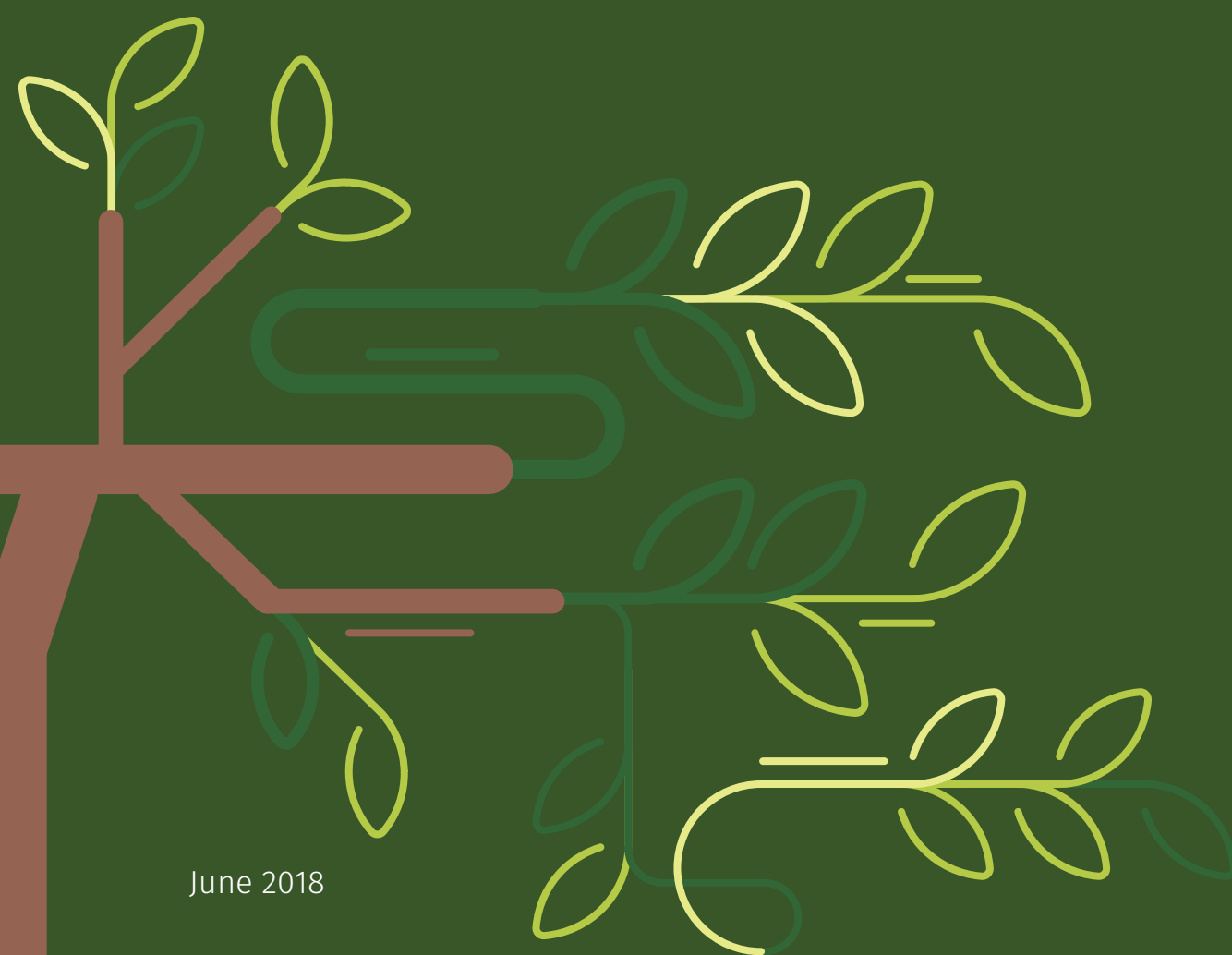


Effectiveness Evaluation Report



PROJECT DISSEMINATION
AND IMPROVEMENT OF
**SUSTAINABLE FOREST
MANAGEMENT TECHNIQUES**

June 2018



EFFECTIVENESS EVALUATION REPORT OF A PROJECT SUPPORTED BY THE AMAZON FUND

EFFECTIVENESS EVALUATION REPORT OF THE PROJECT DISSEMINATION AND IMPROVEMENT OF SUSTAINABLE FOREST MANAGEMENT TECHNIQUES OF THE INSTITUTO FLORESTA TROPICAL (TROPICAL FOREST INSTITUTE) - IFT

This report presents the results of the effectiveness evaluation of the project “Dissemination and Improvement of Sustainable Forest Management Techniques”, supported by the Amazon Fund, which was completed in 2015. This evaluation was conducted by a team of independent consultants coordinated by the technical cooperation between BNDES and the German Cooperation for Sustainable Development through GIZ. All opinions expressed herein are the sole responsibility of the authors, and do not necessarily reflect the position of GIZ and BNDES. This document has not been submitted for editorial review.

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List of abbreviations and acronyms

APP	Permanent Preservation Area	MMA	Brazilian Ministry of the Environment
APU	Annual Production Unit	MUMP	Multiple Use Management Plan (timber and non-timber products)
ATEF	Technical Assistance and Forestry Extension	NTFP	Non-Timber Forest Products
ATER	Technical Assistance and Rural Extension	OECD	Organisation for Economic Co-operation and Development
AUTEF	Authorization for timber harvesting	OEMAs	State Environmental Agencies
BNDES	Brazilian Development Bank	PA	Pará
CENAFLO	National Forest Management Support Center	PPCDAm	Action Plan for the Prevention and Control of Deforestation in the Legal Amazon
CFMP	Community Forest Management Plan	PPG7	Pilot Program to Conserve the Brazilian Tropical Forest
CIFOR	Center for International Forestry Research	PRODES	INPE Satellite Monitoring Project of Deforestation in the Legal Amazon
CGIAR	Consultative Group on International Agricultural Research	PRONAF	National Program for the Strengthening of Family Agriculture
CMFRB	Roberto Bauch Forest Management Center	REDD+	Reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
COFA	Amazon Fund Guidance Committee	RESEX	Extractive Reserve
COP	United Nations Conference of the Parties	RIL	Reduced Impact Logging
CU	Conservation Unit	RL	Legal Reserve
DGFLOP/Idelfor-bio	Management Board for Public Production Forests of Idelfor-bio	SCFM	Sustainable Community Forest Management
DOF	Document of Forest Origin	SEMAs/PA	State Environmental and Sustainability Secretariat of Pará
EMATER/PA	Technical Assistance and Rural Extension Company of the State of Pará	SEMMA	Municipal Environmental Secretariat
EMBRAPA	Brazilian Agricultural Research Corporation	SFB	Brazilian Forest Service
FA	Amazon Fund	SFM	Sustainable Forest Management
FLONA	National Forest	SFMP	Sustainable Forest Management Plan
FM	Forest Management	SFM-RIL	Sustainable Forest Management with Reduced Impact Logging
GHG	Greenhouse Gases	SISFLORA	System for the Sale and Transportation of Forest Products
GIS	Geographic Information System	SPRN	PPG7 Natural Resources Policy Subprogram
GIZ	German Cooperation for Sustainable Development	SPC&T	PPG7 Science and Technology Subprogram
ha	Hectare	UFAM	Federal University of Amazonas
IBAMA	Brazilian Institute of Environment and Renewable Natural Resources	UFPA	Federal University of Pará
IBGE	Brazilian Institute of Geography and Statistics	UFRA	Federal Rural University of the Amazon
Idelfor-bio	Institute of Forest and Biodiversity Development of the State of Pará	UFRO	Federal University of Rondônia
IFT	Tropical Forest Institute	UNFCCC	United Nations Framework Convention on Climate Change
Imazon	Amazon Institute of People and the Environment		
INCRA	National Institute of Colonization and Agrarian Reform		
INPE	National Institute for Space Research		
ITERPA	Land Institute of Pará		
ITTO	International Tropical Timber Organization		

Executive summary

The Project Dissemination and Improvement of Sustainable Forest Management Techniques, led by the Instituto Floresta Tropical (Tropical Forest Institute) - IFT, was conducted between 2011 and 2015 in Pará, with some activities in other states as well, such as Rondônia and Amazonas. It increased the management and technical capacity for conducting sustainable forest management (SFM) through trainings, capacity building activities and awareness raising, research and dissemination activities, in particular for the sustainable forest management of timber aimed at communities in conservation units (CUs) and to help spread the concept and practice of reduced impact logging (RIL)¹. In addition to the

community producers, logging industry companies, engineers, technicians, operators, technical school and university students and public servants also participated in the activities. The project also contributed to the dissemination of information and technology resulting from research started before the project by means of articles, scientific bulletins and technical manuals. Finally, the project also promoted the adoption of known techniques by disseminating them.

The highlights of the evaluation are outlined below, following the criteria established by the Organisation for Economic Co-operation and Development (OECD).

Impact

The project met and even exceeded the direct effect targets as defined in its monitoring plan.

One noteworthy impact of the project was the increased capacities of public servants in the formulation and implementation of public policies as well as in their professional efforts to keep part of the forest standing. IFT contributed to the progress made in the State of Pará in terms of the number of registrations of management plans and in terms of their monitoring, as well as in terms of authorized harvesting levels, the definition of standards for and the implementation of forest concessions, in addition to contributing to the professionalization of public sectors related to the forestry. At the federal level, IFT influenced the Brazilian Ministry of the Environment (MMA) Normative Instruction 04/2016, which provides for the Prior Authorization to Technical Analysis of Forest Management Plans (PMFS-APAT), through which the local regulatory agency analyzes the legal feasibility of conducting multiple use sustainable

forest management, based on the documentation presented and the existing forest coverage, as shown in satellite images. IFT also participated in the formulation of the guidelines for forest management in the Amazon in conjunction with EMBRAPA.

In the case of private companies, the project improved comprehension on the importance of conducting Sustainable Forest Management with Reduced Impact Logging (SFM-RIL), which enabled one of the interviewed companies to attain the Forest Stewardship Council (FSC) seal and increase its productivity by roughly 10%.

Based on existing studies, it is possible to assert that the application of SFM technology is more lucrative than conventional methods. However, it must be noted that these results do not apply when the company does not own the area or does not have an approved management plan.

Sustainability

The activities conducted by the project created the necessary (even if not sufficient) conditions for SFM-RIL to be practiced as a productive economic activity. With respect to the sustainability of the

results, the individuals who were trained have the potential to spread the information acquired. However, their potential influence tends to reduce if they do not take new or refresher trainings.

¹ For more conceptual information, refer to item 8 of the glossary in this Report.

Relevance

By changing the regional culture towards supporting the standing forest, well-conducted sustainable management, has the potential to become the most applicable economic activity in the region, provided adequate controls and incentives are implemented in conjunction with it. The adoption and application of SFM, as shown in IFT courses and events, has the potential to reduce the costs and increase the profits of timber management, so as to benefit producers.

Deforestation may be reduced and the retention of carbon increased with the widespread adoption of SFM practices, when compared to a

scenario of predominant conventional harvesting, which contributes to continuous environmental degradation.

Furthermore, the IFT project promoted the adoption of known techniques and started a cultural change in favor of the standing forest by spreading the reduced impact logging (RIL) concept. Lastly, the project has invested in highly relevant research, even though it has been limited to the conclusion, scientific production and disclosure of results from experiments initiated by IFT before the project, as well as the disclosure of results from research of operational nature.

Efficiency

The SFM courses offered lasted, on average, six days at an average cost of R\$2,436.00 per participant. The project proved to be efficient since IFT is the only organization in the Amazon supplementing university education and offering private sector trainings aimed at improving forest management.

Moreover, the project contributed to the increase of forestry research in the Amazon, a necessary although not sufficient action to reduce degradation and deforestation. It is expected that forest development agencies and other

stakeholders use such research findings.

The Amazon Fund (AF) funded each research in the amount of R\$85,000, which was complemented by IFT with resources from other partners. The main outcomes are included in scientific bulletins and technical manuals, helping to address the demand for information from professionals in the Amazon. With this aim in view, the AF provided the necessary resources to supplement the investments made previously by the IFT and its partner, making the intervention of the AF extremely efficient.

Effectiveness

The project demonstrated its effectiveness insofar as its actions made the different types of sustainable forest management more economically attractive (indirect effect 1). To achieve this, the project promoted increased management and technical capacities in the region.

In addition to this, university students demonstrated heightened professional vocation and greater enthusiasm for SFM after attending the courses. Many are currently working with technical assistance or have continued to graduate studies in the field and may have a positive influence on the adoption of SFM practices in the future.

According to the state government agencies which benefited from the project, the work of IFT also helped improve state-level public policy. Its work also encouraged in the application of SFM-RIL by the business sector.

Lastly, the project produced technically relevant materials. EMATER uses these materials with small producers in communities and some professionals who took the courses or were exposed to the materials currently make use of and pass on the information. The project also continued existing research, whose application is still limited due to the long-term implementation demanded by the experiments.

Recommendations and lessons learned

The main recommendations to the stakeholders involved in the project are:

To the direct and indirect beneficiaries:

- It is recommended that the communities in the CUs demand greater support from SFM forest development agencies and the simplification of SFM application processes, in order to integrate community management plans with the CU management plan, including the control activities provided for in the CU plan.

To the Instituto Floresta Tropical (Tropical Forest Institute) - ITF and SFM forest development agencies:

- It is recommended that they develop work in the field of community technical assistance and forestry extension (ATEF), as well as in the monitoring and physical surveillance of the areas harvested, always delegating to the communities the responsibility for determining the actions to be taken, whether through timber or non-timber, multiple use (MUMP) or agro-silvo-pastoral management plans.
- To achieve greater impact in reducing deforestation and degradation, all stakeholders should focus their efforts on the adoption of SFM by communities in protected areas, including quilombos (former slave settlements), and concession areas. The clear definition of geographic scope is recommended to encourage full deployment of the available resources.

To the Amazon Fund/BNDES Management Department:

- To achieve greater impact in reducing deforestation and degradation, it is recommended that efforts be concentrated on supporting concession areas and communities in CUs.

- It is recommended that in the future new projects work with activities that complement the fight against deforestation, such as training, technical assistance, control and surveillance.

To the OEMAs and the Brazilian Ministry of the Environment (MMA):

- It is recommended they identify and define strategies to meet the technical assistance needs of the concession companies.
- It is recommended they improve the licensing process for community forest management plans (CFMP), incorporating techniques to optimize images use and processing and to facilitate their geographic analysis, in the interest of licensing and monitoring.
- It is recommended they further simplify the application processes of Sustainable Community Forest Management (SCFM), integrating the CU management plans with community plans and with licensing dynamics.

To the Amazon Fund Guidance Committee (COFA) and Amazon Fund Donors

- It is recommended that the Committee make sure structuring indicators of indirect effects, both qualitative and quantitative, are adopted to optimize the impact of resources committed to projects.
- It is recommended that new methods to measure the existing indicator regarding avoided deforestation be incorporated, based on quantitative and econometric studies of the deforestation process, in order to identify the main factors that affect it and other related indicators.

Lessons learned:

- A careful definition of a logical framework and its indicators is important because the monitoring plan is the core of a project

funded by non-reimbursable resources, guiding the actors in its implementation.

- SCFM enabled a change in the relationship between the communities and the logging companies, empowering the communities to make cutting and sale decisions that were previously made exclusively by the logging companies.
- Projects that deal with trainings will have greater impact when they include technicians from the extension services and when they are accompanied by technical assistance and extension activities.
- Accurate assessments based on forest research are still a challenge (especially assessments in regard to the ex-ante situation, that is, prior to the project) because of the limited project duration when compared to the life span of

the trees.

- Projects driven by community demands are more successful. For example, there is an unsatisfied demand in the communities for support for NTFP projects and Multiple Use Management Plans (MUMP), as well as support for agro-silvo-pastoral systems.
- In some companies in which IFT-trained individuals work, there is often some resistance to change, and they generally regard sustainable practices as not palpable, so that they continue to disregard proper cutting cycles and practices.
- It is not always economically feasible for the beneficiaries to consolidate value chains. On the contrary, it is seen that the sale of logs often obtains better results than the sale of timber products.

Cross-sectional Criteria

Poverty reduction

The project made positive economic, social and environmental outcomes for traditional communities possible, based on activities that value and keep the forest standing.

The courses and other initiatives, such as the approval and implementation of CFMPs, can benefit the communities, many of which are in a state of poverty. In the case of the community of Itapeua, located in the Extractive Reserve (RESEX) Verde para Sempre, an additional family income of R\$7,000 is estimated for 2018.

Gender equity

Even though there were no specific activities aimed at promoting gender equality as part of the project, there was an increase in the number of women who took the courses over the years. The percentage of women among the participants increased from 22% in 2011, the first year of the project, to 27% over the two-year period of 2013-2014.

This is particularly important because the IFT courses give the women a competitive edge to enter a labor market that is particularly dominated by men, as is the case of the forestry industry. Currently, there is a trend towards gender parity in absolute numbers among university graduates in the area, which indicates a potential balance in the future market. It has been observed that the demand for training is still relevant for women to overcome career barriers. Women held prominent positions in the implementation of the project, as is the case of Dr. Espada, a project engineer for IFT.

1. BACKGROUND

Deforestation of the Amazon is one of the most relevant issues regarding the future of sustainable development in the region. This deforestation occurs mainly due to illegal logging practices.

In Brazilian forestry laws, the harvesting of timber from forests should be conducted using Sustainable Forest Management Plans (SFMP) and deforestation authorizations. Therefore, all timber from forest management supports development associated with conservation. However, based on the current scenario of low compliance with sustainable government policies, uncertain land tenure, the advance of agropastoral boundaries and limited access to credit, the promotion of actions directed towards the control of deforestation and sustainable development is a necessity.

Forest degradation caused by conventional harvesting practices – mainly the use of fire and new technologies – jeopardize the natural functions of capturing and storing carbon in nature. Forest management in the Amazon is normally conducted on the edge of legality, with no harvesting plans – due to the high short-term profits of the illegal activities, to the limited monitoring and control initiatives on the part of the Government and to the lack of knowledge regarding sustainable alternatives for forest management – which results in the weakening of the legal sale of timber.

The Instituto Floresta Tropical (Tropical Forest Institute) - IFT, headquartered in Belém/PA, has been working to foster good forest management practices in the Amazon since 1994, promoting sustainable forest management and reduced impact logging (FM-RIL) through capacity building activities, trainings and research. IFT strives

to produce and spread information regarding forest management to various stakeholders, such as students, government agencies, traditional communities, private companies, NGOs and national and foreign correspondents. The Institute applies methods directed towards selective timber harvesting, through applied research, capacity building activities, trainings and awareness raising events and forest extension.

The context surrounding the project is directly related to the target of controlling and fighting against deforestation established at the United Nations Conference of the Parties in Copenhagen (COP 15) in 2009. The IFT proposal was to supplement the actions outlined at the COP, associating them to sustainable development practices. The scenario at the regional level at that time was of reduced timber production, a shrinking logging industry, a small number of effective SFMPs at the SEMAS and a decreasing level of timber harvested from unauthorized areas.

The project Dissemination and Improvement of Sustainable Forest Management Techniques was conducted between the 2nd quarter of 2011 and the 4th quarter of 2015, and received the total amount of R\$7,449,000.00². It consisted of a series of capacity building activities and awareness raising actions developed on site at the Roberto Bauch Forest Management Center (Paragominas/PA), and off site locations in Pará, Amazonas, Rondônia, Acre, Amapá, Mato Grosso and São Paulo, within municipalities, districts, extractive reserves and national forests (Figure 1 and Appendix 9.4), in addition to research and the production of technical material, both directed towards the sustainable use of the Amazon Biome.



² The amount mentioned above represented roughly 60% of the total amount of the project and approximately 42% of the total of the six projects run by IFT, including an anonymous donation (IFT, 2012a, p. 22).

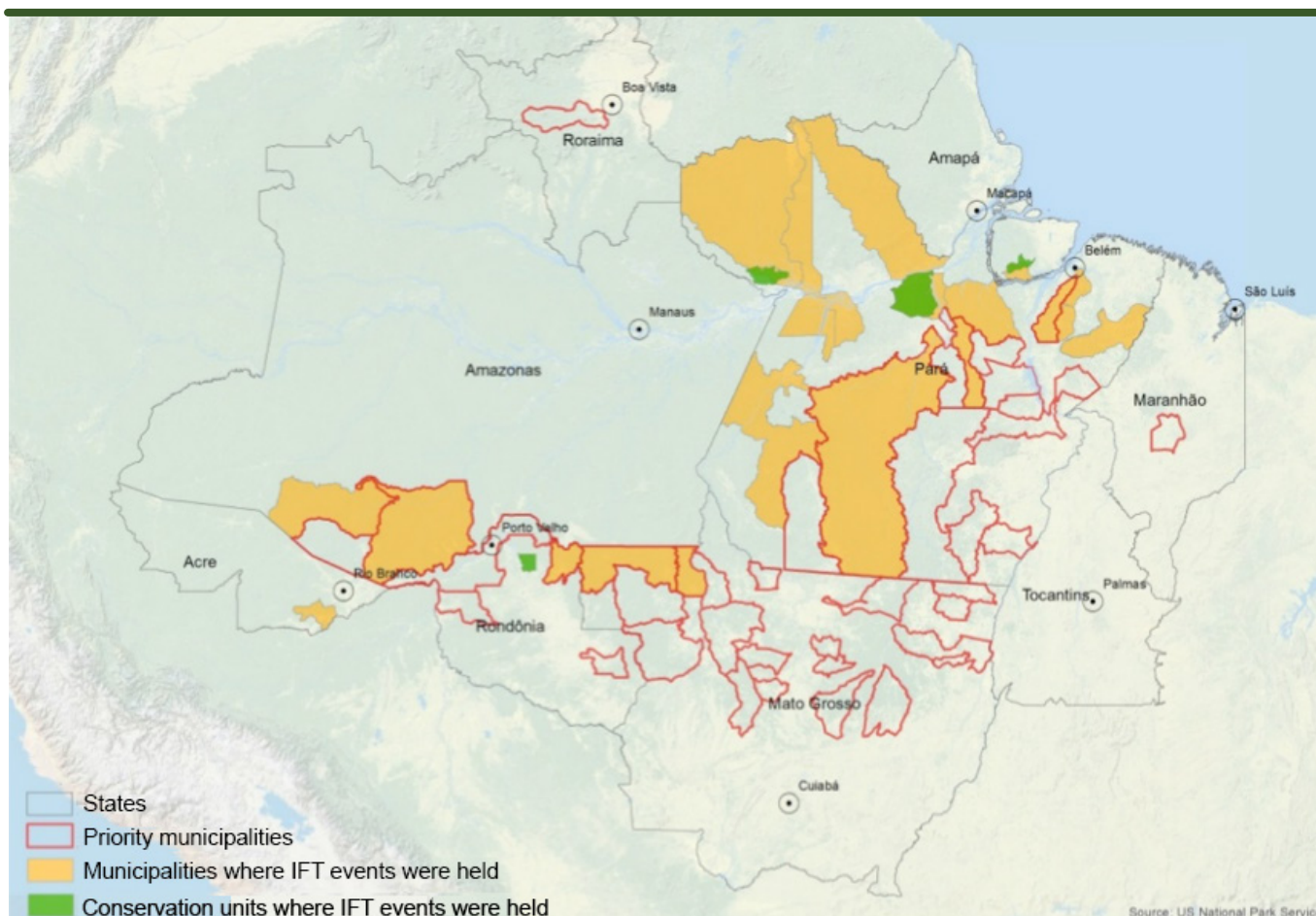


Figure 1. Municipalities that were targeted for IFT project capacity building activities.

During the implementation of the project, close to 30 technicians and researchers, from an approximate total of 47 IFT employees, were associated with the research experiments supported by the project, which contributed to the strengthening of the regional research network, in addition to the production and dissemination

of information and technology directed towards sustainable use. To conduct the capacity building activities, IFT had support from the logging company Cikel Brasil Verde Ltda., owner of the area where the Roberto Bauch Training Center is located (Cauaxi Ranch) as well as the Rio Capim ranch, where some field activities were conducted.



2. INTRODUCTION

The main purpose of this evaluation is to measure the effectiveness of the actions and the sustainability of the changes caused by the implementation of the project. The expected results were:

- Indirect effect 1: Activities that keep the forest standing are economically attractive in the Amazon biome;
 - Direct Effect 1: Increased management and technical capacity for the practice of sustainable forest management. This would have occurred through: a) Capacity building activities and practical trainings, on and off site, measured by the number of people trained who effectively use the information acquired; b) Awareness raising activities focused on decision makers, in particular community leaders and businessmen; c) Preparation and dissemination of material.
- Indirect Effect 2: Science, technology and innovation activities contribute to the recovery, conservation and sustainable use of the Amazon biome;
 - Direct Effect 2: Information and technology directed towards the sustainable use of the Amazon biome is produced and disseminated in the

form of articles, scientific bulletins and technical manuals.

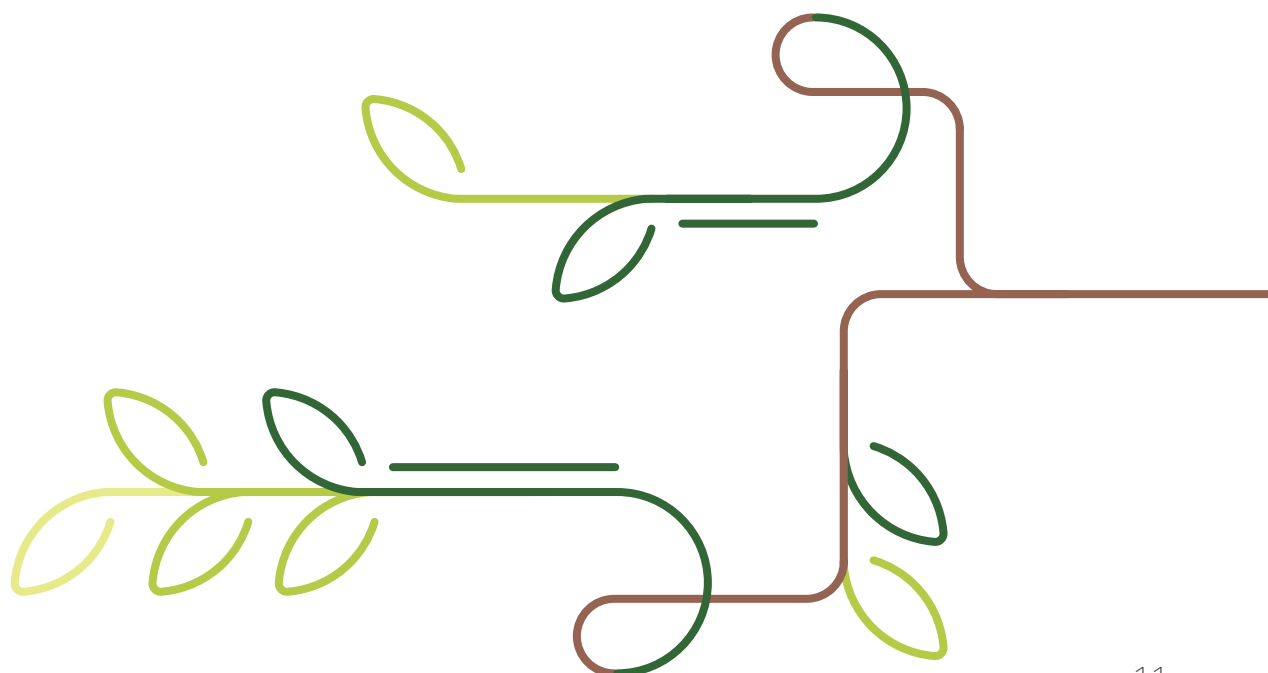
Based on this, the main results attained were:

- The qualification of 1,933 people in 140 courses, and
- 2,000 people attended 50 awareness-raising events on the implementation of good forest governance in the region.

Various activities were also developed to improve the scientific status of forest management, through research on the topic, in addition to the dissemination of the information resulting from such research, namely by:

- 13 newsletters on the economic, ecological and social advantages of forest management, and
- 17 technical publications on the improvements to the scientific status and on lessons learned from the scientific experiments conducted.

The main objectives of this evaluation will be the direct effects of the project. The evaluation also intends to verify whether the information generated is aligned with local and regional government policies directed towards forest management.



3. METHODOLOGY

This evaluation follows the Organisation for Economic Co-operation and Development (OECD) criteria of Relevance, Effectiveness, Efficiency, Impact and Sustainability, as well as criteria of poverty reduction, gender equality and REDD+ Safeguards, provided for in the Conceptual Framework for the Evaluation of Effectiveness of the projects supported by the Amazon Fund³.

The implementation of the evaluation included the formulation of a first report outlining the evaluation, the field mission, the formulation of a preliminary report, a round of consultations, and lastly, formulation of the effectiveness evaluation report of the project.

Throughout the evaluation process, the team performed a systematic collection of secondary data, such as studies, project performance and outcome reports and other documents. This data collection comprised the initial memorandum, which helped understand the project implementation. These materials directly supported the preparation of the first outline report, which also included the identification of stakeholders in the implementation of the project, a review of existing literature on forest management and the logging industry (based on sources from MMA and other federal agencies) and information on the application of PPCDAm in the region. Information on land tenure and socioenvironmental and development policies (including command and control actions, investments in infrastructure, forests and agribusiness) was also analyzed in order to assess the regional scenario. Information was constantly added to the memorandum along the evaluation process, including information obtained from the field mission.

The evaluation team, together with IFT, decided to limit the evaluation to the state of Pará, due to the limited resources available and to the fact that 80% of the project resources were allocated to activities in this state. Therefore, the conclusions cannot necessarily be extrapolated to other states. The field mission was proposed in conjunction with IFT, and took place between December 10th and 15th, 2017, in the cities of Belém, Paragominas, Altamira and Porto de Moz, including the traditional community of Itapeua, located in the RESEX Verde para Sempre (see box 2).

By means of loosely structured interviews, conversations were held with different audiences (businessmen, technicians from the environmental secretariats, ATER technicians, loggers, university professors and community producers from the RESEX).

In addition to this field mission, an online questionnaire was applied to the target audience of the project in order to collect general information and verify the sustainability of the IFT activities. The questionnaire also aimed at measuring the alignment with OECD criteria (item 3.3.1 of Appendix 9.7) in addition to REDD+ Safeguards and cross-sectional topics (item 3.3.2 or Appendix 9.7). It was prepared using an online tool called SurveyMonkey and made available between 22/Dec/2017 and 21/Jan/2018 to 1,081 participants of IFT events, with a response rate of 18% (or 192 individuals) (see Appendix 9.5).

Besides the field mission and the questionnaire, between January 23rd and 25th, 2018, a specific mission was conducted to prepare the supplementary study to this evaluation. The purpose was to understand the state-of-the-art of forest management (including organizational strength and agroforestry) in the areas where the project had actions between 2010 and 2016. This study corresponds to Appendix 9.2 of the report.

The present report was formulated to consolidate the data and information collected. The results are presented in terms of achievement of the indirect and direct effects of the project, in addition to results in terms of project management. It also presents lessons learned and recommendations targeted at specific actors, including: direct and indirect beneficiaries of the project, IFT, the Amazon Fund/BNDES, the Brazilian Ministry of the Environment (MMA), the Amazon Fund Guidance Committee (COFA) and Amazon Fund donors.

This report was presented at a round of consultations with the participation of the Reference Group for this evaluation, representatives from MMA and IFT, as well as IFT peers (representatives from similar projects supported by the Amazon Fund), represented by the Brazilian Forest Service (SFB). Based on the discussions at the round of consultations, the evaluation team consolidated the analyses and prepared this Report.

³ The conceptual framework is available at: http://www.fundoamazonia.gov.br/export/sites/default/pt/galleries/documentos/monitoramento-avaliacao/Marco_Conceitual_Avaliacao_de_Efetividade_Projetos_Fundo_Amazonia_2016.pdf

4. EVALUATION OF THE RESULTS

In this section, the results are presented and organized according to the direct and indirect effects of the project (Figure 2). Regarding the project monitoring plan, there is an indicator at the indirect effects level that deals with the progression of deforestation and degradation in the Amazon. We noted that this indicator interacts with the direct effects of the project, but also that the project alone would not be sufficient to reduce deforestation in the municipalities in which IFT operates. It is clear that the project contributed to reduce deforestation in the Amazon, however, other initiatives still need to be incorporated, such as monitoring and control by

government agencies and actions towards land tenure security and mitigation of climate changes in the region.

Therefore, we intend to respond to the indirect effects by proposing a new indicator (item 4.1) that measures (i) timber harvesting, (ii) deforestation and (iii) forest degradation in the state, in order to bring the results of the project closer to the preparation and implementation of management plans, which are essential territorial management tools to reduce deforestation and systematic harvesting in the region.

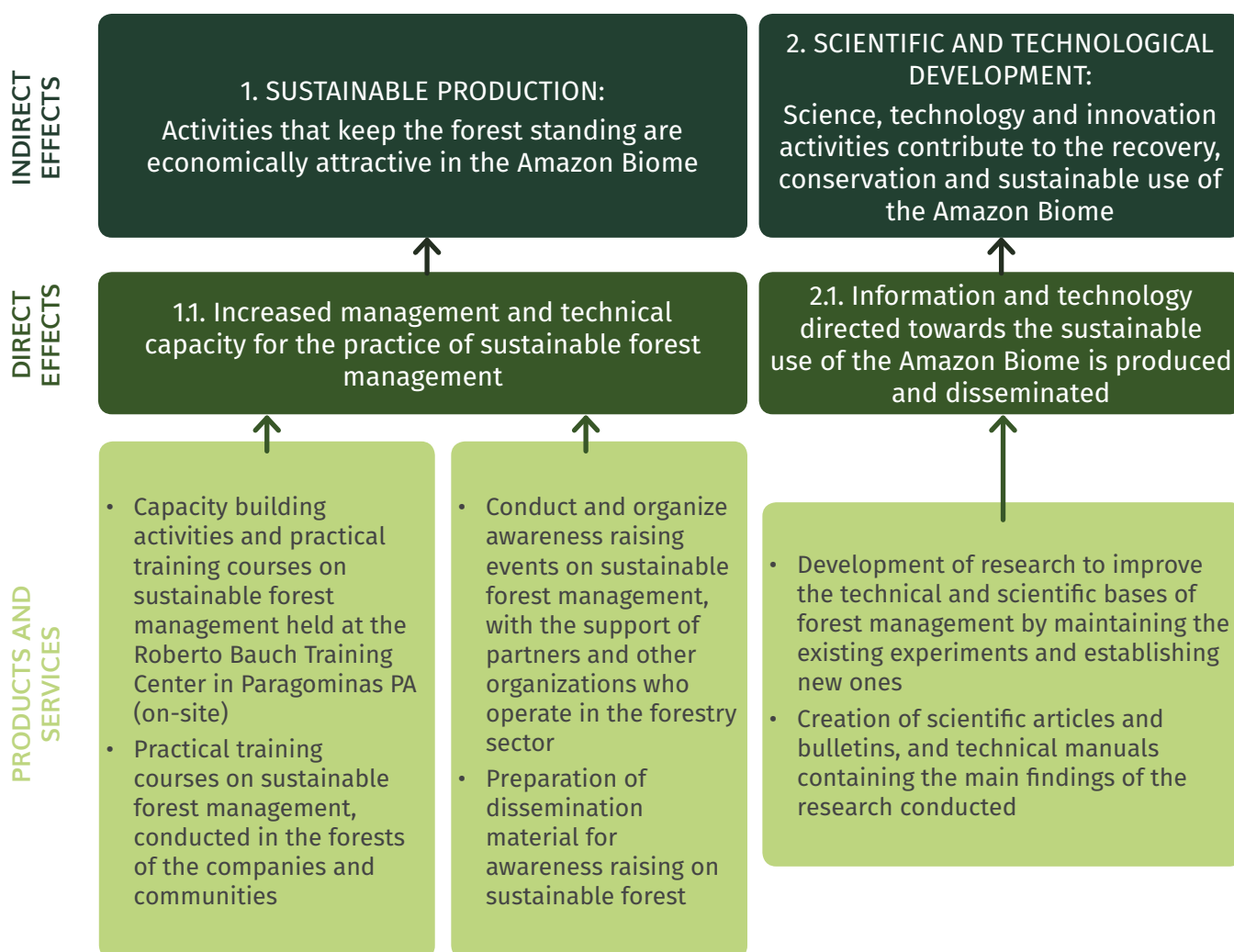


Figure 2. Logical framework of the project Dissemination and Improvement of Sustainable Forest Management Techniques

4.1. Indirect effect: Activities that keep the forest standing are economically attractive in the Amazon biome

Up until the 1990's, experiences of forest management with reduced impact came mainly from Suriname, Guyana and Indonesia. In this context, most of the targets established at the Conferences of the Parties (COPs) were to control and fight against deforestation.

IFT has been offering forest management courses since 2003. Therefore, at the time of the start of the project, their operations were already consolidated, and the support from the Amazon Fund/BNDES allowed the continuation of application of Reduced Impact Logging (FM-RIL), thereby contributing to effectively reduce deforestation and degradation, in face of the challenges of competing for space with the agro-pastoral industry and the limited adoption of sustainable practices by the logging industry.

The project activities have made different types of Sustainable Forest Management (SFM) more economically attractive. These types include business (through concession or not), community and family forest management; under federal or state arrangements; for harvesting timber and non-timber forest products (NTFP) or for multiple use. For example, it is estimated that in 2018 the families from the Itapeua community which took part in the project will increase their family income by R\$7,621⁴ with timber sold based on SFM.

Scientific studies, such as Holmes *et al.* (2002) and Barreto *et al.* (1998) proved that the use of SFM technology is more profitable than conventional methods. This means that, once the participants are trained or made aware of SFM, the application of this information reduces costs and increases the returns of management. Therefore, producers

of different natures benefit: companies increase their productivity, profit and percentage of legal activities, and communities increase their collective well-being, including improvements in the community and guaranteed family income from off-season activities. With extensive adoption of the SFM practices, deforestation would be reduced and carbon retention increased, when compared to the conventional scenario.

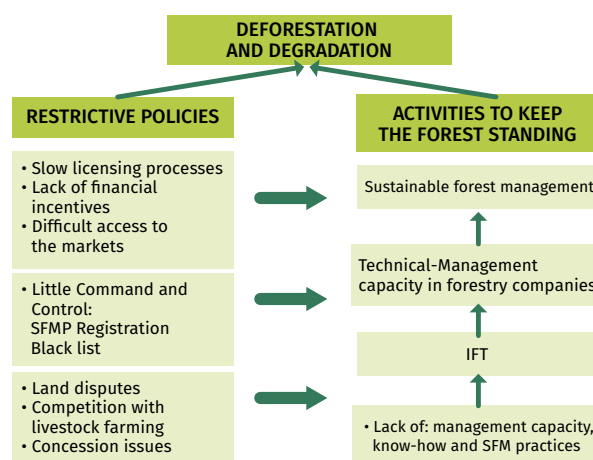


Figure 3. Factors in relation to indirect effect I that influence the adoption of SFM by the participants of the logging industry.

In order to attain this, IFT needed to establish positive conditions (increased management and technical capacity to allow preparation of and compliance with management plans) and overcome government policies obstacles (such as inadequate systems of repression and incentives, bureaucratic management plans and licensing processes, insufficient land tenure security measures) and obstacles in the forestry sector (such as access to markets, lack of structured productive chains, competition from livestock farming and the challenge of concession agreements that accelerate the cutting and/or reduce conditions for sustainable management).

⁴ The calculation made to reach the average amount of family income is as follows: R\$/m³ x Community income % of the sale amount x m³ of timber / number of participating families x 20% x 3,100m³ / 16 families = R\$ 7,621/ family.

In the context of deforestation, based on the data available in the System for the Sale and Transportation of Forest Products (SISFLORA, SEMAS/PA) which monitors the harvesting of state timber, with the INPE Satellite Monitoring Project of Deforestation in the Legal Amazon (PRODES/INPE) and Degradation (DEGRAD/INPE⁵), we propose an of the volume of logs harvested (m³) and of deforestation and degradation. Note: the option of using only this data and during the period specified below is a result of the lack of data on DOFs (Document of Forest Origin) and management plans for the previous years.

Between 2010 and 2015, a decrease in timber production, degradation and deforestation was identified in Pará (Table 1). In 2010, 3.7 million/m³ of logs were produced, against 1.9 million/m³ in 2015 (decrease of 47.6%). Degradation fell close to 12%, while the decrease in deforestation was close to 43%. In the future, greater control from state government agencies – between 2016 and 2017 SEMAS improved SIFLORA aiming at assessing the quality of FMPs (HUMMEL, 2018) as well as at their effective monitoring – may mean an even more profound decrease. In addition to this, there is a constant reduction in the areas available for timber harvesting, indicating a change in the scenario and consequently a decrease in the number of logging industries (HUMMEL, 2018).

Variables	Year						Percentage variation 2010-2015	Annual progression graph
	2010	2011	2012	2013	2014	2015		
Volume of logs (m ³)	3.715.322	3.697.315	3.375.491	3.166.361	2.946.764	1.947.710	-47,60%	
Forest Degradation (km ²)	3.499	6.283	1.359	1.511	3.163	3.079	-12,00%	
Deforestation (km ²)	3.770	3.008	1.741	2.346	1.887	2.153	-42,89%	

Table 1. Volume of logs, degradation and deforestation in Pará. Source: Document of Forest Origin (DOF) and SISFLORA, SEMAS/PA and PRODES and DEGRAD/Inpe. Note: in the case of degradation, averages were estimated for 2014 and 2015, based on data over the past four years.

In face of this scenario of control and reduction in the harvesting areas, the project Dissemination and Improvement of SFM Techniques was and is relevant in terms of improvements for the preparation of management plans and for harvesting forest resources. According to state government agencies (EMATER and Ideflor-bio), the courses reinforced the implementation of state level public policy, since they contributed to increase capacities, resulting in demands for higher quality forest management. They also increased the number of individuals trained in reduced impact logging (RIL) techniques.

4.1.1. Direct effect: Increased management and technical capacity for the practice of sustainable forest management (through on-site and off-site courses, SFM awareness raising events and dissemination material.)

Close to 81% of the resources committed by the Amazon Fund were used on this direct effect. The trainings for operational-level workers and capacity building activities for technicians (intermediate and upper levels) were conducted at CMFRB (on site) and in their respective project sites (off site). The trainings were designed to increase management and technical capacity to conduct

⁵ DEGRAD is a system used to map areas in the process of deforestation, where the forest coverage has not yet been completely removed. The purpose of this system is to map, in detail, forest areas with a tendency to be converted to clear cutting. These areas are not computed by PRODES.

SFM, with the hope that the trained people would be able to overcome the obstacles to sustainable management, thereby reducing deforestation and forest degradation.

The courses lasted on average six days, at an average cost of R\$2,436 per participant (IFT, 2012). They were adapted to the needs of the participants, with trainings covering pre-harvesting, harvesting and post-harvesting aspects of forest management, in addition to capacity building activities on forest management for decision makers, professionals and forestry workers. These courses allowed for overcoming the lack of equivalent practices in university courses and the lack of supplementary practices to the day-to-day operations of these professionals on the functions directly applied to SFM.

IFT instructors consisted of forestry and agricultural technicians, forestry engineers and instructor-operators, along with foreign university professors and even professors from the Brazilian

Agricultural Research Corporation (EMBRAPA), whose contributions could be continuous or intermittent during the courses. The participants were selected among professional from this field and can be divided into two groups:

1. Those who worked or were preparing to work in the logging industry (workers and representatives of logging companies, members of extractive communities, quilombos, riparian communities or settlements), and
2. Those who had an indirect relationship with the sector (journalists, university professors and students, forestry technicians and engineers and agronomists from NGOs and the government, including public servants from OEMAs, IBAMA, SFB and ICMBio).

The quantitative indicators for the direct effect, as defined in the monitoring plan of the project, were attained or exceeded (Table 2).

Direct effect:	Targets		Attained by 1/2014		Attained/Target (%)	
	Events	Trained People	Events	Trained People	Events	Trained People
Increased management and technical capacity for the practice of sustainable forest management						
On-site courses	70	900	72	1145	103%	127%
Off-site courses	40	400	59	705	148%	1,76
Awareness raising events	70	2100	50	2141	71%	102%
Technical material	10		13		130%	

Table 2. Source. IFT Result Assessment Report.

Positive points

In the case of the first group mentioned in the previous topic, specifically community members interviewed in Itapeua at RESEX Verde para Sempre, the greatest benefit of the courses and of the support from organizations such as IFT is the improved work conditions and greatest understanding regarding their activities. This means that information enabled and strengthened their resistance against loggers, since community

members started making cutting and sale decisions themselves, decisions that were previously solely on the hands of logging companies. The forest came to be seen as a savings account that can generate income, not just through timber harvesting, but also through management of non-timber products, such as titica vine, açai palm and Brazil nuts.

IFT customized the trainings and capacity building activities to improve accessibility for community

members and to address their learning difficulties of applied techniques. The teaching materials, such as leaflets, are still used by the communities and close to 10 families have already implemented NTFM based on the courses offered by IFT, in addition to 20 other interested families.

The private companies, represented by Cikel and Ebata, understood the importance of FM-RIL methodology and have optimized their operations by applying the information they received from the trainings and capacity building activities offered by IFT to their employees. It should be noted that after learning and applying these new practices, Cikel was awarded the Forest Stewardship Council (FSC) seal and increased their productivity by roughly 10%. Cikel also offered the land for building the training center in Paragominas (CMFRB) and the companies Caterpillar and Stihl supported the courses by making their machinery available.

The university students trained by IFT, identified in the second group of stakeholders in the previous topic, improved through the trainings their practical understanding of the topics discussed in the classroom. They resumed their academic program with a professional advantage and increased enthusiasm for SFM. A large percentage of the students who took the courses is working today with technical assistance or pursuing post-graduate studies.

At the Altamira campus of the Federal University of Pará (UFPA), the IFT courses, especially the ones on forest management, were incorporated as one of the three mandatory internships for the Forestry Engineering program. IFT also had a part in the definition of the forestry engineering programs contents at the Federal Rural University of the Amazon (UFRA), the Federal University of Amazonas (UFAM), the Federal University of Rondônia (UFRO) and technical schools in Pará and Amazonas.

In regard to public servants, their increased skills from taking the IFT courses contributed to the creation and application of government policies on forest management. Therefore, the employees

trained by IFT contributed to the progress of SEMAS/Pará in the registration and follow-up of management plans. Cardoso and Souza (2017, p. 23) report that, while only 22% of the area harvested in Pará was authorized in 2011-2012, 56% of the forest area harvested in 2015-16 was authorized, a dramatic change in just five years. This result was possible because Imazon used remote sensing to detect the scars of selective harvesting. This information, along with information from SEMAS/PA on the areas of authorized forest management, makes following-up on the implementation of the forest policy in the state possible.

IFT assisted in the definition of standards and the employees trained by IFT supported the implementation of forest concession arrangements in the state. According to the Management Director of Public Production Forests of the Institute of Forest and Biodiversity Development of the State of Pará (DGFLOP /Ideflor-bio), IFT professionalized the institution's department. The entire team took IFT courses, in particular those on concession arrangements and botanical identification. The courses offered by the project are fundamental for the performance of these government stakeholders in the implementation and monitoring of forest activities in the state.

At the federal level, IFT influenced MMA Normative Instruction 04/2016, which provides for the Prior Authorization to Technical Analysis of Forest management plans (PMFS-APAT), through which the local regulatory agency analyzes the legal feasibility of conducting multiple use sustainable forest management, based on the documentation presented and the existing forest coverage, as shown in satellite images. IFT also participated in the formulation of the guidelines for forest management in the Amazon with EMBRAPA. Another positive point was the cooperation between the different stakeholders to successfully achieve the training results. This included the support of SFB/CENAFLOP for realizing the training and capacity building activities, and for bringing labor unions and schools to IFT events.



In addition to the positive effects of the capacity building activities, the technical materials distributed also made it possible for other audiences to have access to the information. EMATER applies these materials in communities and university professors and other professionals who have taken the courses or were exposed to the materials use them and pass on their information.

Finally, the identification of management plans formulated by building upon trainings provided by IFT makes it possible to estimate the probable impact of the project in avoiding forest degradation and deforestation. Methodologically, Asner et. al. (2005) estimates that within four

years of conventional forest harvesting, 32% of the respective area is converted into other uses. Based on this hypothesis and the identification of the average area harvested in the management plans registered at SEMAS/PA from 2015 to 2016, of 808 ha, it is estimated that, if all the management plans registered were executed correctly (instead of conventional harvesting), 258 ha of deforestation would be avoided in four years⁶.

More information on the impact of capacity building activities for different publics can be found in the box below, which shows the consolidated results of an online questionnaire (via SurveyMonkey) applied to participants (Appendix 9.5).

BOX 1. RESULTS OF THE ASSESSMENT OF IFT COURSES BY TRAINED INDIVIDUALS

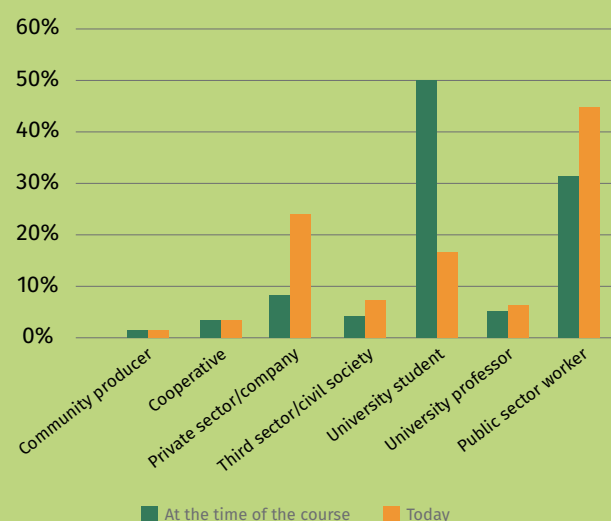
Information on the respondents

The survey was sent to 1,081 people who participated in at least one capacity building activity or course taught by IFT within the scope of the project Dissemination and Improvement of SFM, of which 18% responded (192 questionnaires completed). Of the 192, 44% are women and the majority, 75%, only took one course.

Regarding the nature of the participants, 50% of the respondents took the course while they were university students, roughly 31% worked in the government sector, 7% in the private sector, 3% were community and/or cooperative producers and 3% of the respondents worked in the civil society.

These percentages do not necessarily reflect the division of all the trained individuals, because the electronic means used for the questionnaire has a greater reach on some audiences than others. As expected, there were few responses from community producers, so it is difficult to assess how the data collected apply to this sector. This

percentage is not believed to reflect the number of individuals trained who worked in communities, only their access to the questionnaire.



Graph 1. Line of work of the people trained at the time of the course and currently.

In regard to their current line of work, there is a significant shift from university students to the public (which increased from 31% to 45%) and private sectors (which increased from 7% to 24%),

⁶ Ha/FMP x % of conventional harvesting area converted in 4 years = Deforestation area avoided by MP executed in conformity. 808 ha x 32% = 258 ha.

and a small and significant increase in the third sector of 3% to 7%; these relocations may indicate the current activities of some of the students.

Most of the trained individuals performed their professional activity at the time of the course in Belém (15%), followed by Paragominas and Brasília (9% each). Some individuals even worked in Piracicaba (8%), state of São Paulo, and Loreto, a municipality in Peru. It is seen that currently, in relation to the time of the course, there is a small increase in those working in Brasília (from 9% to 12%), Belém remained stable and Altamira exceeded Paragominas by 1.5%, probably a result of recent developments in the city (such as the construction of the Belo Monte hydroelectric power plant).

Information on the courses

Almost 90% of the respondents took on-site courses at the Roberto Bauch Forest Management Training Center. Among other locations, the most popular was Belém, where the IFT head office is located, accounting for 4% of the courses. The most popular trainings were “Forest Management and Reduced Impact Logging” and “Management of Reduced Impact Logging” which, together, accounted for almost 50% of all the courses reported by the respondents. In general, the courses lasted between 4 and 7 days (71%). The year in which the most people took the courses was in 2014 (25%), followed by 2012 (20%).

Impact of the courses

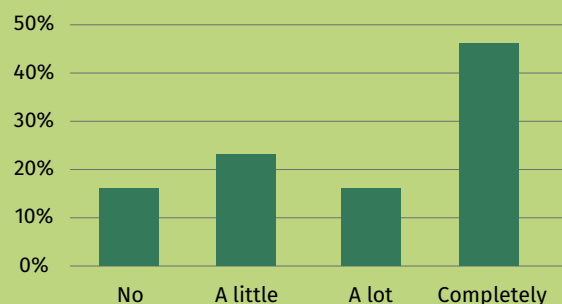
Generally speaking, the SFM concept was not very familiar for 54% of the respondents before the course. Today, 96% believe that SFM is important to stop deforestation.

Before taking the course, only 22% believed that SFM was heavily applied in the municipality, and after the course, 44% believed that it is applied extensively. 66% believe that SFM is still not

being executed correctly in their region and 71% believe that there is lack of support from the municipal government, while 60% believe that the topic is not sufficiently dealt with in municipal/state public policies.

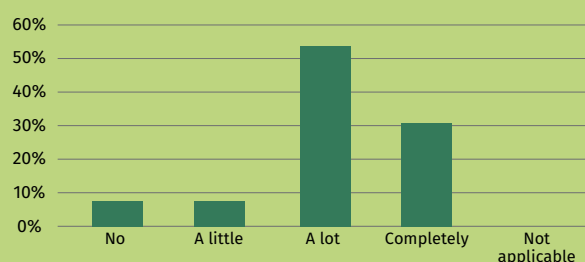
In the case of students, public servants and civil society actors, who use the information obtained as a means to enter the market or understand and analyze forest dynamics, 34% were well acquainted with SFM before the course and 77% incorporated the information learned from the courses in their activities.

In the productive sector, 61% agree that the use of SFM is profitable for their activities. However, there was an increase of 9% among those who stated that they do not use SFM significantly after the course in relation to those who did not use it before the course.



Graph 2. SFM is lucrative for professional activities.

Among the 30% who apply forest management today, the support from IFT was the deciding factor for applying SFM for 85% of the respondents.

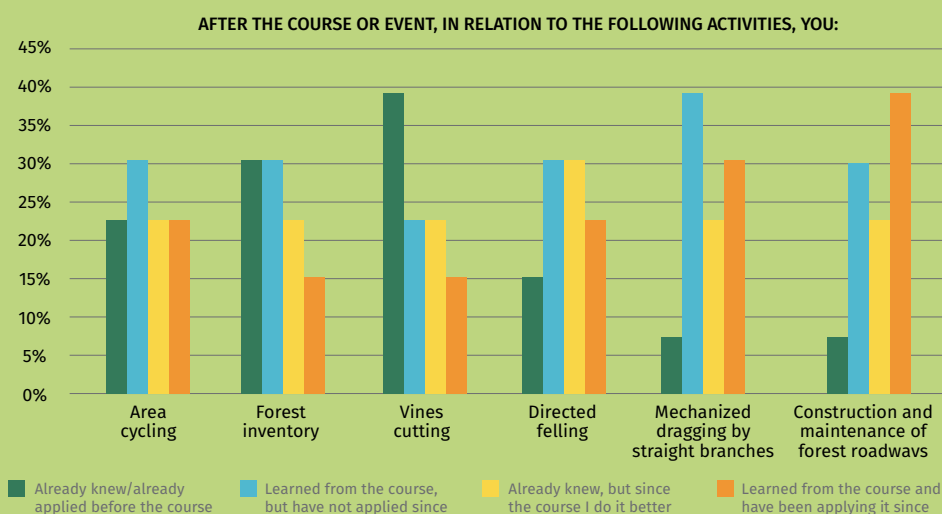


Graph 3. IFT support is a determining factor for the conduction of SFM.

For 92% of the productive sector respondents, the capacity building activities were, to a certain extent, important for the continuation of their professional activities.

In relation to the information learned from the capacity building activities that was essential for the producers, whether community members

or business people, to adopt or improve management techniques: 62% say they have started using or are using better the knowledge and information for clearing and maintaining roads, 54% for the directional felling and mechanized dragging through narrow paths, 46% for applying cutting cycles and 38% to conduct the forest inventory and vine cutting.



Graph 4. Percentage of trained people who already knew or applied, who learned but have not applied, who already knew but do better and who learned and apply techniques of forest management.

After the courses, 68% of the trained people reported that they changed their way of thinking and/or had an impact on their professional activity, either because they could integrate the information to formulation of government policies and technical regulations (including forest certification, analysis of rural environmental permits and forest concession arrangements), or because they can use the information in the classroom or apply it to reduced impact logging (RIL) and its associated techniques, after they realized SFM could be

financially feasible or even more profitable.

IFT was considered a benchmark on the subject of SFM in 65% of the comments made by the trained people, who noted the importance of the capacity building activities for their keeping up with new developments and for offering a practical vision on the importance of reduced impact logging (RIL) in the forest. The comments also revealed a demand for capacity building activities on ATER and botanical identification of forest species of the Amazon.

Challenges

The communities still demonstrate their need to conduct small scale farming to survive and generate income. To better use their areas and to promote reduced deforestation, capacity building activities

related to mechanization and the continual use of small scale farming would be indicated to improve their practices, beyond forest management.

The sale of TFP and NTFP is also a clear challenge, as seen at RESEX Verde para Sempre. Currently,

the sales of non-timber forest product chains (for example, the chains of Brazil nuts and oils, which go to Belém, Santarém and Belo Horizonte) is made by middlemen who do not use minimum price policies.

The decision of logging companies to change their conventional practices for sustainable ones depends on the land tenure situation. Often, there is no practical impediment to their exploitation of lands that have no defined domain or are unoccupied and have no management plans. Since they do not own the land, they are less subjected to control and have little or no incentive to adopt management practices and limit the harvesting of logs. In these cases, the studies that defend the profitability of sustainable management do not apply. Additionally, with a lower availability of private and unoccupied areas and lack of control, logging companies may resort to harvesting protected areas, including indigenous lands. In Pará, 5,576 hectares of illegal timber harvesting were detected on indigenous lands between August/2015 and July/2016, of which 81% were on the indigenous lands in Alto Rio Guamá (CARDOSO, 2017, p. 25). The invasion of indigenous lands by logging companies may increase if there is no surveillance, specific command and control actions and regulations that support SFM application by indigenous communities on their land.

4.2. Indirect effect: Science, technology and innovation activities contribute to the recovery, conservation and sustainable use of the Amazon biome

The research activities conducted have contributed and will contribute to the conservation and sustainable use of the Amazon biome. The techniques resulting from the researches that were completed and disseminated in technical manuals may be applied in the future by different actors. It is assumed that there are no prospects for adoption 1) without the mediation of technical assistance and forest extension, when the information is still restricted to scientific bulletins, or 2) when the economic feasibility has not yet been proven.

At many companies in which the trained people work today, the environmentally sustainable practices are still a distant possibility, since they do not necessarily obey the appropriate cutting cycles. Thus, the challenge is to make the efforts of implementing sustainable practices more appealing to the private sector. In addition to this, part of the forestry sector workers who took the IFT courses may have migrated to large infrastructure projects in the Amazon, such as the Belo Monte HPP or in urban areas, and thus may not be applying the information obtained.

For the government agencies, there is still a clear demand for more capacity building activities on natural resource harvesting and the benefits of NTFP, as well as on government policies to promote market access.

In the case of IFT, the initial idea of the project was to set up a permanent and sustainable training center. However, the fixed costs of a forest management training center are considerably high, and basically depend on the donation of non-reimbursable resources (examples of funders: ProManejo, ITTO and others). Other means must be found to guarantee the financial sustainability of the training center, such as harvesting through forestry concession agreements.

Forest Research Evaluation

Assessing forest research is challenging, in terms of measuring the impacts of its application in comparison with the situation ex-ante. The measurement of the results in terms of their contribution to the second indirect effect of the project is hard because of the long time it takes for scientific knowledge to generate benefits in terms of long production cycles and time for the dissemination of techniques.

The Center for International Forestry Research (CIFOR) of the Consultative Group on International Agricultural Research (CGIAR), based in Bangor, Indonesia, is the world leader in forest research evaluation. They acknowledge the difficulties in evaluating this type of research when trying

to measure impacts of indirect effects. Forest research in the tropics is difficult due to land tenure insecurity, conflicts around natural resources, power imbalances and lack of capital. To deal with these limitations, Spilsbury and Kaiaowitz (2002) proposed putting emphasis on research on government policies that aim at solving land tenure issues.

Forest research is guided by four components: 1) internal perspective; 2) user perspective (satisfaction by participating communities); 3) the potential effects of the research; and 4) an assessment of the perspectives for its broader application (SIMON, 2000: 197). These components are considered in one of the COFA recommendations.

4.2.2. Direct effect: Information and technology directed towards the sustainable use of the Amazon biome is produced and disseminated

The project invested in highly relevant research. Information and technology were generated, but due to the limited time frame, the information disseminated and adopted is limited to the results of research started before the project and other operational research with immediate impact. In this sense, the project promoted the adoption of known techniques that were disseminated by the project, spreading the reduced impact logging (RIL) concept. The main project results for this effect are outlined in the table below.

Direct effect: Information and technology directed towards the sustainable use of the Amazon biome is produced and disseminated	Targets	Attained by 1/2014	Attained/Target (%)
Applied research experiments	12	18	150%
Technical materials with results from applied research	11	17	155%

Table 3. Source: IFT Result Assessment Report.

Positive points

In terms of research on forest management, scientific experiments which would have been discontinued without the financial support of the project were carried out. This had the impact of increasing forest research in the Amazon, a necessary condition for reduced degradation and deforestation.

Considering the potential effects of a wide application of the research conducted by IFT, the evaluators identified the studies in Appendix 9.3 as satisfying the direct effects of the project. It is hoped that development agencies⁷ will incorporate and apply this valuable information, and that it will also be used by other researchers. It is worth mentioning that the publications on concessions and business management have also contributed to the qualification of businessmen.

The project invested in highly relevant research, including the adaptation of results from foreign researches to Brazil. Each research project had an average cost of R\$85,000, complemented with non-financial resources such as the forest management center (owned by CIKEL), and human resources such as professors and students from Brazilian and foreign universities. It was noted that communities supported by IFT, such as Itapeua, were led to consider adopting the new practices on sustainable management taught.

Products, scientific bulletins and technical manuals containing the main research findings were relevant within the limited research framework on native forests in Brazil. These materials were produced from information and research conducted before the project and were successful in addressing the needs of the IFT professionals and those working in the Amazon.

The dissertations supported by the project and other publications are high-quality works with an elevated scientific value, of which some have been published in renowned journals. The partnership strategy with national and foreign universities

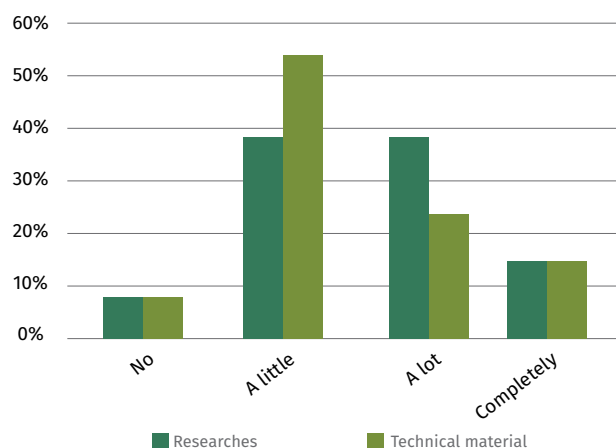
⁷ Rural extension development agencies are defined as federal, state, municipal and private units who offer services to harvesters, settlements and riparian communities members, indigenous people and other community members.

was successful. The bulletins were praised for the continual flow of relevant information they offered. It was not possible, however, to measure the degree of distribution and use of this material.

With respect to this effect, therefore, the achievements of the project are sustainable, as they created the required conditions (although not sufficient) for forest management to be practiced as a productive economic activity. With respect to the sustainability of the results, the individuals who were trained have the potential to spread the information acquired, contributing to the development of new professionals familiar with the techniques of sustainable forest management, which may respond for a significant percentage of the coming generation of professionals.

The impact of the technical materials and research produced

Based on the online questionnaire (Appendix 9.5) applied, it was concluded that 54% of the community and business producers became aware of the technical materials and research produced by the IFT, 38% used the information disclosed in the technical materials (folders, bulletins, reports and pamphlets) and 54% used the information generated by the research (articles, theses, dissertations).



Graph 5. Application of the information generated by the technical material and research, respectively.

Among the students and members of the third and public sectors, 62% incorporate the information obtained from the research and technical materials produced by IFT in their activities.

In the comments section, the quality of the publications was also emphasized, in terms of their role in disseminating the methods and techniques (including influencing the way in which SFM is taught in Brazil) and in influencing public policies.

Challenges

With no long-term funding or strategies, the perspectives of continuing the researches at the same intensity as during the project are limited. In order for a cultural change in favor of the standing forest to take place in the whole region and not be restricted to development agencies, this initiative would have to continue, either through the technical and university education system or through independent organizations such as IFT.

In regard to technical materials on NTFP, these only focused on the harvesting of copaiba tree oil and the management of native açai palms, in addition to research on copaiba trees and titica vine. Moreover, the results of another four experiments which cover practices that have proven to offer savings and greater productivity through sustainable management have not yet been published.

Another issue was the little dissemination on the forest extension subject, similarly to the analysis of the 116 surveys conducted by the PPG7 Science and Technology Subprogram (SPC&T). The analysis confirmed that “without support from the subprogram, or support for the dissemination, very few of the researchers completed the communication cycle, which included communicating from the community of peers to the population which were the target of the projects” (ANTUNES, 2004, p. 73, cited by WEISS; NASCIMENTO, 2010, p. 141). In addition to this, the research was used minimally to address the demand to keep the forest standing while at the same time generating income.

4.3. Porto de Moz: the Itapeua community and its relationship with RESEX Verde para Sempre

Close to 80% of the area of the Porto de Moz municipality corresponds to RESEX Verde Para Sempre. Created in 2004, it covers an area of 1,289,362 ha, and is the largest Conservation Unit in Brazil (ICMbio, 2015). The population of the Reserve accounts for 42% of the inhabitants in the municipality (10 thousand people) distributed throughout 57 communities and 37 locations. Most of these inhabitants are concentrated in the communities/locations settled in the transition area between the lowlands and highlands or completely in the lowlands.

The RESEX was created due to the advancing deforestation, with the intent of controlling the predatory harvesting of timber and guaranteeing land tenure regularization and the permanence of the traditional communities. Its creation reduced the action of those responsible for the deforestation.

This initiated an environmental policy restructuring phase in conjunction with the families, given them shared access, use and management of the Reserve. The families developed productive activities such as artisanal fishing, subsistence agriculture and livestock raising. The main sources of community income are small scale buffalo farming, fishing and traditional farming (BITTENCOURT, 2013).

Timber is still harvested using conventional methods on most of the CU, but in Itapeua and five other communities new methods are being introduced. The communities have traditionally dedicated themselves to timber harvesting, mainly massaranduba, cedar, and freijo, but not non-timber products.

Two of the RESEX communities, whose residents make up associations, started preparing forest management projects in 2003. The two projects have directly benefited 62 families. Therefore, multiple use community forest management in the realm of RESEX Verde para Sempre is a valid alternative to support residents and their lifestyle, as well as to generate income based on the sustainable use of the forest in conjunction with environmental conservation (SFB, 2009).

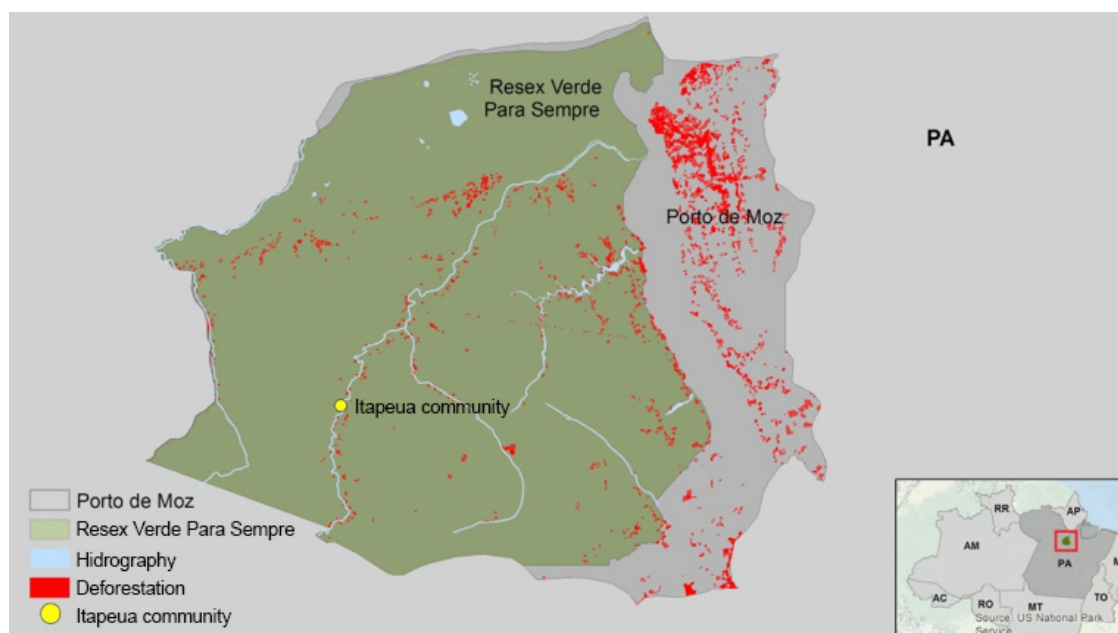


Figure 4. Porto de Moz Municipality and RESEX Verde Para Sempre.

Sustainable Development Center and the Itapeua community

The Sustainable Development Center (CDS) serves the Porto de Moz municipality and was founded by social movements (churches and labor unions), including 38 associations which currently make up the CDS Committee. They have 12 full time employees, who are responsible for supporting the communities and associations in the preparation of fishing, agriculture, timber harvesting and even education projects.

Up until 1994, work in the communities consisted of collecting Brazil nuts, massaranduba oil and latex. With the arrival of logging companies in the region – such as Madenorte – many community members were hired as day workers for conventional timber harvesting.

More recently, in 2011, IFT joined CDS to support technical assistance activities directed towards 6 communities, which enabled roughly 20 community leaders to take IFT courses on the identification of species and forest management in Paragominas. Also through CDS, the community of Itapeua received assistance from IFT to prepare a Community Forest Management Plan (CFMP) and from SFB to conduct an economic feasibility study on the plan for timber harvesting associated with corn crops and fruit trees. The CFMP was approved in 2014 by ICMBio. The purpose of the plan is to reinforce productive activities associated with multiple uses of the natural resources in the community area.

Through the project supported by the Amazon Fund, trainings were held in 2011 on decision making in regard to forest management and on harvesting techniques (inventory, identification of forest species, demarcating boundaries and

clearing trails). Roughly 20 people from the community took the courses at the time. For the leader of the Association of Sustainable Development of the Itapeua Community Harvesters and Producers, the course clarified the concept of reduced impact logging (RIL), since it had never been used before the trainings. Therefore, the support of IFT meant improvement of relevant management steps such as: forest inventory, directional felling and harvest cycling. In 2016, IFT supported an economic feasibility study and business plan for the açai palm chain, due to the harvesting potential in the area. The development of this activity could help local development and increase income in the communities.

With the CFMP planning and trainings, the first annual production unit (APU) was harvested in 2017. The harvest was estimated at 3100m³, at an average of R\$197.00/m³, at a total earning of R\$609,666.00. It should be noted that, if the net value is 20% of the total, R\$7,621 would be distributed to each of the 16 participating families. The rest would be re-invested into mechanical farming techniques for the 8 ha set aside for corn and watermelon crops, as requested to ICMBio and outlined in the CFMP. Despite the progress, the community is still assessing the best way to sell the production, since the first APU will be sold and, in conjunction, paid biweekly during a period of 4 months.

According to CDS coordination, many communities are working with açai palm or Brazil nuts based with support from IFT. Currently, the communities do their own inventories and share the information with other communities. According to CDS, no one goes into the forest to harvest in an indiscriminate manner anymore, destroying seedlings or relevant species for the birds and monkeys [local fauna.]



Pictures. (1) Mr. Evandro A. Pinheiro at the stock yard where the harvest of the first APU is stored; (2) Consultant Joseph S. Weiss at the central yard (port) of the first APU. Photo by: Bernardo Anache.

Despite all the progress in forest management and in the activities that promote subsistence and economic gains, the RESEX still faces challenges, such as invasions and illegal logging. During the past 10 years (2007-2016), 92.5km² were clear cut on the reserve. However, there has been a downward trend in the past 5 years, as seen on the table below. The creation of the RESEX in 2004 could have contributed to this, as well as interventions by SFB and NGOs, starting in 2003, and by IFT, starting in 2011.

Another challenge is the lack of support from state government agencies, such as EMATER and Ideflor-bio. As emphasized by the community, improvements to the identification of species and conversations between the organizations and communities are still required to reconcile demands of the environmental and productive agendas. Another ongoing relevant issue is the inexistent land tenure control, which allows the ranches to expand in the area to the southeast of the CU.

Conservation unit	Year (deforestation in km ²)										Progression of deforestation
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
RESEX Verde Para Sempre	18,0	11,6	17,2	12,9	8,1	7,3	2,4	7,5	4,9	2,6	

Table 4. Deforestation on RESEX Verde para Sempre

4.4. Project management and monitoring

Project planning and management were conducted by IFT technical management team and coordinated directly by the executive secretary of the Institute.

Technical management had an operational (and logistics) team, in addition to a financial management team, to support the semi-annual control of the project actions. Notably, the greatest demands involved carrying out IFT courses.

During the project period, a consultative group was created with members from the executive (technical) and financial areas to discuss general issues, including the actions and results of the Amazon Fund.

Within the scope of the courses held by the project, a technician was elected to be responsible for the documentation of each course based on standard protocols. At the end of each course, the technician could present the reports and could discuss improvements with the logistics and administrative teams. In addition to this, at

the end of each semester, meetings were held to evaluate the courses.

Positive points

Management of the project was conducted directly by four administrative technicians and one technician with information from the field. There was an executive secretary and executive assistant (operational) exclusively dedicated to the project, as well as the support of an administrative manager who was not solely dedicated to the project.

IFT financial and accounting managements were increased during the project. Improvements were implemented by means of a technical consulting directed towards revamping management, and internal flows and processes (such as rendering accounts, hiring processes and purchases) were optimized by using specialized software (RADAR). These improvements led to the updating of internal policies on these issues at IFT.

Within the scope of rendering project accounts, 80% of each disbursement was executed and, at the same time, the project accounts were rendered, before the next disbursement could be accessed. It was noted that BNDES always offered assistance with any doubts on how to perform certain activities.

Challenges

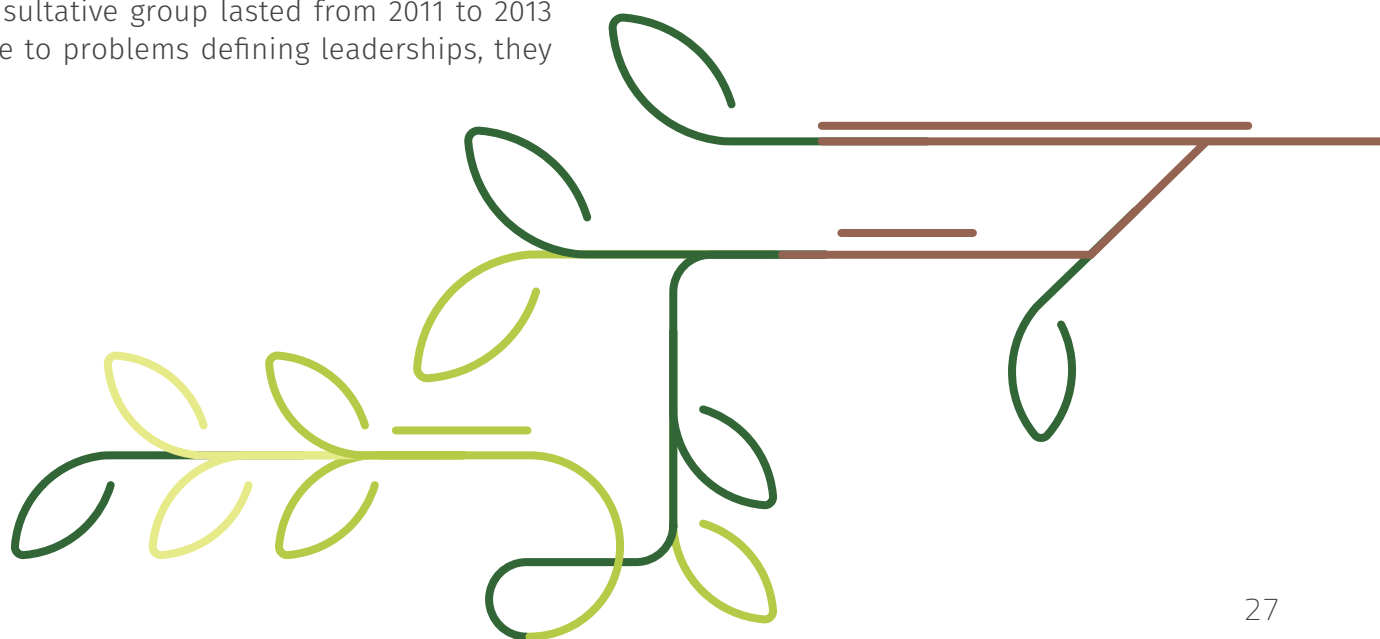
The consultative group lasted from 2011 to 2013 and, due to problems defining leaderships, they

lost ground at IFT. Before the consultative group was formed, the executive secretary established 2-year-long strategic plans, which were active during the Amazon Fund project. At the end of each year, the executive secretary would submit the targets for the strategic plan and the projects in progress to the Board of Directors, who would deliberate on the most relevant issues. The planning led to consensus on the implementation, but limited flexibility.

The greatest obstacles with the donor occurred at the start of the project, due to complications with the clarity of the Amazon Fund/BNDES forms.

The constantly changing procedures for rendering accounts also created problems for the project in terms of seeking improvements and greater dedication to lost information. For example, the submission of supporting documentation for the manufacture of products had to be completed physically. This obstacle was overcome with the formalization of document submission by electronic mail.

The expansion of CMFRB's capacity has resulted in challenges regarding the sustainability of the center, because when there is no demand for capacity building activities and idle time during a season, the maintenance costs for the center are too high. For greater sustainability, IFT needs to own their own center, where income from forest management can be generated.



5. CONCLUSIONS

The creation of CUs and demarcation of indigenous lands are among the most effective strategies to stop deforestation and forest degradation. The state of Pará has almost 10 million hectares of public forests with no set use determined, according to the SFB public forest registry (2016), that is, there is a huge amount of land available for the creation of CUs. If they are not allocated for this purpose, they could become an open door for illegal occupations and more deforestation. (see the supplementary study in Appendix 9.2)

As in FLONA Jamari, the most favorable environment for the supply of sustainable traceable and controlled timber is forest concession arrangements, because when there is effective control of forest management, government governance, traceability, land tenure security, transparency, protection from invasions, commitment and long-term contracts, there is an opportunity for the government to concentrate their efforts on keeping the forest standing. However, what has been seen, ten years after the first federal concession arrangements, are volumes that are considerably lower than the initial forecasts. There are many reasons, which include exaggerated initial production forecasts, management problems in the available FLONA areas, judicialization of all the bids issued, and lack of prioritization from the government on the issue (Appendix 9.2).

Forest management is an income alternative for the communities, which consolidates efficient forest use with local and regional sustainable development. However, community-based forest management still faces problems such as lack of land tenure regularization, difficult access to specific credit lines, slow SMP approval processes, lack of demands from the communities, small scale production, and precarious value chain infrastructure (SFB, 2016). In addition, the federal government gives very little priority to the issue.

Not to mention that, various plans and support policies for community forest management were established, but never left the drawing board. It is strategic and essential to establish ongoing management subsidies. In conjunction with the concession arrangements, the government sector should also concentrate their efforts on community forest management, conducted on Sustainable

Use CUs. Once approved, the community forest management plans take a long time to reach maturity. Therefore, they need resources to reinforce the social organization during the initial project phase and ongoing technical assistance to achieve more sustainable harvesting.

The project Dissemination and Improvement of Sustainable Forest Management Techniques took place during a period when logging activities were significantly reduced in Pará. Likewise, there was a decline in the logging industries, in the number of effective SFMP registered with SEMAS/PA and in the supply of unauthorized areas. Future scenarios indicate that it is unlikely that production will return to previous levels, unless consistent and structured forest policies are established based on forest concession arrangements; in this case, there is forest potential for the development of initiatives.

The project was a success as it exceeded the quantitative indicators of the direct effects from the monitoring plan. People interviewed stated that it would be better if the training was supplemented with more forest extension activities and follow-up of the operations for a few days to put the information learned into practice.

IFT is internationally known for forest management training and capacity building activities. It is the only institution of this type in operation that aims to keep the forest standing, faced with the still predominant culture of exploitation. This teaching ability should be maintained, since it contributed to the improvement of practical knowledge of forest techniques, including for those who work in the public sector, such as Ideflor-bio. However, the project alone does not have the ability to influence the decline in deforestation that has been seen in the municipalities in which the actions took place. Changing this culture and logic is only possible with government policies on forest management extension and development programs that are subsidized, consistent and structured.

It is hoped that this evaluation can be used for analysis beyond the project results, since forest management, in terms of scale, is one of the most important and relevant issues to keep forests standing and for the sustainable development of communities in the Amazon.

6. RECOMMENDATIONS AND LESSONS LEARNED

6.1 Recommendations for the specific interest stakeholders in this evaluation are:

To the direct and indirect beneficiaries:

- It is recommended that the communities in the CUs demand greater support from SFM forest development agencies and the simplification of SFM application processes, in order to integrate community management plans with the CU management plan, including the control activities provided for in the CU plan.
- It is recommended that associations and cooperatives reinforce the importance of transparency and impartial distribution of the project results.
- It is recommended that companies perform straightforward calculation methods for the results. In the case of purchasing of products from the communities, it is advisable to pay them according to existing price policies and to discuss this with the relevant stakeholders, strengthening their image.

To the Instituto Floresta Tropical (Tropical Forest Institute) - ITF and SFM forest development agencies:

- It is recommended that they develop work in the field of community technical assistance and forestry extension (ATEF), as well as in the monitoring and physical surveillance of the areas harvested, always delegating to the communities the responsibility for determining the actions to be taken, whether through timber or non-timber, multiple use (MUMP) or agro-silvo-pastoral management plans.
- To achieve greater impact in reducing deforestation and degradation, all stakeholders should focus their efforts on the adoption of SFM by communities in protected areas, including quilombos (former

slave settlements), and concession areas. The clear definition of geographic scope is recommended to encourage full deployment of the available resources.

- It is recommended that IFT define strategies to approach different stakeholders regarding the adoption of the management techniques, since there may be less chance for the settlements to adopt the management techniques than in the extractive reserves and national forests.
- On indigenous lands, it is recommended the use of SFM, provided it is approved by law and in the context of PNGATI (Environmental and Indigenous Land Management Project), which should include resources for capacity building activities and surveillance considering the rising threat to protected areas.
- It is recommended that IFT customize the course contents in order to offer on-line capacity building activities on topics that do not require field work.
- The applied research conducted by the Institute should incorporate synergies with the stakeholders, who can apply the hypotheses seen in the studies in the interest of SFM. In addition, better disclosure of the research findings is needed, so that they can be used to keep the forest standing and generate income.

To the Amazon Fund/BNDES Management Department:

- To achieve greater impact in reducing deforestation and degradation, it is recommended that efforts be concentrated on supporting concession areas and communities in CUs.
- It is recommended that projects that involve timber production are allowed a longer time frame for implementation, since the community forest management initiatives take a long time to reach maturity, require

ongoing technical assistance and resources to reinforce the social organization (particularly during the initial project phase).

- It is recommended that in the future new projects work with activities that complement the fight against deforestation, such as training, technical assistance, control and surveillance.
- Within the scope of SPC&T, the formation of research networks was supported, focusing on two priority topics for research development. For the topic “Management of terrestrial ecosystems and recovery of degraded areas”, support was foreseen for research on the sub-topic “Timber and non-timber products”, which resulted in studies directed towards monetary and non-monetary appreciation, market studies and value added FMPs and NTFPs. Based on the research conducted through the subprogram, it was confirmed that, without dissemination assistance, very little will become known.

Therefore, applied research support is recommended so that the communication and implementation cycle can be completed based on the relevant demands of the producers to keep the forest standing, associated with the generation of income until it returns to the stakeholders by means of extension.

- It is recommended that qualitative and/or quantitative impact indicators be selected for indirect effects in the monitoring plans. In doing so, the organizations will strive to attain them, with the potential of increasing the impact of the project.
- It is recommended that the Fund consider supporting future projects in which the beneficiaries themselves control the CUs,

based on methodologies validated by INPE and Imazon, with appropriate indicators and equipment and access to real-time information, so that they can also measure the area where RIL was implemented.

To the OEMAs and the Brazilian Ministry of the Environment (MMA):

As noted by Cardoso and Souza (2017), it is recommended that the SEMAS, other OEMAs and the MMA:

- Identify and define strategies to meet the technical assistance needs of the concession companies.
- Improve the CFMP licensing process, incorporating techniques to optimize the use and processing of images and facilitate their geographic analysis, in the interest of permitting and monitoring.
- Further simplify the SCFM application processes, integrating the management plan of the CU with the community plans and licensing.
- Maintain and expand the monitoring and control actions, including in protected areas.
- Provide georeferenced property data.
- Evaluate the forest species lists of the projects to monitor those that are overestimated during the preparation of management plans, in order to avoid “heating up” timber harvesting.
- Reinforce university education with forest management practices.
- Improve the identification of species and the dialog between organizations and the community producers, in order to reconcile environmental and productive agenda demands.

To the Amazon Fund Guidance Committee (COFA) and Amazon Fund Donors:

- It is recommended that the Committee make sure structuring indicators of indirect effects, both qualitative and quantitative, are adopted to optimize the impact of resources committed to projects.
- It is recommended participatory research on the potential effects of SFM, the extent of application of the technique and the reduction of obstacles to it be prioritized.
- It is recommended that new methods to measure the existing indicator regarding avoided deforestation be incorporated, based on quantitative and econometric studies of the deforestation process, in order to identify the main factors that affect it and other related indicators.
- It is recommended every project contain a component of command, control and surveillance. Therefore, the COFA could establish a norm for the responsible agencies (federal or state) to support these activities (with the possible participation of the communities and companies.) The same would apply to development and/or payment activities by environmental services, with participation of the Amazon Fund. In the case of the project proposals in which this is not defined, the Fund would be responsible for delegating who should head up the component.

6.2 The lessons learned were:

- The definition of a logical framework and its indicators is extremely relevant because

the monitoring plan is the core of a project funded by non-reimbursable resources, guiding the actors in its implementation.

- SCFM enabled a change in the relationship between the communities and the logging companies, empowering the communities to make cutting and sale decisions that were previously made exclusively by the logging companies.
- Projects that deal with trainings will have greater impact when they include technicians from the extension services and when they support technical assistance and extension activities.
- Accurate assessments based on forest research are still a challenge (especially assessments in regard to the ex-ante situation, that is, prior to the project) because of the limited project duration when compared to the life span of the trees.
- Projects driven by community demands are more successful. For example, there is an unsatisfied demand in the communities for support for NTFP projects and Multiple Use Management Plans (MUMP), as well as support for agro-silvo-pastoral systems.
- In some companies in which IFT-trained individuals work, there is often some resistance to change, and they generally regard sustainable practices as not palpable, so that they continue to disregard proper cutting cycles and practices.
- It is not always economically feasible for the beneficiaries to consolidate value chains. On the contrary, it is seen that the sale of logs often obtains better results than the sale of timber products.



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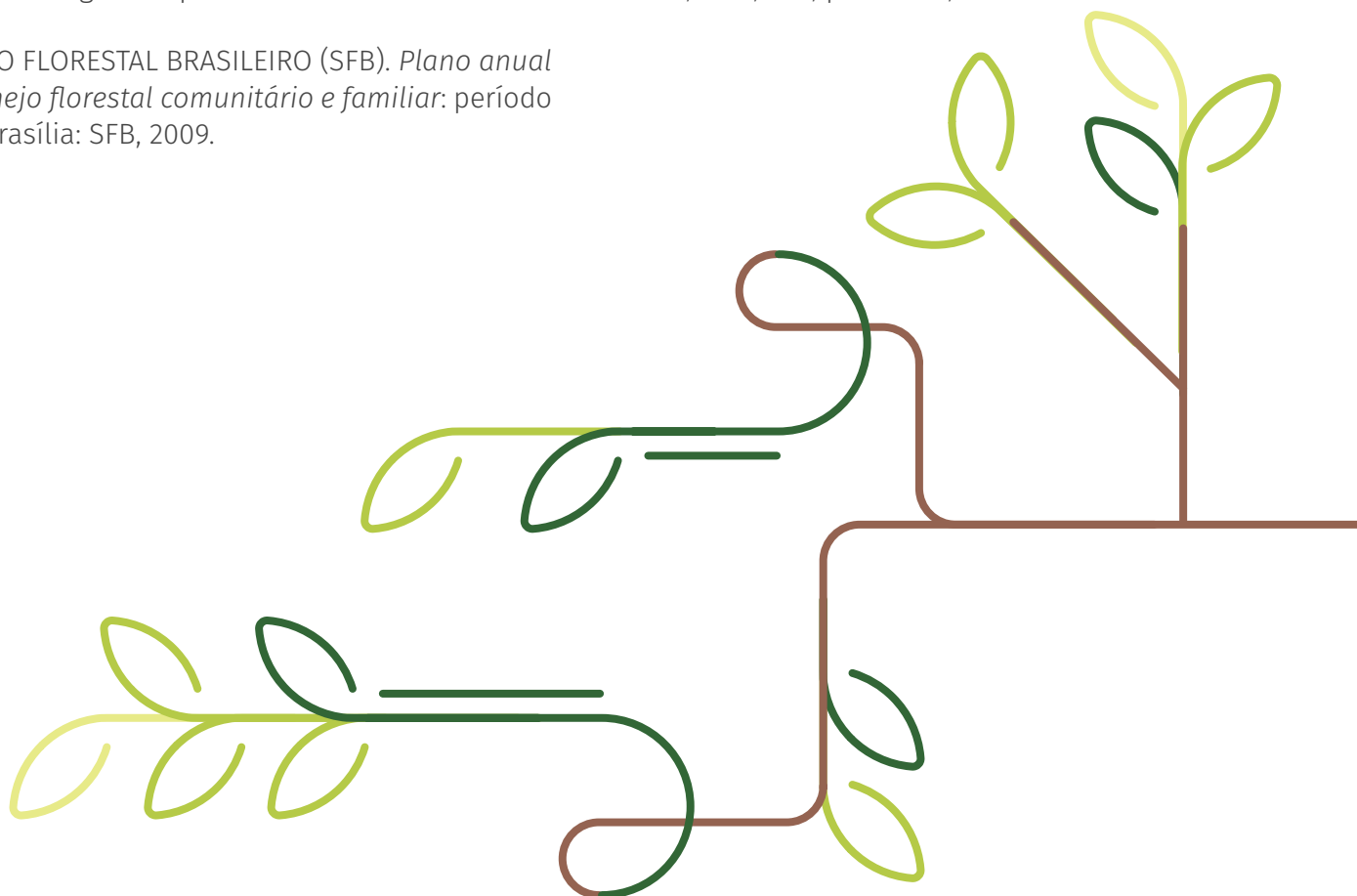
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8. GLOSSARY

- Technical Assistance and Rural Extension (ATER):** Technical Assistance and Rural Extension was formally implemented as a policy by Law 12188/2010. It consists of services destined to family agriculture, based on principles and guidelines geared towards sustainable development, social participation and agroecological production. Technical assistance can be accomplished in various ways, including guidance on planting, harvesting, livestock farming, new technology, etc. The definition for technical assistance and forestry extension (ATEF) is similar.
- Authorization for Timber Harvesting (AUTEF):** Authorization for Timber Harvesting is a document issued by SEMAS, which allows timber harvesting in a CA, as per the limits specified in the Operational Plan.
- Capacity building activities and training:** IFT considers capacity building activities as topics which are directed towards the introduction to relevant forest management issues. Trainings are aimed at disseminating practices and techniques for sustainable forest management (Appendix 9.4).
- Document of Forest Origin (DOF):** the Document of Forest Origin implemented by MMA Directive no. 253/2006 represents the mandatory permit to control the transportation of the forest product and native forest sub-product, including native vegetable charcoal.
- Forest Management (FM):** according to the Brazilian Forest Service, “forest management is the rational and environmentally proper use of forest resources. Management is an economic activity opposed to deforestation, since the forest is not totally removed and even after use, the location keeps its forest structure. Proper management follows three essential principals: it shall be ecologically correct, economically feasible and socially just. The principle of the reduced impact logging (RIL) technique - the main forest management tool - is to extract products from the forest in such a way that the impacts generated are minimal, enabling maintenance of the forest structure and its recovery, through the stock of remaining plants. Diversifying production is one of the most important principles of the sustainable use of forest resources.” (Available at: <http://www.florestal.gov.br/fndf/68-fomento-florestal/475-perguntas-frequentes-sobre-o-manejo-florestal-comunitario>).
- Sustainable Forest Management (SFM):** pursuant to Law 11284/2006, sustainable forest management corresponds to the use of the forest to obtain economic, social and environmental benefits, respecting the sustainable mechanisms of the ecosystem being managed. It also considers the use of multiple timber species, non-timber products and sub-products, as well as the use of other forestry goods and services.
- Forest Management and Reduced Impact Logging (FM-RIL):** covers a group of planned activities, in order to harvest forest products with minimal damage to the remaining forest. It involves planning the pre-harvesting activities (macro-planning, delimitation of areas, forest inventory, data analysis, planning and construction of yards and forest roads), harvesting activities (selection and marking of trees to harvest and seed bearing trees, directional tree felling, dragging plan and log dragging, yard operations and forest transport) and post-harvesting (silvicultural treatments to catalyze forest recovery, evaluation of damage and harvesting waste, monitoring of forest growth and infrastructure maintenance) in accordance with the characteristics of the forest and region.

9. ANNEXES

9.1. CANCUN SAFEGUARDS

1 Actions complementing or consistent with the objectives of national forest programs and other relevant international conventions and agreements

1.1. Is the project aligned with PPCDAm and state plans for deforestation prevention and control?

The Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm) and the Plan for the Prevention, Control and Alternatives to Deforestation of the State of Pará, provide, as part of the Sustainable Production Activities, the promotion of capacity building activities in forest management in the Amazon.

The IFT project promoted capacity building activities, trainings and awareness raising directed towards sustainable forest management, mainly with communities, students, public servants and companies. This involved practical trainings on forest management on top of capacity building activities and awareness raising events (the activities and events were also offered to decision makers). Therefore, the project was aligned with the policies proposed in PPCDAm and the State Plan.

1.2. What other federal government policies or international agreements is the project aligned with? In what aspects?

With the approval of the Federal Law on the Management of Public Forests (Law 11284/2006), guidelines were established to increase governance and funding for forest management. The IFT project reinforced the implementation of SFM through capacity building activities and trainings on forest management, helping to reduce the existing bottleneck of skilled manpower to implement good forest management practices.

1.3. Has the project contributed or may come to contribute directly or indirectly to the reduction of emissions from deforestation or forest degradation? In what way?

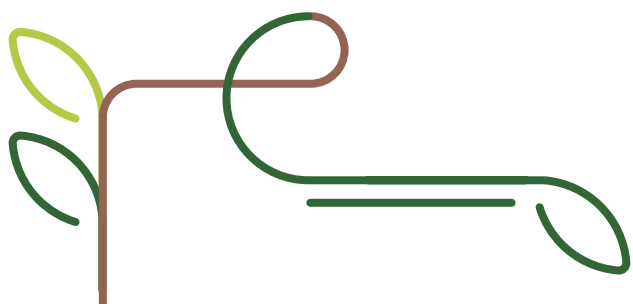
The project was prepared based on the UN Conference on Climate Change (COP 15) of 2009 in Copenhagen, when Brazil assumed the commitment to reduce greenhouse gas (GHG) emissions between 36% and 38% by 2020. Therefore, the IFT proposal supplemented the actions of combat and control actions of the state and federal governments, with management as the economic alternative to traditional forest harvesting with management plans or forest concession arrangements.

With the support from the Amazon Fund, capacity building activities and trainings were maintained between 2011 and 2015, mainly on sustainable forest management and reduced impact activities, which could be seen as a contribution to reduced degradation, deforestation and emissions.

2 Transparent and effective national forest governance structures, with a view to national sovereignty and national legislation

2.1. To what extent has the project promoted the articulation between various actors (public sector, private sector, third sector or local communities)?

IFT was known for their in-depth expertise on the subject of sustainable forest management. Its relationship with the public and private sectors, as well as the communities, was strengthened through the project. CENAFLO supported the realization of the events and made the technicians from IBAMA, ICMBio, labor unions and universities aware of the importance of becoming familiar with the proposed techniques. The logging companies Caterpillar, Cikel and Stihl supported IFT with the loan of machinery to conduct the trainings. Additionally, IFT supported communities such as the ones in RESEX Verde para Sempre in the preparation and execution of management plans.



2.2. To what extent has the project contributed to strengthening public instruments and forest and territorial management processes?

The project promoted capacity building activities and practical trainings for the technicians of SEMAS, EMATER, Ideflor-bio, municipal environmental agencies, in addition to internships for university students in their final years, who for the most part only have access to theoretical knowledge of forest management.

These events were and are fundamental for the management of forest resources, since after acquiring the knowledge, enforcement agencies such as Ideflor-bio strengthened their ability to manage the existing and future forest concession arrangements. EMATER technicians are reproducing the capacity building activities conducted in the communities of the Xarapucu State Environmental Park, contributing to strengthen activities such as the production of açaí palms and other products with economic potential.

3 Respect for the knowledge and rights of indigenous peoples and members of local communities, taking into account relevant international obligations, national circumstances and laws and noting that the UN General Assembly adopted the United Nations Declaration on the Rights of Indigenous Peoples

3.1. To what extent has the project has influenced the constitutional rights associated to the possession and formal destination of land in its area of activity?

The project operations made it possible to increase knowledge on management tools that guarantee land tenure to local communities. An example of this was the awareness raising activity on the potentials and weaknesses of forest resources, as well as the trainings on the practical and more sustainable management of these resources at RESEX Verde para Sempre, in Porto de Moz/PA.

3.2. To what extent has the project influenced the sustainable use of the natural resources in its area of activity?

One of the direct effects of the project was to support activities that keep the forest standing. IFT influenced the sustainable use of the forest resources based on trainings and dissemination of best practices in terms of management in forest areas, promoting the balanced use of these resources among the local communities, as well as among workers, such as machine operators and small producers. The debate on how to manage timber resources so they are not depleted during a single harvesting period progressed at the locations supported by the project.

3.3. If the project had as direct beneficiaries indigenous peoples, traditional communities or family agriculturists: were their socio-cultural systems and traditional knowledge considered and respected throughout the project?

The project supported the local communities of RESEX Verde para Sempre, Terra Grande Pracuúba and FLONAS Saracá and do Jamari. In this context, the information offered and the work with the communities were directed towards improving existing practices in timber activities. This took place, for instance, in the Itapeua community in the RESEX Verde para Sempre. Therefore, to the greatest extent possible, community knowledge was respected, and a learning process that involved traditional and scientific knowledge was conducted.

3.4. Are there any effects that interfere with the traditional way of life of these groups? What kind of effects: in the economic or social organization, or in the use of available space and resources? In what way do they interfere?

As posted in the previous question, it was evident that the local communities involved in the project took advantage of the positive effects of the economic organization and the use of areas for managing timber resources. This was

evident during the field mission conducted in the community of Itapeua, where the capacity building activities and trainings influenced a change in the use of the community production areas within the scope of the management plan.

4 Full and effective participation of stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of Decision 1 / CP 16

4.1. How did the project guarantee prior consent and the local or traditional selection of representatives for the beneficiaries (in particular indigenous peoples and traditional communities)?

Invitations were sent (e-mails, telephone calls or face-to-face conversations) to the community leaders beforehand describing the courses or activities and profile of the participants, which led to deliberations by the communities on who should participate in the events. Another factor taken into consideration is the dedication of the project to priority regions, that is, despite the demand for courses at various locations, the criteria included the place of residence of the future beneficiaries.

4.2. Which participatory planning and management tools did the project apply during planning and decision making?

Project planning and management were conducted by the IFT technical management team and coordinated directly by the executive secretary of the Institute. The management team included an operational team in addition to a financial management team, which was responsible for the semi-annual control of the actions proposed by the project. A consultative group was created with members from the executive, financial and technical areas to discuss issues raised within the institution, including the actions and results of the Amazon Fund project.

4.3. In case of projects with economic purposes: were any benefits arising from the project accessed in a fair, transparent and equitable way by the beneficiaries, avoiding a concentration of resources?

It does not apply to this project.

4.4. To what extent has the project provided the general public and its beneficiaries with free access to and easy understanding of information related to project actions?

IFT produced and disseminated materials throughout the project. In addition to this, the description of the courses held is available on their website (<http://ift.org.br/cursos/>). Accesses to the website were documented from 25/Apr/2013 to 31/Dec/2014, confirming 43,621 accesses by 12,100 users. (IFT, 2015).

4.5. Was the project able to set up a good monitoring system for results and impacts? Has the project systematically monitored and disclosed the findings and their effects?

Monitoring was conducted to obtain quantitative results. The people conducting the project believe that follow-up of the positive impacts related to REDD+, deforestation and reduction of forest degradation could have been conducted.

IFT conducted an evaluation at the end of the project, as well as at the end of each on-site training and capacity building activity. In face of the size of the project, it is believed that the results might have been more significant, especially with the use of the media, the IFT website and publications. For example, conducting evaluations at the end of each year could have given a better understanding of the impacts that trainings and publications had in the activities of the beneficiaries.



5 Actions consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 Decision 1 / CP 1611 are not used for the conversion of natural forests but rather to encourage the protection and conservation of natural forests and their ecosystem services and to improve other social and environmental benefits

5.1. How did the project contribute to the expansion or consolidation of protected areas?

As reported in topic 3, the target audiences of the project were conservation units, including RESEX Verde para Sempre, Terra Grande Pracuúba and FLONAS Saracá and Jamari. The capacity building activities and trainings offered greater knowledge on forest management. For example, IFT assisted the Itapeua community in the RESEX Verde para Sempre with the implementation of their management plan. The strengthening of communities in protected areas through such trainings contributed to their consolidation.

5.2. How did the project contribute to the recovery of clear cut or degraded forest areas?

The project did not directly contribute to the recovery of the clear cut or degraded areas, but rather contributed to the better understanding and application of sustainable forest management. This was achieved through awareness raising of decision makers and capacity building activities and trainings for the technicians of environmental agencies and the private sector.

5.3. In the case of restoration and reforestation activities, did the methodologies used prioritize native species?

It does not apply to this project.

5.4. To what extent has the project contributed to establishing recovery models with an emphasis on economic use?

The trainings and capacity building activities offered by the project were focused on reduced impact logging (FM-RIL), an alternative to conventional logging management. This type of management is conducted in three phases – pre-harvesting, harvesting and post-harvesting – which, through detailed planning, enables sustainable harvesting, combining economic development of the communities or companies and resilience of the species in the areas harvested.

6 Actions to address the risks of reversals in REDD + results

6.1. Which factors constitute risks to the permanence of RED + results? How did the project address them?

The flexibility in relation to the recovery of degraded areas outlined in the Forest Code (Law 126331/2012) as well as the disregard for the public forest management law (Law 11284/2006) could have a negative impact on the actions promoted by the project, with respect to sustainable practices of forest harvesting. Based on this, the project promoted actions in conjunction with the public and private sectors, as well as universities, in the interest of disseminating information on less harmful practices for the environment and the harvesting of timber resources.

7 Actions to reduce the shift of carbon emissions to other areas

7.1. Have there been a shift of emissions prevented by the project to other areas?

It does not apply to this project.

8 Poverty reduction

8.1. To what extent has the project contributed effectively to economic alternatives that value the standing forest and the sustainable use of natural resources?

IFT approach, directed towards capacity building activities and trainings on sustainable forest management, contributed to increasing the knowledge and access to information on its good practices, as well as its economic, ecological and social advantages, in the interest of conserving natural forest resources.

8.2. To what extent has the project positively influenced on the reduction of poverty, social inclusion and improvement of the living conditions of beneficiaries (in particular: traditional communities, settlements and family farmers) who reside in the area of the project activities?

The project has given traditional communities the possibility of having positive economic, social, and environmental outcomes from activities that value the standing forest. The most important point is that many small farmers were empowered to change their relationship with the logging companies, and have become solely responsible for the cutting and selling decisions. Also in regard to the communities, the most evident outcome is the dramatic increase in the number of communities which conducted management projects during and after the completion of the project activities. It is estimated that, during 2018, the Itapeua community will increase each family income by R\$7,621⁹ with the timber sold. This could be supplemented with technical assistance, extension and future forest credits.

8.3. Has the project succeeded in promoting and increasing production in value chains of timber and non-timber forest products originating from sustainable management?

It does not apply to this project.

8.4. In the case of a project with a scientific or technology development component, did this contribute to the construction of a development model adapted to the region?

By teaching, disclosing and publishing detailed information on techniques of sustainable forest management and reduced impact logging (RIL), the project contributed to the formulation of a development model suited for the region.

9 Gender Equality

9.1. Has the project succeeded in integrating gender issues into its strategies and interventions or addressed the issue in an independent way? How?

The project did not include gender issues in its strategies.

9.2. Was there separation by gender in data collection for project planning and monitoring?

Women represented 15% to 25% of the participants in the courses and events offered to universities, technical schools and communities. Many of women who work with management activities had contact with IFT. The participation of women is recorded on all the attendance lists and they acted alongside men in the courses and awareness raising events offered.

9.3. How did the project contribute to gender equity?

IFT witnessed an increased demand by women candidates for the courses and events. The percentage of females among the participants was 22% in 2011 and 27% in the years 2013-2014, without IFT implementing any special policy in this direction. In addition to this, women held important positions in the project, such as Dr. Espada, project engineer. Not so long ago forestry engineering was considered a male occupation. Today, university courses have a balanced male to female ration, and women show a clear vocation for the profession.

⁹ The calculation made to reach the average amount of family income is as follows: R\$/m³ x Community income % of the sale amount x m³ of timber / number of participating families x 20% x 3,100m³ / 16 families = R\$ 7,621/ family

9.2. SUPPLEMENTARY STUDY TO THE EVALUATION: Diagnosis on forest management in the operating area of the IFT - Amazon Fund project. State of Pará Case

Author: Antônio Carlos Hummel¹⁰

1. Introduction

This brief diagnosis on the state-of-the-art of forest management in the target areas of the project (in particular for the state of Pará, where most of the project was concentrated) between 2010 and 2016 was prepared as a complement to support the present evaluation.

The methodology consisted of interviews with environmental agencies and with stakeholders involved with the timber sector and with capacity building activities on forest management, in addition to consults to the project evaluation documents and a literature review. A field trip was conducted for the interviews between January 23rd and 25th, 2018, during which conversations were held with government stakeholders in the state and relevant actors with respect to the IFT project.

2. Context setting: Forest management, capacity building activities and trainings - Amazon

Since the 1990s, all diagnoses indicated that forest management techniques had not been adopted for harvesting processes in the Amazon forest. In the beginning, harvesting was for hardwood in the lowlands due to easy access and transportation. Since the 1970s, with the construction of major roadways and the progressive deforestation for agricultural purposes, production increased dramatically in the forests on highlands. Then there was industrialization associated with the expansion of the agricultural frontier, which destroyed the forests in the southern and central region of the country. In those circumstances, timber was a sub-product of deforestation and there was a lack of standing forests for forest management.

The most symbolic case is that of the Brazilian pine tree (*Araucaria angustifolia*). The National Pine Tree Institute was created to protect this single

timber species, but it has not been able to avoid the depletion of its commercial stocks. This is an important case, because it signals that history is repeating itself in the Amazon.

This uncontrolled progression of timber production in the Amazon, in conjunction with the disclosure of deforestation rates in the Amazon and with the requirement to comply with article 15 of the former Forest Code of 1965 (which established harvesting according to sustainable forest management), led the government to standardize, discuss, plan, prepare programs and execute various measures and projects, particularly in the 1990's.

One measure that was already in place was to increase the establishment of National Forests with the primary objective to provide timber in a controlled way. It was only in 2006, with the establishment of the public forest management law, and consequent regulation of forest concession arrangements, that harvesting in sustainable use conservation unit began.

In face of the fact that forest management and capacity building activities on it were practically inexistent, that command and control instruments are inefficient, that there is a lack of information on the costs and benefits of management, that demonstrative models are absent, economic instruments to encourage sustainable use are inadequate and existing public policies are insufficient, ProManejo (Forest Management Support Project) was created, within the scope of the the Pilot Program to Conserve the Brazilian Tropical Forest – PPG7. The project had four components directly related to the above mentioned problems. It should be noted that the adoption of forest management measures separated from public policy instruments have a very limited impact.

At the same time, distortions in public policies still have a negative effect on forest management and favor deforestation and predatory harvesting

¹⁰ It gave general direction to the Brazilian Forest Service, and Brazilian Ministry of the Environment.

of timber, even after various diagnoses, programs, laws and projects.

We will limit considerations to ProManejo's support for capacity building activities and training practices related to institutions which are aligned with the subject.

In 1999, the Instituto Floresta Tropical (Tropical Forest Institute) - IFT was the only organization who offered these practices albeit with limited capacity, based on the development of timber harvesting models with reduced impact logging (RIL). IFT started their operations in 1995, in an area donated by a logging company (CIKEL) in the municipality of Paragominas, in Pará.

In addition to their staunch support to IFT, ProManejo influenced and supported the creation of 3 Forest Management Training Centers: a) the Forest School in SINOP, Mato Grosso, in association with SENAI and a private company; b) PROMATEC in the state of Acre; and c) the Forest Management Reference Center in Mil Madeireira, Itacoatiara, Amazonas. They also supported INAN, a Rotating Center of capacity building activities located in Belém. Currently, only IFT is still in operation.

The National Forest Management Support Center – CENAFLORE was created in order to promote sustainability of the capacity building activities and trainings on forest management, to support and coordinate development and forest extension activities and to follow-up, supervise and support the training centers mentioned above. The Center was first handled by IBAMA and then transferred to the Brazilian Forest Service (SFB).

At the time, around 2006, the need for an area for the installation of IFT was being discussed, in view of the depletion of the forests in the area where the Center is currently installed. Various options were discussed, but never got off the ground. At the same time, the actors involved weighed the need for a permanent location for the Center in comparison with the option of off-site or

rotating trainings using existing infrastructures. In fact, the fixed costs of a forest management Training Center are considerably high, have a low financial sustainability and basically depend on the donation of non-reimbursable resources (examples of donors: Amazon Fund, ProManejo, ITTO and others).

2.1. Illegal timber harvesting

The statistics are scarce, flawed and the percentage of native Amazon timber that is illegally harvested has never corresponded to less than 60% of all harvesting. With stricter enforcement during certain periods, the fight against harvesting on public land and the creation of conservation units have reduced this rate from time to time.

For various reasons, including the current political and economic situation of the country, there is a general perception that traditional practices are not effective, whether by the application of administrative fines or by sanctions applied to illegal timber harvesting. There are many causes of illegal harvesting:

- a) lack of governance for public (federal and state) land, allocated or not, which amount to over 60 million hectares, making way for illegal occupations;
- b) operational and logistics problems for enforcement operations in the region, due to precarious access conditions;
- c) abundance of raw forest material;
- d) high consumption demand in local markets;
- e) high rates of illegal deforestation providing raw material;
- f) impunity; and,
- g) emphasis on the control of timber transportation documents, which is not coordinated with licensing process and not integrated with the state tax collection systems.

In addition to all these, there is a lack of government incentive for those who want to abide by the law, not only environmental, but also land tenure, taxation and labor laws. Another huge drawback is the long time frames and bureaucratic forest operation licensing.

Currently, “false legality”, based on virtual credits, is common, which raises the possibility of “heating up” illegal timber.

The scenario described above is not appropriate for fighting against illegal harvesting of Amazon timber. The situation requires new efforts to strengthen the concession and forest management policies and, at the same time, effectively put the fight against illegal timber harvesting on the agenda.

3. Findings: Timber sector in the state of Pará

3.1. 3.1. Timber production

Pará and Mato Grosso do not use the Document of Forest Origin (DOF) system made available by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) to control the flow of forest products. They use a system called the Forest Control System (SISFLORA). Despite legal requirements, this system is not completely integrated with the federal system, causing problems in the generation of data, taxation and transparency.

IBAMA is implementing the National Forest Control System - SINAFLOR in order to integrate all the forest control systems, including the SFMP licensing and clearing authorizations (deforestation) as stated in the new Forest Code.

The assessment and use of the data from the timber sector is not an easy task. The statistical data of the sector and its transparency are limited or very weak. There are significant differences in the numbers collected (when available) by the environmental agencies (IBAMA, State Environmental Agencies - OEMAs), Treasury Departments (SEFAZ) and the Brazilian Institute of Geography and

Statistics (IBGE), which jeopardizes the adoption of good public policies. The last general survey of the sector was in 2009 (Hummel *et al.*, 2010), produced by the Brazilian Forest Service - SFB and the Amazon Institute of People and the Environment - Imazon. In other words, there is a gap of almost ten years in the systemization, field surveys and analyses on the timber sector in the Amazon. With the adoption of computerized control systems (starting in 2006), one would have expected greater availability, integration, reliability and transparency in relation to these data and information.

The fact is that there was a significant reduction in the consumption of logs in the Legal Amazon between 1998 and 2009. In 1998, the log consumption was 28.3 million cubic meters, falling to 24.5 million cubic meters in 2004 and lastly to 14.2 million cubic meters in 2009 (Hummel *et al.*, 2010). This expressive drop in the consumption of logs of roughly ten million cubic meters is due to three main reasons: the replacement of tropical wood with other products such as iron, PVC, aluminum and MDF (planted forest); increased enforcement, based on the implementation of the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAm); and, the cancellation of Forest Management Plans on public lands, which were previously approved based on unreliable possession documents.

This decline remains accentuated, as is shown by the production of 10,451,927 m³ in 2013 and 9,154,111 m³ in 2014 (source: DOF, SISFLORA). According to some estimates, for 2017, this production should be roughly 7 million/m³. Another factor that may have contributed to this decline is the economic crisis in the country.

Pará, along with Mato Grosso and Rondônia are, historically, the largest producers of Amazon timber. The first state follows this decline in timber production in the region. In 2010, 3,715,322 m³ of logs were produced and, in 2015, a volume of 1,947,710 m³ (Table 1), indicating a reduction of 47.6% in production.

Year	Volume of logs (m ³)						Percentage variation 2010-2015
	2010	2011	2012	2013	2014	2015	
Volume	3.715.322	3.697.315	3.375.491	3.166.361	2.946.764	1.947.710	-47,6%

Table 1 - Timber production in PA Source: Document of Forest Origin (DOF) and SISFLORA, SEMAS, PA

Flota or Tract	Volume of logs (m ³)
Mamuru - Arapiuns	279.329,98
Paru	252,439,24
Overall Total	531.768,48

Table 2 - Production in the State Concession Areas 2012-2017. Source: Ideflor – bio

3.2. Number of timber industries

The number of logging industries (sawmills and rolling mills), as expected, have also fallen over the past few years. In 2009, there were 1067 establishments, and in 2017, just 346 industries, according to CIMAM/SEMAS (Integrated Center of Environmental Monitoring of Pará), based on data of the Integrated System of Monitoring and Permits (SIMLAM), with effective environmental licensing from the state environmental agencies. In 2009, the most significant timber centers were in Paragominas, Tailândia, Tomé-Açú, Ulianópolis and the Pará Estuary zone (Hummel et al., 2010). The little information available indicates that these centers continue to be the most important.

In practice, CONAMA Resolution 411/09 is not applied. In a study conducted in 2013, coordinated by SFB, Fanzers indicates that there is very little enforcement of the industry and the criteria used are not very strict in relation to origin of the raw forest materials, the renewal of permits and proof of operation with periodic inspections.

The current environmental licensing system for the log processing industry, with different rules among the states and insufficient transparency, does not favor the fight against illegal operations.

3.3. Forest Concession Arrangements in Pará

Pará has progressed, contrary to other states, in the process of forest concession arrangements by creating an institution and establishing norms. A tracking system, the use of more technology for remote monitoring of the SFMPs and transparency are still needed. Table 2 shows the areas and volumes produced until 2017, by public tract of land and State Forest (Flota).

In the National Forests (FLONAS), SFB has concession arrangements in Saracá-Taquera and Altamira. Table 3 presents the volumes produced over the years. The agency has a tracking system in operation and has invested heavily in monitoring technology for the SFMPs.

Flona	Volume of logs (m ³)					
	2012	2013	2014	2015	2016	2017
Saracá-Taquera	496	32.737	37.729	57.214	101.237	115.053,33
Altamira	0	0	0	0	0	59.505,05
Overall Total	496	32.737	37.729	57.214	101.237	174.558,38

Table 3 - Production of the federal concession areas in PA, by FLONA. Source: SFB

The federal forest concession areas, handled by SFB, created great expectations when they were launched (2006 to 2009) in relation to the volumes that would be produced. However, what has been seen, ten years after the fact, are volumes that are considerably lower than the initial forecasts. There are many reasons, for example: exaggerated initial production forecasts, management problems in the available FLONA areas, judicialization of all the selection processes and lack of prioritization by the government on the issue.

However, forest concessions may be the only arrangement with the ability to supply sustainable and traceable timber. In forest concession areas there is effective control of forest management, effective public governance, traceability, land tenure security, transparency, protection from invasions and long-term commitments and contracts.

3.4. Sustainable forest management plans

During the period of 2016 to 2017, SEMAS migrated their Forest Control System - SISFLORA I to SISFLORA II, which enabled a re-evaluation based on technical criteria of the active SFMPs.

According to information from an interview at CIMAM (2018), from the total of 1911 SFMPs in the system, 1430 were “excluded”, 120 suspended and only 361 were considered acceptable or active (SIMLAM, 2018). Table 4 presents, as expected, a significant reduction in the number of Authorizations for Harvesting (AUTEFs) issued.

Year	AUTEFS ISSUED				
	2013	2014	2015	2016	2017
AUTEFs	289	276	173	140	99

Table 4 - Number of Authorizations for Harvesting (AUTEF). Pará. (2017). Source: SISLAM, SISFLORA – SEMAS.PA

The state of Pará, since 2009, relies on the work of Imazon and its SFMP monitoring systems (Monteiro et al., 2009 to 2013). This is an essential instrument to understand the illegal dynamics of the SFMPs in the state, and to support enforcement processes. Currently, Imazon maintains the Timber Harvesting Monitoring System (SIMEX).

Cardoso and Souza (2017) detected in Pará “105,298 hectares of forests being cleared for timber harvesting in 2015-16, of which 59,421 hectares (56%) were authorized for forest management and 45,877 hectares (44%) had no authorization. Compared to 2011 - 2012, [there was] a reduction of [13,544 ha] of unauthorized harvesting and an increase of 70% of authorized harvesting, inverting the ratio seen before when unauthorized harvesting predominated.” This is a positive fact, but it does not ensure that SFMPs are being executed in accordance with the planning or with technical quality.

Greenpeace (2017) lists the following ways to fraud the control systems of the environmental agencies:

- a) cutting trees in an area that has already been harvested or cleared;
- b) falsifying the forest inventory, overestimating the number or volume of valuable trees in the area;
- c) creating management plans in which there are species with commercial value only to generate credits and transportation documents;
- d) issuing more credits than the plan allows; and,
- e) issuing false credits in areas that never existed.

Based on the SIMEX experience, Cardoso and Souza (2017) suggested that SEMAS/PA adopt measures such as: improving the SFMP licensing and monitoring process, increasing the use of new remote monitoring tools that are available; publicizing the SFMP georeference data to the public, thus increasing transparency; increasing enforcement in protected areas and assessing the lists of forest species in forest management projects.

Greenpeace (2016) suggested that the Brazilian government and state governments of the Amazon states, among other actions, immediately conduct a review of the approved SFMPs in the Amazon since 2006, applying stricter rules to the analysis and approval processes. Additionally, suggested the implementation of a control system that is more robust, transparent and nationally standardized (including monitoring and law enforcement) and an increment in the power of the federal and state environmental agencies through infrastructure improvements and investment in monitoring and enforcement, in addition to the application of the due penalties to those condemned for forest crimes, thereby guaranteeing that the Amazon timber is produced legally and does not contribute to deforestation, forest degradation, loss of biodiversity or generate negative social impacts.

Feitosa (2012) conducted a survey in SISFLORA/ SEMAS and found sixty (31 active) SFMPs in the category of community and family, of which the majority were settlement projects and a small

number on quilombo lands and sustainable use conservation units (FLONAS and Extractive Reserves – RESEX).

These numbers have not been updated in SISFLORA. However, the people interviewed indicate that very few SFMP have been successfully applied or are still active in 2018.

On a large scale, there is the Ambé Project in FLONA Tapajós, executed by the Mista Cooperative of FLONA Tapajós (CONFLONA), with forest certification. On a smaller scale, there is a project in RESEX Verde para Sempre. For settlement projects, there is no record of successful projects, despite various attempts of pilot projects.

The implementation of ProManejo generated a series of lessons learned. In relation to Community and Family Management, for example, the first requirement is social organizational support as well as ongoing technical assistance even after the non-reimbursable funding of the project has been completed. In addition to this, the feasibility of these management plans is low, and they require larger scale production, long maturity terms, high investment and permanent subsidies.

As mentioned above, there has been a reduction in the number of forest management plans, which is also related to the decline in accessible areas, in particular for the private sector. Over the years, the private sector has taken advantage of the weaknesses in the environmental agencies and used precarious possession documents for federal and state public lands to approve their SFMPs. A spree on illegal occupation of public land. Starting in 2003, IBAMA began a process to fight against these frauds and the states, a little later with the decentralization of forest management, also began improving the analysis of land tenure documentation.

Currently, as is the case of the state of Pará, there has been a dramatic reduction of areas with regularized land tenure situations where the private sector could implement forest

management plans, except the areas allocated for forest concession bidders. This “deficit” of areas has led the sector to seek allocated public lands, such as Settlement Projects, for their projects. The flimsy management and lack of organization in the settlements has led to the construction and approval by SEMAS of “collective” SFMPs that in reality are handled by “middlemen” and have no community or collective elements. Furthermore, the plans (with a single Annual Production Unit - APU) are not very sustainable, since the middlemen buy the timber from the area and harvest in a single cut. The Standing Forest project (2011) conducted various studies involving these relationships between companies and communities during the implementation of forest management in the state of Pará.

According to Pereira, D. et al. (2011), Pará has approximately 208 thousand km² of areas with forest management potential. This potential includes private areas, communities and in particular National (FLONAS) and State (FLOTAS) Forests.

At the time, Pereira et al. (2011) suggested some alternatives to guarantee the supply of the timber sector based on forest management:

- a) Operation of the Forest Management Support Program (Pamflor), which would guarantee greater flexibility and transparency in the licensing process and improvements in the implementation of the SFMPs;
- b) Implementation of the forest concession policy with greater celerity. The completion of the management plans for the FLOTAS of Faro and Iriri and the Flonas Altamira, Itacaiúnas, Itaituba I and II, Jamanxim, Mulata and Trairão is crucial for this to happen;
- c) The creation of roughly 8 million hectares in new Flonas and Flotas in the areas where the land tenure situation has not been defined; and,
- d) Incentives for reforestation including revision of the legal framework, which could reduce the pressure for native forest timber and guarantee the supply of raw material for the MDF, vegetable charcoal, cellulose and paper sectors.

The Brazilian Forest Service (SFB) and the Amazon Environmental Research Institute (IPAM 2011) suggested some strategic short-term measures for the sustainability of the timber market from native forests:

- 1) Allocation of public forests that have not been allocated for forest use;
- 2) Add the sustainable use CU to the forest market;
- 3) Promote technology improvements in the forestry companies/cooperatives; and,
- 4) Forest management in the public sphere with well defined authority and no gaps left unsolved.

After almost ten years, very few of the suggestions from the two studies were followed, the Forest Management Support Program (**Pamflor**) in Pará was demobilized and the deficit of areas is still a reality.

4. Conclusions and recommendations

Throughout this study, it is concluded that timber production in the Amazon region, particularly in the state of Pará, has been reduced significantly over the past few years, and consequently the number of logging industries as well. Likewise, the number of effective SFMPs at the environmental agency of Pará have also decreased significantly. The scenario indicates that it is unlikely production will return to previous levels, unless consistent and structured forest policies are established based on forest concession arrangements, and in the case of protected areas, if there is forest potential.

Based on the conclusion above, there has also been a reduction in the supply of timber harvested in unauthorized areas. This does not mean that the rates of illegal harvesting and sales of timber have lowered in the state.

Currently, forest concessions may be the only arrangement with the ability to present a supply of sustainable and traceable timber. In forest concession areas there is effective control of forest management, effective public governance,

traceability, land tenure security, transparency, protection from invasions and long-term commitments and contracts. Therefore, the government should concentrate its efforts on these arrangements.

The Pará environmental agency has invested in new technology, structures and systems to improve monitoring and transparency of the timber sector. However, like the other states in the Amazon, the enforcement is fragile and with a deficient structure to investigate forest crimes, even in cases when the environmental agency is the one conceding the licenses (for example, for forest management and vegetation clearing). In reality, almost all the enforcement actions are developed by IBAMA.

With the exception of the activities of the Amazon Fund, there are currently no other forest development activities in the state that direct support forest management.

Pará has very few successful community forest management initiatives. The two successful projects are over 10 years old, with a long history of support from donations. It is important to note that they are located on sustainable use CUs.

The recommendations based on the study are:

- 4.1. Community forest management projects take a long time to reach maturity, require ongoing technical assistance and resources to reinforce the social organization (particularly during the initial phases). Support with non-reimbursable funding during two or three years alone does not guarantee its sustainability.
- 4.2. Various plans and support policies for community forest management were established, but never implemented. A development law (federal or state) is strategic and essential to guarantee ongoing subsidies for community initiatives that work with the standing forest, especially in sustainable use CUs. Establishing ongoing subsidies is the priority action. In conjunction with the

concession arrangements, the government sector should also concentrate their efforts on community forest management conducted on sustainable use CUs.

- 4.3. The only strategy that has worked effectively to hold deforestation and forest degradation is the creation of CUs and demarcation of indigenous lands. The state of Pará has almost 10 million hectares of public forests with no set use determined, according to the SFB public forest registry (2016), that is, there are many areas available for the creation of CUs. If they are not used, they make way to illegal occupations and deforestation.
- 4.4. The work of the IFT with capacity building activities and training on forest management is recognized internationally. But there are increasing financial constraints for the operation of a permanent physical base similar to the existing one. The fixed costs are high. IFT has already started a process of off-site capacity building activities and training at third party facilities, that is, capacity building activities at the work site. It is a good method. They should also start a process of using distance education for the capacity building activities and training.
- 4.5. The idea is to wait to see if the demand for capacity building activities in reduced impact logging (RIL) reduces, based on the declining number of SFMPs, timber production and number of industries. Nevertheless, the ability of IFT to conduct these capacity building activities and trainings shall be maintained, since it is the only institution of this type in operation. In addition, they are in the interest of keeping the forest standing, while there is a stronger current trying to bring the forest down. The demand may reduce, but it will not end.
- 4.6. Some companies maintain the training scheme for their employees using employees who were trained by IFT.
- 4.7. Capacity building activities and trainings in management developed by the IFT Project are important for the education and the transformation of the individuals working directly with harvesting, inventories, the construction of dragging trails and roadways in a SFMP. Examples of this are seen at the forest concession areas in FLONA Jamari and in the community management at RESEX Verde para Sempre and FLONA Tapajós. It is also important to improve the practical knowledge of forest technicians who work in the public sector, for example, Ideflor-bio. However, the project alone does not have the ability to influence the decline in deforestation that has possibly taken place in the areas of the municipalities where the actions took place.
- 4.8. The deforestation logic is still that of short-term economic results and the consequent formation of pasture land. Cattle are cash generating assets while the standing forest is of little value and is only important when the timber has the potential to finance more deforestation. The development of forest management is complex, with few long-term incentives. It is not a familiar or traditional activity for most rural property owners. Capacity building activities and awareness raising on sustainable management alone can contribute very little to invert this logic, if it is not accompanied by consistent and structured government policies (with subsidies) to support and develop forest management. Today, that is not the case.

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- VIERGEVER, M. Cruz. H. Relatório Técnico – Financeiro Final do ProManejo. IBAMA.MMA.PPG7. 2007. Brasília.

9.3. PUBLICATIONS, TECHNICAL AND SCIENTIFIC MATERIAL PREPARED BY THE PROJECT

Within the scope of the direct effect “**Increased management and technical capacity for the practice of sustainable forest management**”, the 13 materials prepared by the project were:

1. IFT Technical Bulletin 1. Company-community agreement: technical recommendations for legal and fair agreements between logging companies and forest communities in the Amazon (2011).
2. IFT Technical Bulletin 3. Technical recommendations for the creation of an Occupational Health and Safety Program at forest management developments (2012).
3. IFT Technical Bulletin 4. Sustainable Almeirim: lessons learned and challenges with the development of a forest base in a typical municipality in the interior of the Brazilian Amazon (2012).
4. IFT Technical Bulletin 5. Production of wood shingles (wood shakes) by rural communities in the Amazon: an income alternative for the small forest producer in community and family forest management; Instituto Floresta Tropical (Tropical Forest Institute) (2012).
5. IFT folder - Technical Assistance in Forest Management and Reduced Impact Logging (FM-RIL) (2012)
6. IFT Technical Bulletin 6. Forest Management in Sustainable Use Conservation Units: Recommendations for initiatives to promote the formal development of community and family forest management (2013).
7. Publication Cutting activity in natural forests of the Amazon (2012).
8. Publication Institutional Portfolio of the Instituto Floresta Tropical (Tropical Forest Institute) - IFT (2013)
9. Technical Instructions 1. Forest Management and Reduced Impact Logging in Natural Production Forests of the Amazon (2013).
10. Technical Instructions 2. Public Forest Concession Arrangements in the Brazilian Amazon.

The law of public forest management and the overview of forest concessions in the Brazilian Amazon (2013).

11. Technical Instructions 3. Public Forest Concession Arrangements in the Brazilian Amazon. How to apply for a forest concession? (2013).
12. Guide on the Roberto Bauch forest management center (2012).
13. Report on IFT activities: 2011/ 2012

Within the scope of the direct effect “**Information and technology directed towards the sustainable use of the Amazon biome is produced and disseminated**”, the 18 applied research projects were:

1. Testing the use of forest monitoring systems to accompany the growth of harvested forests. (Use of MFTS software)
2. Analysis of the technical improvements made during the harvesting trials during the wet season and their effects on forest regeneration and conservation, conducted between 2002-2006 at CMFRB.
3. Measurements in the forest clearing experiments (method of Dr. Wadsworth, USFS) to follow the growth of commercial trees in forest management
4. Replication of planting demonstrations in vine clearings, using valuable species to the timber industry
5. Titica vine survey: Ecological survey and management of non-timber forest species (Phase I) with the Copaiba tree and titica vine species
6. Analysis study on biomass and estimates of absolute /total carbon, through field surveys to calibrate use of the LiDAR sensor
7. Study on population structure and the response to the harvesting of commercial timber species: Completion of the 5th measurement at the permanent evaluation plots of post RIL harvesting dynamics from 1996

8. Study on the effects of timber harvesting on the distribution, composition and structure of avifauna in the Amazon forest of Paragominas (Pará) (thesis in progress by a researcher associated with Esalq/USP).
 9. Test of income and productivity in the work, production and use of traditional forest products: wood shingles (wood shakes) production case.
 10. Planting test in harvest clearings (induction of the regeneration of sensitive species harvested for forest enrichment)
 11. Experiment: Financial feasibility of thinning to release the canopies with mechanical and chemical girdling in a dense tropical forest in eastern Paragominas-Pa.
 12. Experiment: Behavior of a highland ombrophilous forest in the municipality of Paragominas, Pará, seventeen years after the use of canopy release treatment.
 13. Experiment: Recovery evaluation of the productive potential and structure of a forest harvested using conventional methods and reduced impact logging (RIL)
 14. Experiment: Diametric distribution and volumetric production of a production forest.
 15. Models of large-scale forest harvesting using Precision technologies
 16. Evaluation of post RIL dynamics from 1996 and evaluation study of the damage caused by RIL
 17. Lowtech: the use of ratchets in forest management (study on the yield and productivity of felling, bucking and transport operations)
 18. Decomposition of the core of living trees in a forest harvesting area in East Amazon.
- em el manejo forestal. (reprinted in Spanish).
2. Article in the Fundo Vale book: Áreas Protegidas. Série Integração - Transformação - Desenvolvimento. 1st edition, Rio de Janeiro, 2012. Name of the article: Manejo florestal para a produção de madeira em Unidades de Conservação. Pp.133-136
 3. Article in the ITTO Tropical Forest Update Journal: Managing big-leaf mahogany in natural forests. Volume 22 No. 01. P.12-15
 4. Article in the POEMATROPIC Journal: Desafios e perspectivas para o manejo florestal em Reservas Extrativistas da Amazônia. No. 12
 5. Technical Bulletin No. 7: Reduced impact logging (RIL) during the rainy season in highland forests of the Brazilian Amazon: considerations, techniques, minimization of impacts and productivity rates.
 6. Dissertation: Growth, mortality, technical and financial feasibility of thinning to release the canopies in a humid ombrophilous forest, in the eastern part of the state of Pará
 7. Dissertation: Prediction of diametric distribution and volumetric production of a highland ombrophilous forest in the municipality of Paragominas, Pará, using a transition matrix
 8. Dissertation: Recovery evaluation of the productive potential and structure of a highland forest in the Eastern part of the Amazon after conventional and reduced impact timber harvesting.
 9. Dissertation: Structure and dynamics of a forest area seventeen years after harvesting timber in the town of Paragominas, PA, in the Brazilian Amazon.

The 17 manuals, theses and scientific articles were:

1. Manual Técnico Nº1 – Procedimientos simplificados em seguridade y salud del trabajo
10. Chapter “Disse gutta redder regnskogen” in the NORSK SKOGBRUK journal of 11/10/2014.

Published, in Norwegian, the work of the IFT at the Roberto Bauch Forest Management Center regarding Capacity building activities, Training, Dissemination and Improvement of Forest Management in the Amazon (http://www.norsk-skogbruk.no/artikkel.cfm?Id_art=1190)

11. Using the GIS tool to subsidize the inventory of a non-timber forest product (NTFP) from vines, in the Amazon forest
12. Determining the optimal harvest cycle for copaiba (*Copaifera* spp.) oleoresin production
13. Production of copaiba tree (*Copaifera* spp.) oil in the Amazon forest of Paragominas, Pa.
14. Distribution of hollow trees in a natural forest with managed timber harvesting in the Amazon. In: I International Conference on Ecology, 2013.
15. Technical Manual No. 2 – Management of natural forests of the Amazon. Felling, bucking and safety.
16. Technical Manual No. 3: Pre-harvesting Techniques for the Reduced Impact Logging Plan in Community and Family Forest Management
17. Technical bulletin No.2 - Evaluation of damage and waste provoked by timber harvesting in Amazon forests: a practical method to evaluate harvesting quality.

9.4. CAPACITY BUILDING ACTIVITIES ACTIVITIES AND TRAININGS OFFERED BY THE PROJECT

IFT considers capacity building activities as topics which are directed towards the introduction to relevant forest management issues. The capacity building activities courses are:

- TD: Forest Management Techniques for Decision Makers and;
- TD-W: Forest Management for Decision Makers.

Trainings are aimed at disseminating practices and techniques for sustainable forest management. The trainings are:

- MF: Forest Management and Reduced Impact Logging;
- GE: Management of Reduced Impact Logging;
- GM: Management in Forest Management and Reduced Impact Logging;
- TA: Principles of Management and Forest Certification for Forestry Workers;

- TI: Identification of Trees during Forest Harvesting;
- TPE: Special Pre-harvesting Techniques;
- TCS: Special Tree Felling Techniques and Forest Management Safety;
- TOA: Planning and Dragging Operation Techniques in Forest Management;
- TOI: Planning and Construction Techniques for Yards, Roadways and Infrastructure in Forest Management and;
- TEC: Copaiba Tree Oil Harvesting Techniques.

9.5. ONLINE QUESTIONNAIRE

Dear

We are contacting you regarding your participation in the capacity building activities and trainings offered by the Instituto Floresta Tropical (Tropical Forest Institute) - IFT as part of the project supported by the Amazon Fund/BNDES.

The German Cooperation for Sustainable Development through GIZ is supporting the evaluation of this project and, for that, we kindly ask that you complete the following questionnaire by Sunday, January 21.

This questionnaire is extremely relevant for evaluating the project, and we would appreciate it if you could take 15 minutes to complete it.

At the end of this survey and evaluation, we will share the findings with everyone involved.

In case of doubts, please contact us at: luisa.fenizola@giz.de and bernardo.anache@giz.de.

Thank you for participating,
Luisa Fenizola and Bernardo Anache

* Gender

Female

Male

Other

* How many courses did you take?

1

2

3

4 or more

Next you will answer a block of 4 questions on each course taken. If you took more than 4 courses, select the most relevant 4.

* Course

- TD: Forest Management Techniques for Decision Makers
- MF: Forest Management and Reduced Impact Logging
- GE: Management of Reduced Impact Logging
- TD-W: Forest Management for Decision Makers
- GM: Management in Forest Management and Reduced Impact Logging
- TA: Principles of Management and Forest Certification for Forestry Workers
- TI: Identification of Trees during Forest Harvesting
- TPE: Special Pre-harvesting Techniques
- TCS: Special Tree Felling Techniques and Forest Management Safety
- TOA: Planning and Dragging Operation Techniques in Forest Management
- TOI: Planning and Construction Techniques for Yards, Roadways and Infrastructure in Forest Management
- TEC: Copaiba Tree Oil Harvesting Techniques

* Location where you took the course

Year when you took the course

- 2011
- 2012
- 2013
- 2014
- 2015
- Other (specify)

Duration of the course

- Up to 1 day
- 2 to 3 days
- Between 4 and 7 days
- Between 8 and 14 days
- Over 14 days

* Line of work at time of the course

- Community producer
- Cooperative
- Private sector/company
- Third sector/civil society
- University student
- University professor
- Public servant

* Current line of work

- Community producer
- Cooperative
- Private sector/company
- Third sector/civil society
- University student
- University professor
- Public servant

Municipality where you worked at the time of the course

Municipality where you currently work

Position/title at the time of the course

Current position/title

* I practiced Sustainable Forest Management (SFM) before the course or event

- No
- A little
- A lot
- Completely

* I currently practice SFM

- No A lot
 A little Completely

If yes, the IFT support was the determining factor for my adoption of SFM

- No Completely
 A little Not applicable
 A lot

* The use of SFM brings financial profits for my professional activity.

- No A lot
 A little Completely

* The capacity building activities trainings promoted by IFT were relevant for my performance of professional activities.

- No A lot
 A little Completely

* I am aware of the technical material (folders, bulletins, guidebooks and leaflets) and research (articles, theses, dissertations) conducted by IFT.

- No A lot
 A little Completely

* I use the information on SFM made available by IFT through academic research (articles, theses, dissertations).

- No A lot
 A little Completely

* How many years does the complete rotation of a forest management cycle last in your region?

- Less than 20
 From 20 to 25
 From 25 to 30
 From 31 to 35

* Based on the course or event, in relation to the following activities:

	Already knew/ already applied before the course	Learned from the course, but have not applied since	Already knew, but since the course I do it better	Learned from the course and have been applying it since
Cutting cycle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forest inventory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vine cutting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Directed tree felling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mechanized dragging through narrow paths	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construction and main- tenance of forest roadways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* I had already studied about Sustainable Forest Management (SFM) before taking the IFT course

- No A lot
 A little Completely

* I incorporate the SFM information learned from the IFT courses into my activities

- No A lot
 A little Completely

* I incorporate the information learned from the IFT publications and research into my activities

- No A lot
 A little Completely

* I was familiar with the concept of Sustainable Forest Management (SFM) before the event/course held by IFT

- No A lot
 A little Completely

* In my region, I believe that SFM is being executed correctly in the field and in accordance with the techniques outlined

- No A lot
 A little Completely

* I am aware of the use of SFM to “heat up” illegal timber harvesting in other areas

- No A lot
 A little Completely

* I believe IFT is a benchmark on the topic of SFM

No

A lot

A little

Completely

* Did anything change in my practice after the course or event? If yes, what?

Comments

9.6. LIST OF PEOPLE INTERVIEWED DURING THE MISSIONS

First name	Institution	Role
Iran P. Pires	Instituto Floresta Protegida (Protected Forest Institute) - IFT	Executive Secretary (project coordinator)
Mara Lameira		Executive Assistant
Sonia Machado		Administrative/Financial Manager
Simone Sousa	Federal Rural University of Pará (UFPA - Paragominas), Forest Engineering program	Professor
Tâmara Lima		Professor
Sirlene Silva	Municipal Environmental Secretariat (SEMMA Paragominas), Environmental enforcement department	SEMMA Technician
Diana		SEMMA Technician
Isael		SEMMA Technician
Francisco	Sikel Brasil Verde S.A.	Operations Manager
Paulo Lobato	Technical Assistance and Rural Extension Company (EMATER, PA) – Technical Board (DITEC)	Technical consultant of DITEC
Rosemir		Technical consultant of DITEC
Alcir		Technical consultant for Marajó
Rosival Possidônio		DITEC Director
Roberta de Fátima Rodrigues Coelho	Federal Institute of Pará (IFPA)	Professor of the forest management subjects
Denys Pereira	EBATA	Forest Engineer
Tobias Brancher	State Environmental and Sustainability Secretariat of Pará (SEMAS/PA)	Silvo-pastoral Project Manager
Daniel Mendes	Environmental Monitoring Center (CIMAM)	Monitoring and Enforcement Coordinator
Simone		CIMAM Technician
Gabriela		CIMAM Technician
Dalton Cardoso	Amazon Institute of People and the Environment (Imazon)	Assistant researcher
Paulo Amaral		Senior researcher
Sra. Maria Creuza	Sustainable Development Center (CDS, Porto de Moz)	Coordinator
Sr. Evandro	Itapeua Community	Community leader
Alisson	Federal University of Pará (UFPA - Altamira)	Forest engineering program professors
Marlon		
Cintia Soares	Institute of Forest and Biodiversity Development of the State of Pará - Ideflor-bio	DGFLOP/Idelfor-bio Director
Michele de Azevedo Pinto		DGFLOP/Idelfor-bio Technician
Márcia Segtowich		DGFLOP/Idelfor-bio Technician
Marco Lentini	<i>World Wide Fund for Nature (WWF)</i>	Conservation Supervisory Board Leader
Cristina Galvão Alves	<i>Brazilian Forest Service</i>	Coordinator of Forest Development and Inclusion

9.7. TERMS OF REFERENCE FOR THE EVALUATION

EFFECTIVENESS EVALUATION OF THE PROJECT “DISSEMINATION AND IMPROVEMENT OF SUSTAINABLE FOREST MANAGEMENT TECHNIQUES” OF THE INSTITUTO FLORESTA TROPICAL (TROPICAL FOREST INSTITUTE) - IFT

Program: Sustainable Protection and Management of Tropical Forests
PN: 09.2287.2-002.00
Component: Amazonienfonds für Wald- und Klimaschutz
Date: 27.10.2017

1. Introduction and general information

1.1. Project description

Project title: **Dissemination and Improvement of Sustainable Forest Management Techniques**
 Responsible Organization: **Instituto Floresta Tropical (Tropical Forest Institute) - IFT**
 Project period: **2nd quarter of 2011 to 4th quarter of 2015**

The project Dissemination and Improvement of Sustainable Forest Management Techniques consisted of a series of capacity building activities sessions and awareness raising activities developed on-site at the Roberto Bauch Forest Management Center (Paragominas/PA), a training center of the Instituto Floresta Tropical (Tropical Forest Institute), and off-site in at least 23 locations in the state of Pará, 2 in the state of Amazonas and 1 in the state of Rondônia, in municipalities, districts, Extractive Reserves and National Forests. It also included activities and capacity building activities in Acre, Amapá, Mato Grosso and São Paulo.

The purpose of the project was to reduce the lack of forest management manpower in the region and change the perception of the sector on the advantages of adopting good timber harvesting practices when compared to conventional harvesting methods. These were the objectives to be accomplished through awareness raising and reinforcement of the management and technical capacities of the public through capacity building activities for the practice of sustainable forest management, as well as through research and the production of technical dissemination material on the information and technology geared towards the sustainable use of the Amazon Biome.

Throughout the implementation, the project received the total amount of R\$ 7,449,000.00 and the main outcome was the capacity building activities of 1,933 people in 140 courses, and the awareness raising of over 2,000 people at 50 events for the implementation of a good forest governance in the region. Various activities were also developed for improving the scientific basis in forest management through research on the subject and dissemination of this information through 13 newsletters on the economic, ecological and social benefits of forest management, as well as 17 technical publications on improvements to the scientific basis and lessons learned in relation to the scientific experiments conducted.

1.2. Context of the project

The main areas where the capacity building activities and awareness raising activities were held were in the municipalities of Almeirim and Porto de Moz, Altamira and Paragominas in Pará, Lábrea, in Amazonas, and in Flona de Jamari, in Rondônia.

- 1.2.1. Almeirim and Porto de Moz are located in the Lower Amazon Mesoregion. Almeirim covers 72,954.798 km² and has a population of roughly 33 thousand inhabitants, and is the second largest producer of buffalo milk in Brazil. Porto de Moz, on the other hand, has a population of roughly 40 thousand people and covers an area of 17,422.876 km², which comprises RESEX Verde para Sempre. The predominant activities in this area are agriculture, livestock farming, natural vegetation harvesting and, to a lesser degree, harvesting and artisanal fishing. In this municipality, the activities took place at churches and the Sustainable Development Committee offices, among others.
- 1.2.2. The municipality of Altamira is located in the mesoregion on the Southwestern part of the state of Pará – the largest in Brazil and one of the largest in the world – with an area of 159,695.938 km². The project activities were held in both the main district as well as the district of Castelo dos Sonhos, which is 950km away. Agriculture (rice, cocoa, beans, corn, black pepper), rubber extraction, Brazil nut harvesting, and livestock farming are the main economic activities of the municipality. The region has the lowest population of the state and deforestation is concentrated along the Transamazônica and Santarém-Cuiabá highways (constructed for the transport of soybeans from Mato Grosso to the Santarém port) and is also subject to measurable impacts provoked by the construction of the Tapajós Complex and the Belo Monte Hydroelectric Power Plant. The municipality of Altamira and the municipalities of Novo Progresso and Pacajá, also located in the region, are on the priority municipality list for deforestation prevention and control activities.
- 1.2.3. In the Southeastern part of the state of Pará is Paragominas, with 19,342.254 km² and a population of 108,547 inhabitants, where the Roberto Bauch Forest Management Training Center is located. The municipality was the first to be taken off the MMA list of municipalities with the most deforestation activities, due to the effect of the programs Paragominas Município Verde, by the local government, and Arco de Fogo, of IBAMA and the Federal Police, in addition to the actions of the CAR projects and satellite monitoring (Socio-environmental Management, by Imazon, supported by the Amazon Fund). The region has high rates of deforestation due to large agricultural projects financed by Sudam in the 1970's, the progression of prospecting activities in the 1980's, the predatory harvesting of timber in the 1980's and 90's and currently due to beans, corn, soybean and palm crops, along with dairy and beef livestock farming. For this reason, it concentrates the greatest number of municipalities that are still on the list (Cumaru do Norte, Novo Repartimento, Rondon do Pará, Santa Maria das Barreiras, São Feliz do Xingu, Itupiranga and Marabá).
- 1.2.4. In Lábrea in Amazonas, the activities were held at the campus of the Federal Institute of Amazonas, RESEX Ituxi and RESEX Médio Purus. The municipality covers alone an area of 68,229.009 km², which encompasses, in addition to two Extractive Reserves, the Flona do Iquiri and Mapinguari National Park. The population is estimated at 44 thousand people and it has one of the highest GNP's of Amazonas, essentially based on agriculture. It is also on the priority municipality list of MMA.
- 1.2.5. The Flona de Jamari in Rondônia covers an area of approximately 220 thousand hectares, of which 96 thousand were allocated for a forest concession, the first in the country. In it, the three companies awarded during the bidding process conducted by the Brazilian Forest Service (SFB) are allowed to harvest, in addition to timber, firewood left over from the harvesting activities, non-timber products (leaves, roots, bark, fruit, seeds, oils, latex and resins) and install lodging services for adventure sports and nature watching visits. The rest of the Flona remains as an environmental preservation area or is allocated to the local populations. Close to the Flona, the municipality of Machadinho do Oeste is also on the priority municipality list.

Based on this scenario, the purpose of the project was to reduce the lack of forest management manpower in the region and change the perception of the sector on the advantages of adopting good timber harvesting practices when compared to conventional harvesting methods. The reinforcement of sustainable forest management, both practiced by companies and by traditional communities, is one of the main **forest asset appreciation** policies in the region, that is, which keeps the forest standing and has important **benefits**: (i) **environmental**, by minimizing the impact of logging activities; (ii) **social**, by offering higher employment rates and income for the communities and sector workers; and (iii) **economic**, by increasing the still deficient market of controlled or certified timber. The creation of alternatives to generate income that keeps the forest standing meets the greatest purpose of the Amazon Fund to reduce deforestation in the region.

IFT, headquartered in Belém/PA, has been working since 1994 towards applying good practices of forest management in the Amazon. During the implementation of the project, between 2011 and 2015, roughly 30 technicians and researchers were associated with IFT to conduct research experiments supported by the project, from a total of approximately 47 IFT employees helping to reinforce the regional research network and the information and technology directed towards the sustainable use of the Amazon biome produced and disseminated. To conduct the capacity building activities, the logging company Cikel Brasil Verde Ltda. offered IFT, free of charge, the Roberto Bauch Training Center, on the Cauaxi ranch as well as the Rio Capim ranch, where some of the practical activities took place.

2. Purpose and objectives of the evaluation

The main purpose of conducting the project evaluation is to measure beyond the results achieved, the impact of the activities and the sustainability of the changes caused by their implementation.

All the projects supported by the Amazon Fund follow an individualized logical framework in which results are defined (products and services to be delivered or outputs), direct effects of the intervention (specific objectives or outcomes) and indirect effects (general objectives or impacts) to be achieved. It is the intervention logic of the project, also called the theory of change because it represents a thinking model that explains how the project is expected to cause a desired change. The logical framework of the project is available on the Amazon Fund website¹¹.

The main objectives of the evaluation are:

- Assist the Amazon Fund in rendering accounts to its donors about the type of project supported and its effects;
- Facilitate the institutional learning of the Fund itself, contributing to improve the quality of the projects and the prioritization of investments, thus subsidizing decision-making;
- Verify compliance of the projects supported by the Amazon Fund with the Cancun safeguards agreed under the UNFCCC for REDD+ actions;
- Check alignment of projects with PPCDAm and state plans for prevention and control of deforestation;
- Analyze the strengths and weaknesses of project intervention;
- Identify challenges and lessons learned; and
- Find out to what extent the project is relevant, efficient, effective, sustainable and generates impacts.

¹¹ http://www.fundoamazonia.gov.br/FundoAmazonia/fam/site_pt/Esquerdo/Projetos_Apoiados/Lista_Projetos/IFT

3. Description of the task

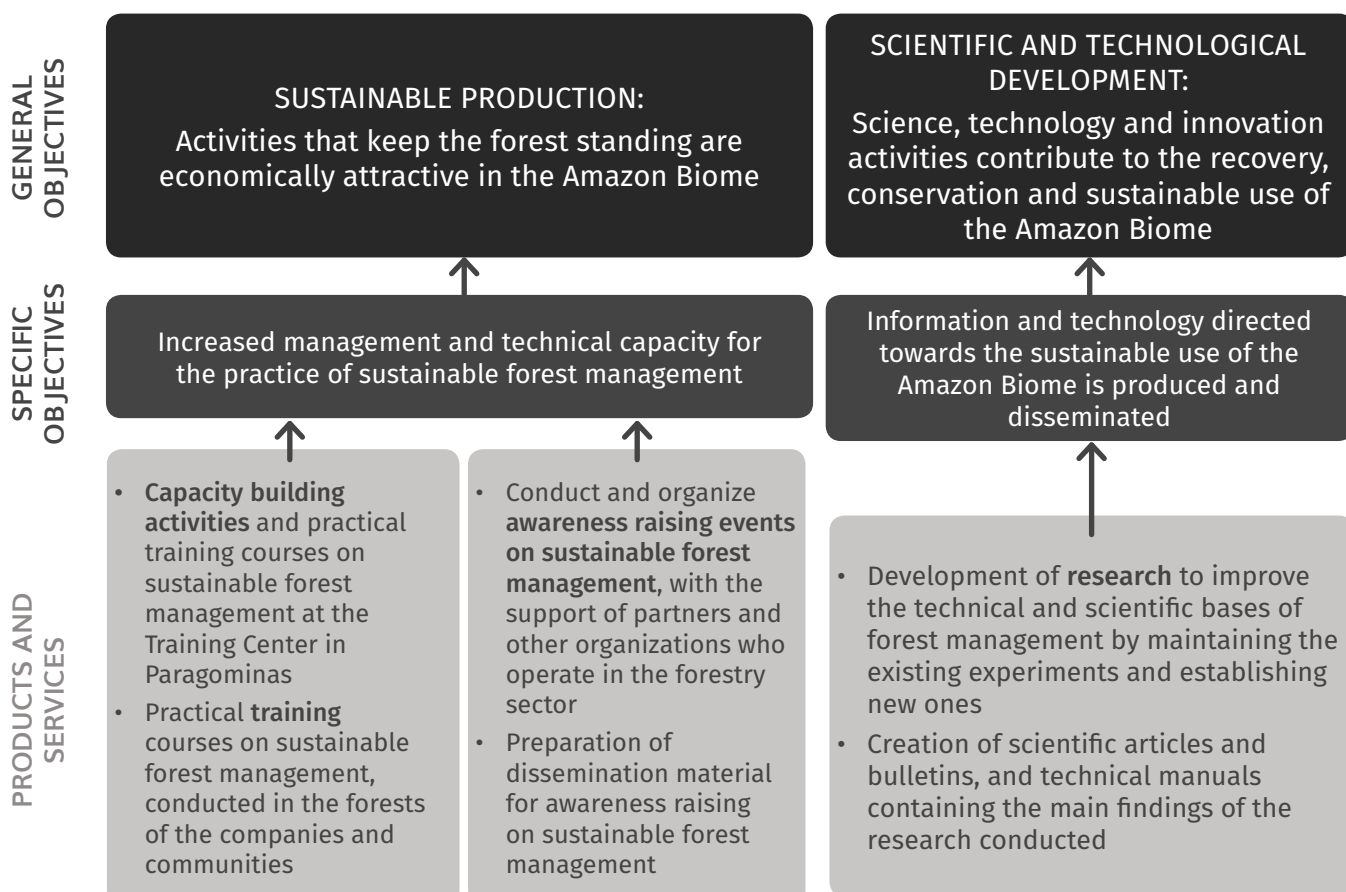
3.1 Purpose and focus of the evaluation

The Project was implemented between 2011 and 2015 promoting capacity building activities concentrated mainly in locations in Pará, Amazonas and Rondônia. Therefore, the focus of the evaluation is, in addition to the areas where the capacity building activities took place, the areas where the organizations affected by them operate. The following outcomes are the targets of this evaluation:

- Increased management and technical capacity for the practice of sustainable forest management through capacity building activities and practical trainings, on-site and off-site, awareness raising activities and the production of dissemination material;
 - Information and technology directed towards the sustainable use of the Amazon Biome produced and disseminated through articles, scientific bulletins and technical manuals;
- And, beyond the outcomes, the impacts generated by:
- Information generated incorporated into local and regional government policies.
 - Conhecimento gerado incorporado às políticas públicas locais e regionais.

3.2 The intervention logic

Objective Analysis Tree of the Logical Framework of the project Dissemination and Improvement of Sustainable Forest Management Techniques:



3.3 Key questions and evaluation criteria

The effectiveness evaluation of the Project Dissemination and Improvement of Sustainable Forest Management Techniques shall comply with the guidelines and criteria specified in the document “Effectiveness Evaluation of projects Supported by the Amazon Fund - Conceptual Framework”¹². These criteria are based on the OECD, the REDD + safeguards defined by the Framework Convention (Annex I of Decision 1 / CP 1641 and the guidelines of Decision 12 / CP 17) and the selected cross-cutting criteria. For each criterion, a basic script of guiding questions to be applied and answered in the evaluation of the Project is presented and should be complemented in the design report of the project (1st Product to be presented by the evaluation team), as judged by the evaluation team. Below is the summary table of criteria and respective guiding questions:

3.3.1 OECD Criteria, Cross-cutting Issues and Evaluation questions

Criteria	Guiding Questions
Relevance	<ul style="list-style-type: none"> • To what extent are project objectives still valid at the time of finalization? • Are the immediate activities and outcomes of the project consistent with the achievement of the objectives set for the project? • Are the immediate project activities and outcomes consistent with expected effects and impacts?
Effectiveness	<ul style="list-style-type: none"> • Have the project’s (specific) objectives been or will be met? • What are the main factors that influence whether or not direct goals are met?
Efficiency	<ul style="list-style-type: none"> • What is the cost-effectiveness of the activities carried out? • Are the means applied in a reasonable relation to the results obtained? • Were goals met within the deadlines? • Are there alternative ways to get the same results with less cost / means?
Impact	<ul style="list-style-type: none"> • What were the main changes generated as a result of the project? • What were the main effects that contributed to the achievement of the objective? • What actions or events outside the project contributed to the achievement of the observed changes? • Did the project make any difference to the beneficiaries? • Does the project have scale in the region or influence other initiatives?
Sustainability	<ul style="list-style-type: none"> • To what extent do project benefits last after the end of Amazon Fund funding? • What were the main factors that influenced the sustainability of the project? • What risks should be monitored to ensure the sustainability achieved?
Cross-cutting criteria	
Poverty reduction	<ul style="list-style-type: none"> • To what extent has the project contributed effectively to economic alternatives that value the standing forest and the sustainable use of natural resources? • To what extent has the project had a positive impact on reducing poverty, social inclusion and improving the living conditions of beneficiaries living in its area of activity? • Did the project succeed in promoting and increasing production in value chains of timber and non-timber forest products originating from sustainable management?
Gender equity	<ul style="list-style-type: none"> • Has the project succeeded in integrating gender issues into its strategies and interventions or addressed the issue in an independent way? How? • Was there separation by gender in data collection for project planning and monitoring? • How did the project contribute to gender equity?

¹² http://www.fundoamazonia.gov.br/FundoAmazonia/export/sites/default/site_pt/Galerias/Arquivos/Marco_Conceitual_Avaliacao_de_Efetividade_projetos_Fundo_Amazonia_2016.pdf

3.3.2 REDD+ Safeguards and Evaluation Issues

Criteria	Guiding Questions
1. Actions complementing or consistent with the objectives of national forest programs and other relevant international conventions and agreements	<ul style="list-style-type: none"> • Is the project aligned with PPCDAM and the state plans for deforestation prevention and control? • To what other federal public policies or international agreements is the project aligned to? In what aspects? • Has the project contributed or may come to contribute directly or indirectly to the reduction of emissions from deforestation or forest degradation? In what way?
2. Transparent and effective national forest governance structures, with a view to national sovereignty and national legislation	<ul style="list-style-type: none"> • To what extent has the project promoted the articulation between various actors (public sector, private sector, third sector or local communities)? Have instances of shared governance been used? Which? • To what extent has the project contributed to strengthening public instruments and forest and territorial management processes?
3. Respect for the knowledge and rights of indigenous peoples and members of local communities, taking into account relevant international obligations, national circumstances and laws and noting that the UN General Assembly adopted the United Nations Declaration on the Rights of Indigenous Peoples	<ul style="list-style-type: none"> • To what extent has the project influenced the constitutional rights associated to the possession and formal destination of land in its area of activity? • To what extent has the project influenced the sustainable use of the natural resources in its area of activity? • If the project had as direct beneficiaries indigenous peoples, traditional communities or family agriculturists: were their socio-cultural systems and traditional knowledge considered and respected throughout the project? • Are there any effects that interfere with the traditional way of life of these groups? What kind of effects: in the economic or social organization, or in the use of available space and resources? In what way do they interfere?
4. Full and effective participation of stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of Decision 1 / CP 16	<ul style="list-style-type: none"> • How did the project guarantee prior consent and local / traditional choice of representatives of its beneficiaries (especially indigenous peoples and traditional communities)? • Which participatory planning and management tools did the project apply during planning and decision making? • In case of projects with economic purposes: were any benefits arising from the project accessed in a fair, transparent and equitable way by the beneficiaries, avoiding a concentration of resources? • To what extent has the project provided the general public and its beneficiaries with free access and easy understanding of information related to project actions? • Was the project able to set up a good monitoring system for results and impacts? Has the project monitored and systematically communicated the results and their effects?
5. Actions consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 Decision 1 / CP 16 ¹³ are not used for the conversion of natural forests but rather to encourage the protection and conservation of natural forests and their ecosystem services and to improve other social and environmental benefits	<ul style="list-style-type: none"> • How did the project contribute to the expansion or consolidation of protected areas? • How did it contribute to the recuperation of deforested or degraded areas? • In the case of restoration and reforestation activities, did the methodologies used prioritize native species? • To what extent has the project contributed to establishing recovery models with an emphasis on economic use?
6. Actions to address the risks of reversals in REDD + results	<ul style="list-style-type: none"> • Which factors constitute risks to the permanence of REDD + results? How did the project address them? Is there an ongoing monitoring strategy for these outcomes?
7. Actions to reduce the shift of carbono emissions to other areas	<ul style="list-style-type: none"> • Have there been a shift of emissions prevented by the project to other areas?

¹³ Decision 1/CP 16: Emission reductions from deforestation; emission reductions from forest degradation; conservation of forest carbon stocks; sustainable forest management and increased carbon stocks.

4. Methodology

The methodology to be applied in the evaluation should be based on the criteria and objectives contained in the document “Evaluation of Effectiveness of Projects Supported by the Amazon Fund - Conceptual Framework”.

It is expected that the following products will be generated: (i) Evaluation Design Report and (ii) Effectiveness Evaluation Report of the project Dissemination and Improvement of Sustainable Forest Management Techniques. And, in the interim, a (iii) Preliminary Effectiveness Evaluation Report, a product to be used during the round of consultations.

Below is the methodology proposed for each phase and its respective stages:

4.1. Preparation phase:

- During this phase, the objectives should be defined and the evaluation planning completed of the Project Dissemination and Improvement of Sustainable Forest Management Techniques. *After preparing the ToR and contracting the team of evaluators*, the key documents should be organized. To this end, the documents, data and reports that will be used to carry out the evaluation shall be identified, together with the BNDES and the organization responsible for the implementation. The Evaluation team will systematically carry out a collection of data from secondary sources, which aims to compose a “memorandum” that will serve as a source of reference, leveling and memory-help of all information related to the project to be evaluated.

4.2. Implementation Phase:

- *Evaluation design and tools.* The Evaluation Design Report to be prepared by the team of evaluators should present the roadmap of the evaluation work, the detailed methodology and the tools that will be used during the evaluation work. This report should have the following roadmap: (a) Basic project data; (b) Introduction; (c) ToR analysis; (d) Division of tasks, Work Plan and Logistics; (e) Design / Methodology; And (f) Attachments.
- *Data collection and analysis.* The methodology should be diversified, using three data collection methods: i) Nonreactive (secondary sources: project documentation, public and scientific data and information available from the project field of work, such as subsidies to technical and scientific journals, including dissertations, theses, articles and manuals or material produced from them, in addition to key documents organized during the preparation phase); ii) Polls (field survey: can use standard questionnaires, or interviews with individuals or groups and by using analysis tools, such as SWOT); and iii) Observation The Poll can be applied to both qualified individuals in the scope of the project or individuals from organizations where they work or those who were directly impacted by them, in addition to the stakeholders who benefited from the direct and indirect effects of the project. This is the first phase of data analysis, which aims to analyze the logic of the intervention, the products and services performed by the project and the results achieved. At this stage, it is important to raise doubts and questions that need to be answered by the executors and beneficiaries, as this will serve as input for the next stage, the Field Mission.
- *Field mission.* Its objective is to perform part of the data collection, in person, in a visit to the region where the project operates. The Evaluation Team will conduct a field visit for the time deemed necessary (to be detailed in the Evaluation Design Report), up to a maximum of 7 days.

- Preliminary report. After the field mission, the evaluation team should complement the analysis of the data collected. Therefore, a preliminary report of the project effectiveness evaluation should be generated. The assignment and task division of each evaluation team member should be detailed in the evaluation design report.
- Consultation round. At this stage, a workshop will be held with the participation of the Evaluation Reference Group, the Ministry of Environment, key people of the Project evaluated and some peers, who are the specialists who hold responsibilities under themes related to those of the evaluated project. The workshop methodology should be described in the Evaluation Design Report.

4.3. Analysis and dissemination phase:

- Consolidation of data analysis. Along with the complementary inputs of the Consultation Round, there should be a new analysis based on the comments and justifications presented by the project participants and the participating peers.
- Final report. The methodology and composition of the Effectiveness Evaluation Report of the Project Dissemination and Improvement of Sustainable Forest Management Techniques are in the document “Effectiveness Evaluation of Projects Supported by the Amazon Fund - Conceptual Framework.”
- Dissemination of results. The Effectiveness Evaluation Report of the Project Dissemination and Improvement of Sustainable Forest Management Techniques and the executive summary will be published on the Amazon Fund Internet page (www.fundoamazonia.gov.br).

5. Activities, products and deadlines

The following schedule presents the basic plan to conduct the evaluation of the project Dissemination and Improvement of Sustainable Forest Management Techniques. The table contains the activities, services and products and deadlines of the effectiveness evaluation process.

	Activities	Responsible	Business Days	Deadlines	Products
1	Publish ToR (Terms of Reference), receive and organize proposals from consultants	GIZ (in charge of contracting)	7	Until 22/ Sep/2017	Consultants' proposals received and organized
2	Contract consultants and form evaluation team (consultants + GIZ)	GIZ	15	Until 17/ Nov/2017	Consultants hired and team formed
3	Set first meeting of the team with the Amazon Fund/ Contract the organization in charge of the evaluated project/ Analyze relevant documents/ Prepare proposal for the evaluation design report	GIZ	15	Until 8/ Dec/2017	Evaluation design proposal
4	Comment on the evaluation design report proposal	GERAV/BNDES DEFAM/ BNDES Organization in charge of the project	3	Until 11/ Dec/2017	Evaluation design report proposal with comments

5	Review evaluation design report	Evaluation team	3	Until 13/ Dec/2017	Evaluation design report reviewed
6	Approve reviewed report	GERAV/BNDES DEFAM/ BNDES	3	Until 14/ Dec/2017	Evaluation design report (final)
7	Implement evaluation/ Conduct field mission/ Systematize outcomes, etc./ Prepare and submit preliminary evaluation report	Evaluation team	20	Until 20/ Jan/2018	-
8	Present outcomes (Round of Consultations)	Evaluation team	1	Until 2/ Feb/2018	Preliminary evaluation report with considerations reported during the round of consultations
9	Comment on the Preliminary evaluation report	GERAV/BNDES DEFAM/ BNDES Organization in charge of the project	5	Until 10/ Feb/2018	Preliminary evaluation report with comments sent after the round of consultations
10	Prepare Final evaluation report	Evaluation team	5	Until 20/ Feb/2018	Effectiveness Evaluation Report
11	Incorporate the supplementary information from the presentation, preface, and executive summary into the final report	Evaluation team	3	Until 25/ Feb/2018	Effectiveness Evaluation Report in dissemination format
12	Translation of the final evaluation report and appendices	Translator/ Evaluation team	10	Until 24/ Mar/2018	Effectiveness Evaluation Report in dissemination format (English)
13	Publish and distribute the Effectiveness Evaluation Report	Amazon Fund Team	--	--	Upload to the BNDES Internet page
TOTAL no. of business days			90	--	--

6. Evaluators Team

The Project *Dissemination and Improvement of Sustainable Forest Management Techniques* will be evaluated by a team comprised of three people, of which two (2) will be specialists from GIZ and one (1) an outside consultant who will be hired by GIZ after an advertisement for the position is published on the Brazilian Monitoring and Evaluation Network. The GIZ specialists shall be senior and junior consultants with experience in project evaluation, data collection and preparation of thematic diagnoses. The outside consultant shall be a senior consultant with experience in project evaluation, knowledge of forest management subjects and capacity building activities on forest topics. As for the qualifications of the evaluators, they include the following requirements:

- *Technical knowledge.* The evaluation team shall be multidisciplinary and have knowledge on government policies in the area of sustainable development and the environment, be familiar with the preparation, monitoring and evaluation of socio-environmental projects and the topics covered by the project, mainly: forest management and capacity building activities on forest topics.
- *Methodological knowledge.* The team of evaluators should be aware of the methodologies that will be used to evaluate the project, especially those related to methods for collecting and analyzing data, measuring the achievement of results and qualifying effects achieved. In addition, it is important to know instruments that allow the combination of methods to triangulate the data collection, in order to increase the reliability of the results.

- *Regional expertise.* The team of evaluators should be aware of the regional issues of the Amazon that are dealt with under the projects supported by the Amazon Fund. It is desirable that they have professional experience in the Amazon.

The consultant shall not have had any prior involvement or particular association with the project to be evaluated. The evaluation team shall work without any outside interference, be given access to the project data to be evaluated and be given support in compiling all required information. The GIZ specialists and the consultant shall treat all Amazon Fund and project documentation to be evaluated as confidential, except for the information to be included in the Effectiveness Evaluation Report.

7. Rapporteurship

Two reports will be produced during the evaluation process: the Evaluation Design Report and the Effectiveness Evaluation Report of the project Dissemination and Improvement of Sustainable Forest Management Techniques. The content of these reports shall comply with the organization and proposal outlined in item 8.1.7 of the document “Effectiveness Evaluation of Projects Supported by the Amazon Fund - Conceptual Framework.”

8. Coordination / Responsibilities

Follow-up of the effectiveness evaluation of the Project Dissemination and Improvement of Sustainable Forest Management Techniques shall be conducted by a Project Reference Group comprised as follows:

- Representatives of the Monitoring and Evaluation Management of the BNDES Planning Area;
- Representatives of the Management Department of the BNDES’ Amazon Fund;
- Representatives of GIZ, within the framework of the Technical Cooperation Project in force;
- Representatives from the Instituto Floresta Tropical (Tropical Forest Institute), responsible for the implementation of the project to be evaluated; and
- Evaluation team members.

The coordination of the evaluation work will be carried out by GIZ. The responsibilities of each part that make up the Reference Group are defined in item 5.1 of the document “Evaluation of Effectiveness of Projects Supported by the Amazon Fund - Conceptual Framework”. Efetividade dos Projetos Apoiados pelo Fundo Amazônia – Marco Conceitual”.

This ToR has an appendix regarding the hiring of a consultant to the evaluation:

Appendix 1 – Consultant

Rio de Janeiro, August 30, 2017

PhD Helmut Eger
Project Director

Cooperation with the Amazon Fund/ BNDES

APPENDIX 1 – CONSULTANT

CONSULTANT Terms of Reference

Advertisement for a contract position in relation to the ToR Effectiveness Evaluation of the Project Dissemination and Improvement of Sustainable Management Techniques

Project: Sustainable Protection and Management of Tropical Forests – Amazon Fund

Title: Effectiveness Evaluation of the Project “Dissemination and Improvement of Sustainable Management Techniques”

1. Objective

Hire one (1) senior consultant with experience in the project evaluation, knowledge on the topics related to public forest policies, forest management and capacity building activities on forest topics.

To comply with this objective, the consultant will be required to work with a team, in order to participate in the evaluation of the outcomes of the project Dissemination and Improvement of Sustainable Forest Management Techniques, as outlined in item 2 of this ToR.

2. Consultant Activities

The consultant shall be a part of the evaluation team of the Project Dissemination and Improvement of Sustainable Management Techniques, with the following duties:

- Participate in the evaluation team of the Project Dissemination and Improvement of Sustainable Management Techniques;
- Prepare, with support from the evaluation team, the **Effectiveness Evaluation Design Report** in accordance with the Terms of Reference for the Evaluation;
- Collect, analyze and interpret data from the results, effects and impacts of the Project on the topics related to organizational reinforcement and agroforestry;
- Conduct project evaluation interviews in the field, in conjunction with the evaluation team;
- Prepare and consolidate, in conjunction with the evaluation team, the wording of the **Preliminary Effectiveness Evaluation Report** as a whole, including the chapters related to the topics you are in charge of;
- Participate in the round of consultations to present the Preliminary Effectiveness Evaluation Report;
- Prepare and consolidate, in conjunction with the evaluation team, the **Effectiveness Evaluation Report of the Project Dissemination and Improvement of Sustainable Forest Management Techniques**.

3. Working Time Frame

The activities shall be conducted within a 5-month time frame, starting on 30/Sep/2017, with a final submission deadline for the products proposed for 25/Feb/2018.

Within this interval of time, the consultant shall set aside **30 productive days** dedicated to the implementation of the work.

4. Consultant Products

Products	Days of work	Deadline	Format/ Technical specifications
1 – Evaluation Design Report of the Project Dissemination and Improvement of Sustainable Forest Management Techniques	5 days	03/Dec/2017	Word Document, Font Arial 12, spacing 1.5 and in digital format.
2 – Preliminary Effectiveness Evaluation Report of the Project Dissemination and Improvement of Sustainable Forest Management Techniques	15 days	20/Jan/2018	Word Document, Font Arial 12, spacing 1.5 and in digital format.
3 – Effectiveness Evaluation Report of the Project Dissemination and Improvement of Sustainable Forest Management Techniques	10 days	25/Feb/2018	Word Document, Font Arial 12, spacing 1.5 and in digital format.
Total days of work	30 days		

5. Trips

The work shall be performed in Rio de Janeiro, Brasília, Belém and the municipality of Paragominas/PA. Proposed for this:

TRIP	NUMBER OF TRIPS	TOTAL PERIOD (DAYS)
1. Rio de Janeiro	Up to 3 trips	5
2. Belém e Paragominas	1	7
3. Brasília	1	2
Total number of travel days		14 days

*There will be logistics support for traveling between the municipalities of Belém and Paragominas/PA, provided by GIZ.

Therefore, up to ten (10) routes/ airfares, as specified above, and a total of up to eleven (14) days of traveling will be required.

The consultant shall receive an advance of 80% of the total amount proposed for traveling expenses (airfare, taxis, lodging and meals) after signing the contract. The remaining amount shall be paid upon submission of documentary proof of the expenses incurred.

6. Fees

Shall be paid in 3 installments, based on the delivery of the products and approval of the services by the Project Coordinator, as follows:

- 30% upon submission of Product 1;
- 45% upon submission of Product 2; and
- 25% upon submission of Product 3

7. Work Location

The activities shall be conducted at the consultant's usual place of business, the office of the contracting party in Rio de Janeiro (GIZ and AmazonFund/BNDES offices) and in Belém and Paragominas PA.

8. Contract Term

From 17/Nov/2017 to 17/Mar/2018.

9. Conditions for the Provision of Services

The contractor's compliance with the requirements is governed by the following conditions:

- Compliance with the requirement to sign a confidentiality agreement in relation to the data provided for analysis as per the contract;
- Agree to not publish any information in regard to the purpose of the analysis;
- Access and receipt of preliminary material from the department in charge;
- Development/follow-up of work in conjunction with GIZ - Amazon Fund, including in relation to the approval and/or request for changes to the products.

10. Professional Qualifications

- Senior consultant qualified in the topics of management and forest management and capacity building activities activities, with knowledge and experience in project evaluation and the methods that shall be used to evaluate the Project;
- Knowledge of regional issues of the Amazon that are dealt with in the scope of the projects supported by the Amazon Fund;
- Knowledge related to government forest polices and government policies in the area of sustainable development and the environment;
- Professional experience in the Amazon.

EFFECTIVENESS EVALUATION REPORT OF A PROJECT SUPPORTED BY THE AMAZON FUND

EFFECTIVENESS EVALUATION REPORT OF THE PROJECT DISSEMINATION AND IMPROVEMENT OF SUSTAINABLE FOREST MANAGEMENT TECHNIQUES OF THE INSTITUTO FLORESTA TROPICAL (TROPICAL FOREST INSTITUTE) - IFT

