, and timber sales). By this time IFT will be at full capacity, earning approximately $489,000 per year from timber sales, research income, and training revenue for a total estimated operational costs of $914,000.

It is anticipated that IFT will develop long term arrangements with industry and government agencies to underwrite the costs. Another option that IFT will explore is an endowment that will provide the Institute with an annual income.

<table>
<thead>
<tr>
<th>IFT Establishment Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Meet with key stakeholders to (1) Obtain GoB endorsement: (2) Finalize site selection (3) Identify donors &amp; sponsors and obtain support (4) Form operating partnerships</td>
</tr>
<tr>
<td>• Revise business plan based on final site selection</td>
</tr>
<tr>
<td>• Obtain funding for bridging FFT’s program in order to: (1) Maintain interest in FM-RIL (2) Support ongoing training demands (3) Maintain training cadre (2) Ensure smooth transition from FFT to IFT</td>
</tr>
<tr>
<td>• Legally establish IFT as a Brazilian NGO</td>
</tr>
<tr>
<td>• Construct IFT training center and facilities</td>
</tr>
<tr>
<td>• Initiate IFT activities with transfer of FFT personnel, capital assets and training material.</td>
</tr>
</tbody>
</table>
In addition, the costs presented here are preliminary estimates from the first Business Plan. These figures have given us a benchmark to begin the discussion of IFT financial requirements. Once the site has been selected and initial donor funding is secured, the Business Plan will be revised. The final Business Plan will pay careful attention to the costs and we fully expect that between the IFT revenue, additional income from long-term agreements, and a tighter budget, the IFT will be a financially independent organization.

Figure 3 and Table 1 show the preliminary estimates of IFT operational expenses, IFT revenue, donor or partner funding required, and donor funding that has already been secured (Table 1). For comparison, Figure 3 shows the actual FFT costs and income for the year 2001, in which the total operational cost reached just above $600,000.

Figure 3. FFT 2001 actual operational costs - FFT 2002 & IFT 2003-2006 estimated operational costs* by funding sources**

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* With the exception of 2001, these are preliminary cost estimates and will be carefully reviewed in the Final Business Plan.

**Construction costs for the IFT in 2002 are not included, but have already been secured.
Table 1. Current funding commitments, IFT revenue, and additional funding requirements for years 2002 through 2006

<table>
<thead>
<tr>
<th>Activities and Funding Requirements**</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-investment funding</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridging funding for FFT</td>
<td>195</td>
<td>324</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IFT establishment funding</td>
<td>25</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>IFT construction costs</td>
<td>330</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IFT capital equipment</td>
<td>196</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IFT revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional IFT costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Details available in the Business Plan

- Funding commitment secured
- IFT revenue
- Partner and donor funding required (Partners are considered Brazilian entities.)

TRAINING PROGRAM AND TIMETABLE

The timeframe for these activities is as follows. Continued site selection, partnership formation, and donor solicitation will take place through the end of this year (2001). Year 1 (2002) will be a final year of training activity for FFT to ensure continuity and to maintain stakeholder interest in FM-RIL. About 260 people will receive training in 2002. This number is lower than the number of students for 2000 and 2001; the reduction in student training is due to the burden associated with developing the IFT during 2002. During the first half of 2002, IFT will be established as a legal entity. Once it is a legal entity (June 2002), construction of IFT’s permanent training facilities will commence and additional staff will be hired.

Training in the new facilities will start in Year 2 (2003). In subsequent years, IFT will grow to full capacity; additional courses and staff will be added with the number of trainees increasing to an estimated 450 in Year 5 (2006).

Table 2. Courses and participants for years 2002 through 2006

<table>
<thead>
<tr>
<th>OUTPUTS BY YEAR**</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridging program - FFT</td>
<td>22a/260b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IFT Training program</td>
<td>20/278</td>
<td>24/329</td>
<td>30/394</td>
<td>34/453</td>
<td></td>
</tr>
</tbody>
</table>

** Details in the business plan
(a) Number of courses and (b) Number of participants - total for both off-site and on-site
Memórias da Reunião de Implementação do Centro de Apoio ao Manejo Florestal na Amazônia

Data: 25/02/2003
Horário: 9:00 horas
Local: Diretoria de florestas IBAMA/SEDE

Participantes:

<table>
<thead>
<tr>
<th>Nome</th>
<th>Instituição</th>
</tr>
</thead>
<tbody>
<tr>
<td>José Natalino M. Silva</td>
<td>EMBRAPA / FFT</td>
</tr>
<tr>
<td>Guilherme L. A Gomide</td>
<td>PNF / MMA</td>
</tr>
<tr>
<td>André da Silva Dias</td>
<td>FFT / IFT</td>
</tr>
<tr>
<td>Hildenberg da Silva Cruz</td>
<td>ProManejo / PNF / MMA</td>
</tr>
<tr>
<td>Rossynara Marques</td>
<td>Promanejo</td>
</tr>
<tr>
<td>Jorhan Zweede</td>
<td>FFT / IFT</td>
</tr>
<tr>
<td>Antonio Carlos Hummel</td>
<td>IBAMA</td>
</tr>
<tr>
<td>Francisco Barreto Campello</td>
<td>IBAMA</td>
</tr>
<tr>
<td>Tasso Resende de Azevedo</td>
<td>PNF / MMA</td>
</tr>
<tr>
<td>Selma Bara Melgaço</td>
<td>consultora</td>
</tr>
</tbody>
</table>

1. Introdução

A reunião foi convocada pelo PNF / MMA e pela Diretoria de Florestas / IBAMA com o objetivo de se discutir a necessidade e as condições para a criação de um Centro de Referência em Manejo Florestal na Amazônia.

A reunião foi iniciada pelo Gerente de Uso Sustentável dos Recursos Florestais, do MMA, que informou que a criação de um centro de treinamento e capacitação em manejo florestal é uma das prioridades do governo da Ministra do Meio Ambiente, cujo lançamento deverá se dar até o mês de junho deste ano. Relatou também a existência de outros Centros de Treinamento e capacitação na região amazônica como os de SINOP / MT, da FUNTAC / Acre e o da Mil Madeireira comentando sobre a importância destes Centros para o manejo sustentável das florestas do Brasil e de outros países da América Latina. Mencionou também sobre o trabalho em conjunto do MMA e IBAMA, bem como sobre a disponibilidade do ITTO em apoiar a criação de Centros de Treinamento. Finalmente passou-se a discutir o formato institucional deste Centro de Referência e da importância de se sair desta reunião com uma agenda definida.

Após, o Diretor de Florestas do IBAMA falou sobre a necessidade de se avançar nos estudos para a concepção do Centro e lembrou do apoio do ProManejo, do qual é também coordenador, às atividades de treinamento e capacitação realizadas pela FFT, e citou o mesmo apoio dado aos Centros em SINOP / MT através da parceria SENAI e a empresa Madeireira COIMAL e no Acre por meio da SEFE / FUNTAC e empresa madeireira, reafirmando o entendimento da Diretoria sobre a necessidade de criação deste Centro. Ressaltou também, que o futuro Centro de Referência serviria como um
catalisador das ações dos demais centros, gerando e difundindo conhecimento e capacitando multiplicadores.

O representante da FFT, Johan Zweede, apresentou os resultados dos treinamentos realizados em 2002, bem como as demandas (557 pessoas, planejado para 180 e realizado 301) e as dificuldades da entidade em continuar a operar sem uma estrutura própria, dependendo sempre de doadores internacionais com propostas a curto prazo (menos de dois anos) e sem capacidade de atender às demandas existentes, tanto em nível nacional quanto internacional. Mencionou que a FFT fechou o ano de 2002 com déficit de US$ 80,000. Lembrou, também, que os treinamentos são oferecidos a profissionais de todos os níveis, nos processos de produção e de processamento primário, e que também realizam pesquisas aplicadas no sentido de oferecer modelos de exploração de impacto reduzido, como por exemplo, para a exploração madeireira durante o inverno amazônico. Lembrou que em reuniões realizadas anteriormente foi levantada a questão de como a FFT é uma organização internacional sendo desta forma não elegível para receber recursos do governo brasileiro, mas esclareceu que este problema foi solucionado com a criação do IFT- Instituto de Floresta Tropical, em outubro de 2002, cujo conselho diretor é composto por José Natalino Macedo Silva (Diretor), André Dias, Johan Zweede, Adalberto Veríssimo e Ana Cristina Barros. Lembrou, ainda, que existe um projeto da FFT em análise junto ao ITTO para financiamento parcial destes cursos (período 7/2003 a 7/2005) e da disposição do KFW de apoiar a implantação da infraestrutura deste Centro. O André Dias, também da FFT, mencionou o fato de a FFT ser procurada por vários estudantes de engenharia florestal interessados em participar de cursos da Fundação, tendo estes estudantes pago a participação nos cursos oferecidos pela FFT com recursos próprios, o que demonstra a importância da existência deste Centro em preencher as lacunas existentes na grade das escolas de instituições de ensino da região e a necessidade de o trabalho ser realizado em parceria com outras entidades.

2. Definição do nome do Centro

Posteriormente entrou-se na pauta da reunião e passou-se a discutir o nome do Centro em função de seus objetivos e alguns nomes foram propostos:

1. Centro deReferência em Manejo Florestal;
2. Centro de Treinamento em manejo florestal na Amazônia;
3. Centro de treinamento em Manejo Florestal.

Após a discussão sobre algumas sugestões optou-se por “Centro de Apoio ao Manejo Florestal na Amazônia” por ser mais abrangente.

3. Escopo

Passou-se a discutir o escopo das atividades, quando ficou definida a Bacia Amazônica como área de atuação deste Centro, podendo o mesmo vir a ser um instrumento do TCA - Tratado de Cooperação Amazônica. Este Centro teria como objetivos proporcionar a difusão das técnicas de manejo florestal e exploração de impacto reduzido através de treinamento e capacitação, criação de modelos/sistemas de manejo, apoio à pesquisa aplicada, fomento e extensão. O Centro atuaria em rede com as outras iniciativas e instituições que atuam ou venham atuar nas áreas de treinamento, pesquisa aplicada e modelagem de manejo florestal.
Tasso mencionou a importância estratégica deste Centro contribuir para i) a adequação curricular das escolas técnicas florestais, ii) bem como junto aos cursos de engenharia florestal, iii) promover a integração das operações florestais com o processamento primário da madeira e finalmente iv) operar em rede com os demais centros de treinamento já mencionados.

4. Público Alvo

O público-alvo definido é:

- Centros de Treinamento e formação: ex: Unidades apoiadas pelo Promanejo (FUNTAC, SENAI, Mil Madeireira), Escolas Técnicas e Cursos de Engenharia Florestal;
- Profissionais que atuam em operações florestais (de todos os níveis);
- Projetos de Manejo Comunitário, Sindicatos e Associações de Classe, indústria, organizações da sociedade civil;
- Governo: IBAMA, MMA, OEMAs, Ministério da Educação, Ministério do Desenvolvimento da Indústria e do Comércio, Agências de Desenvolvimento, SEBRAE e Prefeituras Municipais;
- Instituições de pesquisa.

5. Estrutura e definição de local

Após algumas discussões definiu-se pela criação de um Centro na estrutura do IBAMA, a ser administrado por um Conselho deliberativo composto por instituições e entidades afins, devendo suas atividades serem executadas pelo IFT através um convenio entre o IBAMA e o IFT.

Para uma melhor discussão do formato institucional do Centro passou-se a trabalhar com dois cenários possíveis: a instalação de Centro em i) área privada ou ii) pública.

i) Área privada

No caso do centro ser instalado em área privada o IFT faria um convênio para a cessão de uso da terra com a empresa. Neste caso pensou-se em três cenários para viabilizar a geração de receita ao Centro com a venda de madeira:

1) O IFT vende e paga a madeira em pé para a empresa.
2) A Empresa compra madeira pelo valor de mercado aberto. Mesmo que seja a melhor opção, não cobre todos os custos operacionais, já que os custos de produção serão maiores que o de um manejo empresarial, por se tratar de atividade de treinamento. As empresas ajudariam a captar a diferença com recursos externos.
3) Empresa compra madeira pelo valor dos custos operacionais.

Em todos os casos, pensou-se que a operação florestal do Centro deverá ser certificada. Definiu-se que, posteriormente, ao se ter esta proposta mais elaborada, esta será enviada a algumas empresas madeireiras para verificação da aceitação e sugestões. Mencionou-se que as empresas Vale do Rio Doce, Jari, Cikel e Precious Woods seriam potenciais interessadas na proposta. Foi lembrado que a CIKEL deveria ser a primeira empresa a receber a proposta, por estar apoiando a FFT desde o início.
ii) área pública

Houve concordância de que se optasse pela instalação do Centro em área pública a Flona Tapajós seria a melhor opção, Passou-se a discutir a viabilidade legal da instalação do Centro de treinamento na Flona Tapajós.
Foi mencionado que a Flona Tapajós passa por um processo de regularização fundiária de suas terras, já que a mesma se encontra sob jurisdição de outros órgãos (Incra, Iterpa), sendo necessário obtenção de informação adicional sobre esta situação. Informou-se também que três comunidades indígenas reivindicam áreas dentro da Flona. Também foi discutido qual seria o mecanismo jurídico mais apropriado para viabilizar a instalação do centro de treinamento no local. Discutiu-se dois modelos para gestão da receita:

Modelo 1 - O IFT paga ao Ibama o valor da madeira em pé e depois a vende. Este é o modelo atualmente empregado pela Treviso/CEMEX na Flona Tapajós.
Modelo 2 – O Ibama vende/leilão a madeira em tora no pátio. O recurso obtido é transferido para o Centro de Treinamento dentro da estrutura do Ibama, que por sua vez repassa o valor ao IFT.

6. Responsabilidades e agenda

A reunião foi encerrada com a sugestão que Berg e Gomide ficassem responsáveis pela coordenação dos trabalhos. Definiu-se as ações a serem executadas por cada participante da reunião e as datas para a entrega de seus produtos:

Definiu-se o seguinte calendário:

10/03 a 19/05 – estudos
19/05 – fechamento da proposta
26/05 – apresentação à Ministra
1ª semana de junho – lançamento
<table>
<thead>
<tr>
<th>Atividades</th>
<th>Meses</th>
<th>Maio</th>
<th>Responsáveis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Elaboração de Minuta de Portaria para criação do centro</td>
<td>(28/03) Estudar modelos de outros Centros do IBAMA e outros modelos</td>
<td>(4/04) Proposta de estrutura e funcionamento (7-11/04) Consulta petit comité – reunião; elaboração minuta V1.0 (5-09/05) Envio de Minuta ao Jurídico</td>
<td>Selma</td>
</tr>
<tr>
<td>2) Minuta de convenio Centro X IFT</td>
<td>(28/03) Estudar TAMAR, CEMAVE</td>
<td>(4/04) Proposta de divisão de responsabilidade entre as partes e condições (11/04) Consulta petit comité – reunião; elaboração minuta V1.0</td>
<td>(5-09/05) Envio de Minuta ao Jurídico</td>
</tr>
<tr>
<td>3) Documento explicativo dos passos e implicações de ser em área privada</td>
<td>(28/03) Identificar áreas</td>
<td>(4/04) Proposta para operação e custeio</td>
<td>(5-09/5) Modelo de contrato e parceiros/concessão (?)</td>
</tr>
<tr>
<td></td>
<td>(28/03) Estudo de viabilidade econômica</td>
<td>(11/04) Consulta com as empresas e petit comité</td>
<td>FFT</td>
</tr>
<tr>
<td></td>
<td>(28/03) Verificar limites na atuação do MMA/IBAMA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(28/03) aplicar matriz de avaliação de área</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Documento com passos e implicações de ser área pública</td>
<td>(28/03) Apoio local -Levantamento benefícios / contrapartida para comunidade. -Conselho visitar ITTO -Visita de liderança na FFT em Cauaxi -Ángelo vir na reunião de abril</td>
<td>(4/04) Regularização Fundiária Chance de solução / em que prazo e como podemos ajudar?</td>
<td>Selma</td>
</tr>
<tr>
<td></td>
<td>(4/04) questão indígena 3 Comunidades reivindicando reconhecimento de áreas Garantir que área selecionada não corre risco de virar TI</td>
<td></td>
<td>Selma</td>
</tr>
<tr>
<td></td>
<td>(4/04) EIA RIMA SNUC exige EIA RIMA – já tem o da área do Projeto ITTO Tempo e custo</td>
<td></td>
<td>Selma, André</td>
</tr>
<tr>
<td></td>
<td>(4/04) Plano de Manejo da UC Como está e quando fica pronto?</td>
<td></td>
<td>Ângelo e Selma</td>
</tr>
</tbody>
</table>
### Specific Recommendations

1. **Reformulate the problem tree and the specific objectives so as to more clearly define the problems and solutions proposed:**

   We re-worded specific objective (SO) 2 so that it more clearly conveys the point that FM-RIL must be ‘sold’ in many regions of the Brazilian Amazon. The extension activities (e.g., workshops, lectures, and seminars) are quite distinct from the training activities (the mechanism of achieving SO 1), and are intended to raise awareness about the importance, technical feasibility and financial viability of adopting RIL. By raising awareness in this way, the extension activities promote FM-RIL and create demand for practical training. The new wording of this objective is:

   *De-mystify the concept and promote the practice of FM-RIL amongst stakeholders in the Brazilian Amazon through extension work.*

   We also re-formulated the problem tree as suggested so that it more clearly shows the causes of the distinct (though obviously related) problems addressed by the two SOs.

2. **Describe in detail the current status of the training center and the strategies to be applied to guarantee its long-term functioning and sustainability:**

   We re-wrote Part III, section 3 “Future operation and maintenance” to include a more specific explanation that the training center is now a priority activity with the government of Brazil through the Ministry of Environment and IBAMA. In addition, the “Proposal for the Permanent Training Center” is attached (Annex J) along with the minutes of a key meeting with MMA, IBAMA, and FFT in Brasilia (Annex K) where procedures and a timeline were agreed upon for the establishment and operation of the permanent training center.

3. **Clearly state the number of participants from each Amazon Basin country to be trained:**

   In discussions with Mr. John Leigh in February 2003, we explained that this issue was left vague because of limited funds, the need to bridge FFT’s transitional period, and the priority of training Brazilians. We agreed that rather than allowing only Brazilian participants, the courses should be open to qualified trainee candidates from other Amazon Basin ITTO member countries if the project would not incur additional expenses by their participation. We added a paragraph in Part II, Section 2.5.1.4 that states these points and further notes that participation of candidates from other
<table>
<thead>
<tr>
<th>Specific Recommendations</th>
<th>Responses / Actions Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>countries will be actively promoted. This promotion will be the responsibility of the Intl. Promotional expert.</td>
<td></td>
</tr>
<tr>
<td>4. <strong>Attach a written commitment from the company authorizing the TFF to run training on its property;</strong></td>
<td>Annex I is a letter by Cikel Brasil Verde S/A authorizing the use of their land for the project from 2003 through 2005 and a translation of the same.</td>
</tr>
<tr>
<td>5. <strong>Modify the organizational chart so that it clearly indicates TFF’s executing agency role in the implementation of this project;</strong></td>
<td>The organizational chart in Annex C was modified to reflect FFT’s role as the executing agency responsible for the implementation of this project.</td>
</tr>
<tr>
<td>6. <strong>Attach Terms of Reference for all professional staff and consultants describing their responsibilities in relation to specific project activities and outputs, instead of the Curricula Vitae currently attached. Further clarify the role of the International Promotional Expert. Note that ITTO procedures require project personnel to participate full-time if financed by ITTO and, as such, they cannot assume additional posts simultaneously at other institutions or projects;</strong></td>
<td>Terms of reference are attached for all the professional staff and consultants. In a consultation with Mr. John Leigh (Feb-03) he agreed that the C.V.s of those staff members already employed by FFT could be included and, unless this was a misunderstanding, they are. The role of the International Promotional Expert is to promote the courses outside of Brazil in Amazon Basin countries. (He recently played this exact role by facilitating the training of 12 trainers from Guyana who just completed a course at the FFT facilities in Brazil). In the budget, the calculation of time was changed to the whole 24-month period of the Project and based on the estimated number of days he will spend per month on course promotion.</td>
</tr>
<tr>
<td>7. <strong>Cleary identify and separate the items each funding source will finance, rather than allowing co-financing of most items as presented in the proposal, as this blurs the financial responsibility of each funding source and does not allow for proper auditing of ITTO’s part of the expenditure;</strong></td>
<td>As recommended, we separated each budget item by funding source. Although we understand that this facilitates accounting and auditing, we note that in many cases such separation is artificial and illogical. For example, in the case of trainers and field camp food, all of the trainers work in every course (paid by more than one funding source). It is odd for one donor to pay for the food of the trainees and another for the food of the trainers.</td>
</tr>
<tr>
<td>8. <strong>Include the costs related to the rental of project premises and to the Steering Committee meetings as part of the counterpart contribution to the project;</strong></td>
<td>The rental of the project premises is now allocated in the counterpart contribution. The line item of the Steering Committee meetings was confused with ITTO Monitoring, and that portion which remained is now in counterpart funding.</td>
</tr>
<tr>
<td>Specific Recommendations</td>
<td>Responses / Actions Taken</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>9. Either include administration personnel and other related overhead costs itemized separately under the Personnel, Consumable items and Other Components as part of the counterpart contribution, or include it as a lump sum (15% of total project costs) under the heading of Executing Agency Management and Administrative Overhead costs. Avoid double-counting this component;</td>
<td>All general administrative personnel are allocated in overhead and in counterpart funding. We handled all other that could be considered as double counting in the same manner. The only items that remained as separate budget components are directly related to the training project and are identified as such. An example is the accountant who will work only on the funds allocated by ITTO.</td>
</tr>
<tr>
<td>10. Provide a budget line for ITTO Monitoring and Evaluation (US$ 10,000/yr) and for Ex-Post Evaluation (US$ 15,000) and recalculate ITTO’s Programme Support Costs specified in the budget so as to conform to the new standard of 6% of the total project costs, and</td>
<td>The budget line items for Monitoring and Evaluation and Ex-Post Evaluation were corrected, and the ITTO Program Support Costs were recalculated. As a result, ITTO’s total costs increased considerably; to keep the budget to a reasonable total, the ITTO direct project costs were reduced somewhat to compensate for this increase.</td>
</tr>
<tr>
<td>11. Include an Annex, which shows the recommendations of the 25th Panel and the respective modifications done by submitting agency in tabular form.</td>
<td>Done as recommended in this Annex (Annex L)</td>
</tr>
</tbody>
</table>