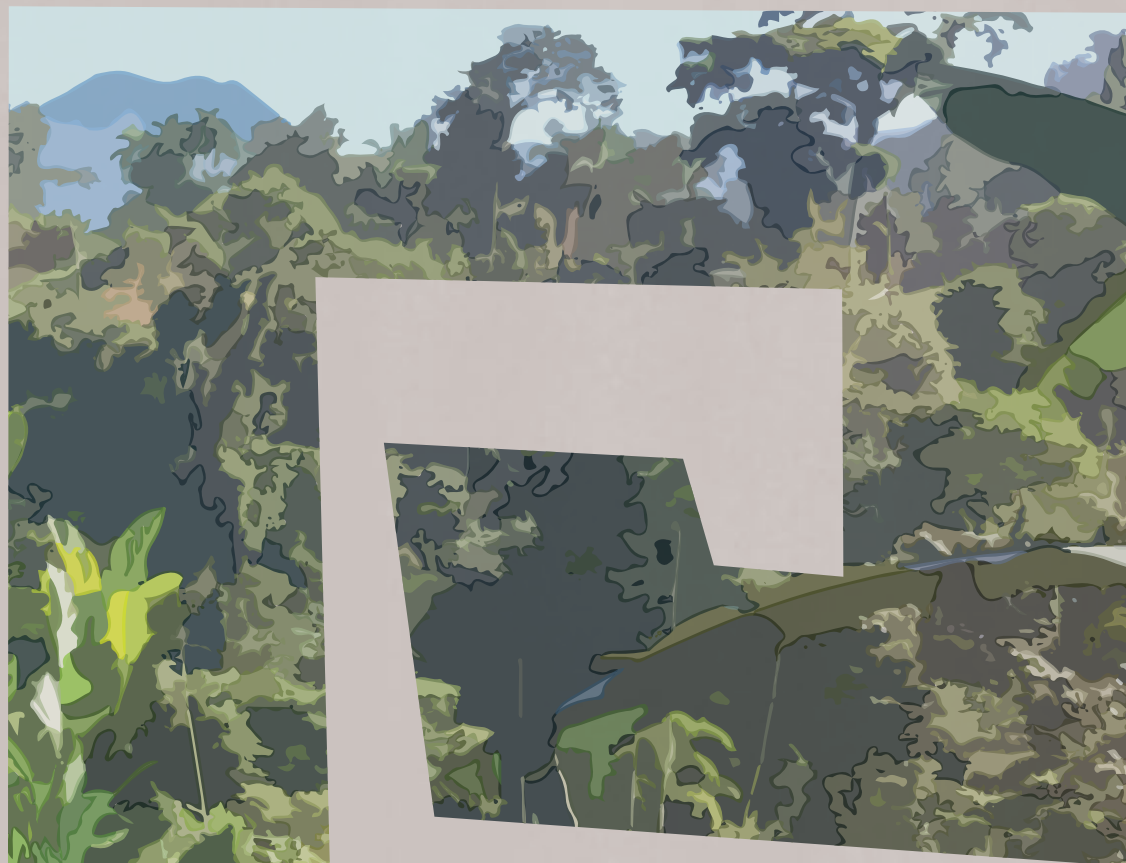


# THE EXPERIENCE OF THE GATI PROJECT IN INDIGENOUS LANDS



AGROECOLOGY  
AGROFORESTRY  
ENVIRONMENTAL RESTORATION



PROJETO GESTÃO  
AMBIENTAL E  
TERRITORIAL  
INDÍGENA

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photo base for previous page:  
Agroforest in the Guarani IL of Bracuí (2016)  
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# AGROECOLOGY, AGROFORESTRY, AND ENVIRONMENTAL RESTORATION IN INDIGENOUS LANDS: THE EXPERIENCE OF THE GATI PROJECT

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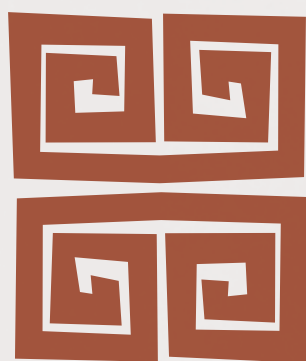
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# PREFACE



The purpose of this publication is to systematize initiatives in the areas of agroecology, agroforestry and ecological restoration carried out by the GATI Project in its five years of implementation in different regions of Brazil.

As they represent closely related and overlapping areas, the publication combines these three rather broad themes of agroecology, agroforestry and ecological restoration. In the context of Indigenous Lands (ILs), these themes bring together a body of traditional agricultural knowledge and practices with new and emerging demands, such as the need for the provision of healthy foods, conservation of natural environments and their resources, and restoration of degraded areas.



**Agroecology**, among the possible definitions, can be understood as the ecological management of natural resources through different forms of collective social action, with participatory development of proposals ranging from forms of production to the alternative distribution of products, with the establishment of production-consumption relationships capable of countering the ecological and social crisis...

(Embrapa's Group on Organic Agriculture and Agroecology)

**Agroforestry** (or agroforestry systems) is a collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used in the same management unit as agricultural crops and / or animals, either in some form of spatial arrangement or temporal sequence. In agroforestry systems there are both ecological and economic interactions among the different components.

(Lundgren and Raintree, 1982).

**Ecological Restoration** is the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed.

(International Society for Ecological Restoration, 2005)

To a large extent, even though the themes addressed in this volume constitute new names - in the sense of technical terms or concepts - for traditional practices, they are novelties in many ILs. Furthermore, since they represent relatively new and growing disciplines, combining technical and scientific knowledge with social and environmental activism, these themes bring not only new knowledge and techniques, but also an exposure to new paradigms, which seek to place the relationship of human societies and the environment within the logic of sustainability. It is important to note that although the GATI Project was responsible for bringing several such novelties in terms of concepts and approaches, the Project more often played the role of facilitator and supporter of existing processes and initiatives, to the extent that it found activities already underway in Reference Areas, resulting from the indigenous peoples' own interests or initiated with the support of partner organizations.

In systematizing the processes and dynamics related to the arrival of agroecology, agroforestry and ecological restoration in the ILs that are "Reference Areas" of the GATI Project, besides the Project's role as a "laboratory", in terms of presenting and testing new methodologies, approaches and practices, we also discuss its role as an "observatory". To that effect, the document will address: (1) the meaning and relevance of these themes in ILs, and how they vary in different regions / biomes as well as according to environmental and ethnic contexts; (2) the philosophy and initial assumptions guiding the approaches used by the Project; (3) the administrative mechanisms used to turn these approaches into concrete actions in ILs; and (4) how these approaches and mechanisms were received and appropriated by the indigenous communities, based on the analysis of examples from different regions. Finally, this analysis will draw on broader lessons about the themes of this publication, their inclusion in ILs, and implications for public policy.

This broader analysis will cover part of the history of the GATI Project, addressing regional and local contexts, Project background, and its connection to the parallel movement that resulted in the National Policy for Indigenous Territorial and Environmental Management - PNGATI<sup>3</sup>. Further information about the Project can also be found in the other volumes of the series “The Experience of the GATI Project in Indigenous Lands”.

This background of the Project, which will be further examined below, constitutes an important part of this history, as it sets the tone and direction for the actions of the GATI Project in ILs. As for the PNGATI, it is important to note that the relevance of the Project's actions, are established through the objectives set out in Axis 4 - *Prevention and restoration of environmental damage*. The objectives of this axis directly related to the themes of this book are:

- a) *to promote actions to recover and restore degraded areas in Indigenous Lands;*
- d) *to identify the native species of socio-cultural importance in Indigenous Lands and prioritize their use in agroforestry systems and in the recovery of landscapes in degraded areas;*
- e) *to promote the recovery and conservation of agricultural biodiversity and other natural resources essential to food and nutrition security of indigenous peoples, in order to value and safeguard traditional seeds and crops of each indigenous people;*
- f) *to promote actions for the recovery of degraded areas and environmental restoration in Indigenous Lands, and especially the prevention and combating of desertification.*

We can consider that the implementation of the GATI Project was a “laboratory” for the implementation of PNGATI, as the Project developed actions closely linked to the objectives of the Policy. At the same time, in its role as an “observatory”, the GATI Project also evaluated and analyzed how these themes are contributing to PNGATI implementation, in the broader sense of promoting well-being and consolidation of indigenous rights and leadership. The following chapters, besides addressing some of the actions carried out, attempt to bring some of this reflection and analysis.

<sup>3</sup> Decree Nr. 7747 of June 6th, 2012.





## BACKGROUND AND ASSUMPTIONS: INDIGENOUS PARTICIPATION AND LEADERSHIP IN THE GATI PROJECT

Between 2009 and 2010, the Interministerial Working Group (WG) responsible for the preparation of a draft National Policy for Territorial and Environmental Management in Indigenous Lands - PNGATI - was in charge of conducting five regional consultations with indigenous peoples and preparing the draft decree of the Policy. These regional consultations mobilized at least 1,240 representatives of 186 indigenous ethnic groups and discussed the items and objectives of the draft decree to be submitted to the National Commission on Indigenous Policy - CNPI - and the Civil House of the Presidency of the Republic.

Through this experience, it became clear that the consultation process, beyond mere compliance with the rules of Convention 169 on Indigenous and Tribal Peoples in Independent Countries, of the International Labour Organization (ILO)<sup>4</sup>, is a key tool for arriving at proposals for action that are more realistic and in tune with indigenous communities' demands. The PNGATI consultation process also provided a counterpoint to at least part of the issues related to Funai's performance as the indigenous agency, involving the difficulties of shifting from the practices inherited from

a patronizing past to the new realities of indigenous peoples. The Working Group also was a learning experience for those involved, as it was constituted of an equal number of indigenous and government representatives, thus permitting the exchange of knowledge, ideas and practices.

Approved by the Global Environment Facility (GEF) in October 2009, the GATI Project only began to operate in June 2010. This delay was due to the fact that most of the indigenous and government members of the "Indigenous - GEF" Working Group, responsible for preparing the Project, were also members of the PNGATI Working Group, and were fully involved in conducting the regional consultations at that time. Thus, Project activities only started after PNGATI's regional consultations were concluded. For those directly involved in Project implementation and for the indigenous and government representatives of the GATI Project Steering Committee, the positive experience of dialogue for setting out PNGATI was very present. As such, the approach for the implementation of the GATI Project could only build upon the principle of consultation and equal representation and governance.

<sup>4</sup> ILO Convention 169 was ratified in Brazil by Decree Nr. 5051 of April 19th, 2004.

Thus, from the beginning of its implementation, the GATI Project adopted the philosophy of consultation and participation of indigenous peoples, promoting internal discussions and debates by the communities involved regarding the management of their lands and natural resources, within a vision of social, environmental and economic sustainability and the well-being of the population. On the one hand, however, the Project sponsor, GEF, expected compliance with a pre-established schedule, which did not foresee another consultation phase and more meetings for explaining the project and its goals and for building closer ties with the communities of the Reference Areas ILs. That is, the regional consultations held in 2008, when the Reference Areas were selected, were considered a sufficient basis for starting actions in these ILs. On the other hand, the indigenous communities' previous experience with "projects" had been largely with top-down initiatives, without debate and discussion by the alleged beneficiaries. While these communities recognized the problems with this model of ready-made "project", without consultation, they were also in a hurry to see concrete actions taking place, because based on past experiences they feared that the project could end before bringing any tangible result. Also, although "environmental management" was being carried out in practice by indigenous peoples, in various cases it represented an unfamiliar concept, generating misunderstandings about the participatory methodologies and approaches adopted by the Project.

As for Funai, although it welcomed the prospect of conceptual and methodological innovations, the agency's local and regional reality results in enormous difficulties in its ability to meet the needs of indigenous communities. In this scenario, the demand for technical assistance cannot always be met by the Regional Coordination Offices, which find themselves absorbed in issues involving land tenure questions, invasions, and internal and external conflicts, among others.

The option for indigenous consultation and participation brought the possibility of incorporating in the Project's approach the so-called "participatory methodologies" developed in recent decades, especially in the component dealing with agroecology, agroforestry and environmental restoration. The participatory approach brings with it respect for and appreciation of indigenous knowledge, the dialogue between different types of knowledge, and the need for joint efforts instead of ready-made solutions. This approach also considers that indigenous peoples already carry out their own forms of territorial and environmental management, and it is not the Project's objective to "teach them", but rather to support and strengthen existing initiatives and encourage incipient ones. As for agroecology, agroforestry and environmental restoration, this approach emphasizes the importance of farmer-to-farmer "horizontal training", with the exchange of information and practices among peers.



It is important to stress that in relation to the current approach of agroecology practiced in Brazil, the set of concepts involved are not only technical but also political and ideological. In order to avoid the mere importation of a set of external concepts and practices, the GATI Project sought to reinterpret and adapt them, so that initiatives would configure an “indigenous agroecology”. In this perspective, it was gratifying to note that when indigenous peoples participated in various regional and national agroecology forums, their knowledge was recognized and valued, reinforcing this idea of the importance of an indigenous agroecology.

After five years of Project efforts, we evaluate that choosing the path of indigenous consultation and participation, although initially slowing down actions, in the long run brought more solid results. In late 2015, workshops for systematizing Project results were carried out by IEB with participation of indigenous representatives of Reference Areas, Steering Committee members, members of the Project Management Unit (UGP), and regional consultants. The workshops highlighted as positive the actions resulting from the choice of this path, summarized below:

- training, courses and exchange visits met the interests and needs of communities;
- exchange visits, in particular, enabled sharing of information among indigenous peoples, allowing practical learning and reflection;
- training in agroecology and agroforestry constituted moments of practical and participatory learning;
- encouraging the recovery of traditional seeds valued traditional knowledge and helped safeguard knowledge and practices;
- the support for management activities already underway by indigenous peoples brought direct benefits to communities;
- encouraging the initiatives of villages by means of Micro-projects enabled communities to take a leading role in actions, in many cases, allowed to them to resume working with initiatives that for various reasons had stopped.

The following section presents a brief explanation of the regional, environmental and historical contexts that influenced the manner in which the themes of agroecology, agroforestry and forest restoration were included in the GATI Project.

Explanations about agroecological cultivation of vegetables during visit to the agroforestry module of Teacher Sebastião, Buriti Village, Cachoeirinha-MS IL (2016) >

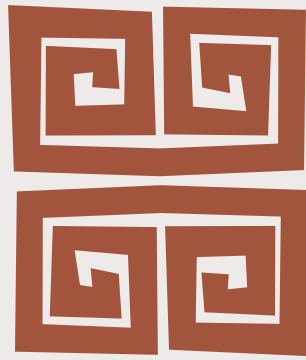






# REGIONAL, ENVIRONMENTAL AND HISTORICAL CONTEXTS





Indigenous agriculture, which has traditionally sustained peoples for millennia, was originally practiced without any chemical inputs or pesticides, and the circulation and conservation of seeds and other propagating materials occurred by means of cultural mechanisms and social networks. Growing trees as part of agricultural systems is a practice associated with the beginnings of agriculture, and

continues to be widespread, particularly in the form of fruit tree homegardens around houses and villages. For many ethnic groups, especially in the Amazon, the cultivation of fruit trees and other useful species can also be extended to nearby fields and secondary vegetation areas, resulting in concentrations of useful trees around the villages and dwellings.



View of the Bacajá Village, in the Trincadeira-Bacajá IL (PA), of the Xikrin tribe, showing the gardens of fruit trees surrounding the houses

In general, the reduced size of the territories that characterize the vast majority of ILs not located in the Amazon region result in a greater interest in agroecology, agroforestry and ecological restoration. Differently from the Amazon, where there is usually enough territorial space to develop traditional slash-and-burn agriculture without affecting environmental sustainability, in smaller ILs the use of the same technique without enough time for

fallow<sup>5</sup> usually leads to soil degradation and loss of agricultural productivity. The very lack of forest areas where slash-and-burn techniques can be used can also lead to other forms of agriculture, more dependent on mechanized land preparation and use of external inputs such as chemical fertilizers, herbicides and additives - the so-called “Green Revolution” model.

<sup>5</sup> Fallow is the variable period of time in which a field is left uncultivated, during which the growth of natural vegetation recovers soil fertility, at least partially.



While in the Amazon region, indigenous peoples generally practice traditional agricultural systems, with little use of mechanization, chemical inputs, and hybrid seeds, in other regions of the country the situation is quite different. In many cases, profound changes took place in agricultural production systems, a result of the influences of Funai, extension agencies, or farmers neighboring ILs. However, a

counter movement is now emerging, as this new agricultural model has a number of shortcomings regarding its suitability to the reality of indigenous peoples and has often brought serious problems to communities. At the same time, the search for a healthier agriculture, which causes fewer environmental impacts, also has become part of the indigenous peoples' struggle for land and rights.

Cassava harvest in the  
Wajãpi IL (2009)





Agricultural and land use models that caused the loss of forest cover in ILs also have brought about shortages of forest resources that are important for the livelihood of indigenous peoples, such as raw materials related to basic needs, including wood and thatch for housing, material for crafts, firewood for cooking, as well as plants used as remedies, in rituals, and other uses. In addition, loss of forest cover reduced habitat for game animals and led to the degradation of water resources.

Given this situation, agroforestry initiatives that can combine food production with the restoration of forests may, at least partially, address the loss of forest resources. However, there are factors of scale that need to be taken into account, because while agroecology and agroforestry initiatives can be

implemented in relatively small areas, such as in backyards or next to a school, ecological restoration generally operates on the landscape scale. This entails a number of challenges, since working at the landscape scale involves other factors, such as the internal social divisions that govern the use of territory and natural resources, or external environmental pressures such as fire and the entry of cattle, among others. For example, a technology for planting trees that shows good results in yards or homegardens may not be the most suitable for restoring degraded vegetation around springs and riverbanks, where there another set of customs and rules of communal use may apply. As such, undertaking ecological restoration initiatives in ILs demands not only technical knowledge and actions, but also sociological approaches and understanding.



Nhanderu Guaraní Kaiowá blessing seeds and seedlings during the Mosarambihára training in Jaguapiré IL (2015)

Regarding the demand for ecological restoration, both in the process of formulating PNGATI and in the experience of the GATI Project, marked regional differences were observed. Especially outside of the Amazon, a significant number of ILs show situations where the recognition of indigenous peoples' rights resulted in the recovery of their traditional territories. However, many of these recovered territories are in advanced stages of deforestation and environmental degradation, the result of conversion of forest to agricultural crops and pastures, and have lost many forest resources important for indigenous subsistence and culture, along with associated ecosystem functions. In the Potiguara IL (Paraíba), an example that will be addressed in greater detail in this text, the recovery of traditional territory resulted in the occupation of areas that had been cleared for sugarcane plantations, where the native vegetation of the coastal tablelands and riparian forests had been suppressed. Mainly for this reason, and by choice of the indigenous peoples themselves, the actions of the GATI Project in agroecology, agroforestry and environmental recovery found greater resonance in Reference Areas outside the Amazon. Nevertheless, the GATI Project also supported some interesting initiatives in ILs in the Amazon region.



^  
"Holy water" oratory in spring area  
in Mangueirinha IL (2016)

It is important to note that ecological restoration initiatives are also associated with issues that go far beyond food and timber production and provision of environmental service. In ILs, the work with forest restoration and protection of springs and other water bodies often has a cosmological dimension, as these places are considered as special or sacred, and are protected by supernatural entities. This spiritual dimension reinforces the importance of indigenous peoples being protagonists in the design and implementation of ecological restoration initiatives in their lands.





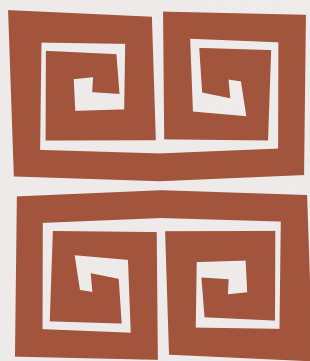




One of the waterfalls in Mangueirinha IL,  
which are called "holy waters" (2014)



MECHANISMS SUPPORTING  
ACTIONS IN AGROECOLOGY,  
AGROFORESTRY AND  
ENVIRONMENTAL RESTORATION  
IN THE GATI PROJECT



This section details the mechanisms used by the GATI Project to put into operation initiatives in agroecology, agroforestry and environmental restoration. It is important to note that the regional consultants hired by the Project, and responsible for the Regional Centers, were key components in this equation. These consultants assessed indigenous demands and local needs, and were the liaisons for coordinating the support of the Regional Coordination Offices and Local Technical Coordination Offices of Funai, technicians and partner institutions, both governmental and from civil society.

The systematization of the experiences of the GATI Project indicated different mechanisms considered effective in meeting the interests and needs of communities

regarding the themes of this volume. At the local level, regional consultants were in charge of putting into operation the mechanisms offered by the Project for the implementation of planned actions, making the link with the Project Management Unit in Brasília. Broadly speaking, these actions can be separated into training and knowledge exchange, through workshops, courses, exchange visits, seed fairs, and support or encouragement of activities implemented by indigenous peoples themselves in their communities, through mechanisms such as Micro-projects or the PPP-GATI projects. We can also include in this second category the purchase of equipment and supplies, either through Funai's regional offices, in the case of larger purchases, or through simplified procedures with Project funds, for smaller purchases.



The following section presents a description of these mechanisms and their initiatives.

## EXCHANGE ACTIVITIES AND VISITS

Exchanges proved a very valuable tool for providing direct dialogue among indigenous peoples. When exchanges were local, they helped strengthen local networks of exchange and solidarity. Appropriation of new themes, such as agroecology concepts and techniques, was facilitated through the exchange activities and the construction of new forms of action based upon indigenous knowledge.

The most significant exchange activities related to the themes of this volume are set out below.

- Visit of 10 indigenous representatives of the Terena and Guarani-Kaiowá peoples of Mato Grosso do Sul and Funai employees to the experience of restoration of riparian forests in Araribá IL (SP) and of agroforestry in Cooperafloresta in Barra do Turvo (SP), where they exchanged experiences with family farmers (April 27<sup>th</sup> to May 6<sup>th</sup>, 2013);
- Visit of 23 indigenous representatives of the Xokleng people of the Ibirama IL (SC) to Cooperafloresta (SP), along with another 5 participants, including regional consultant, collaborator, Funai staff, and staff of the SC-Rural Program (May 2<sup>nd</sup> to 6<sup>th</sup>, 2013);

- Visit of 12 indigenous representatives from the Pankararu and Kiriri ILs to the Cerrado Fruits Project and Fruta Sã agribusiness in Carolina (MA), to learn about fruit pulp processing techniques (July 6<sup>th</sup> to 12<sup>th</sup>, 2013);
- Visit of 15 indigenous representatives of the Bakairi people to the Barranco Vermelho Village of the Rikbaktsa people (MT) to learn about sustainable extractivism projects and best management practices for rubber tapping and Brazil nut collection (July 31<sup>st</sup> to August 8<sup>th</sup>, 2013);
- Visit of 13 indigenous representatives of the Xokó people to the Agroecology Project of the Pajeú Division of the Sabiá Agroecology Center (August 11<sup>th</sup> to 14<sup>th</sup>, 2013);
- Visit of indigenous representatives of the Guarani Kaiowá and Terena peoples of Mato Grosso do Sul and Funai staff to indigenous training centers in the Amazon, as part of discussions on the subject of training in indigenous land management in their regions (June 11<sup>th</sup> to 21<sup>st</sup>, 2013);
- Visit of indigenous representatives from the Southern Atlantic Forest and Southeast and Funai staff to indigenous training centers in the Amazon, as part of discussions on the subject of training in indigenous land management in their regions (May 15<sup>th</sup> to 25<sup>th</sup>, 2013);
- Visit of Tupinikim and Guarani (ES), and Xacriabá (MG) representatives to the Grande Sertão Cooperative and to the Agroecology Experimentation and Training Area of the CAA in Northern Minas Gerais (May 8<sup>th</sup> to 17<sup>th</sup>, 2015);



- Visit of representatives of ILs of the Project's Southern Atlantic Forest Regional Center, technicians of Funai and partner institutions to learn about agroecology and agroforestry experiences in Cooperafloresta in Barra do Turvo (SP) (with support by Funai-CTL / SP and CATI; September 10<sup>th</sup> to 13<sup>th</sup>, 2014 and September 29<sup>th</sup> to October 3<sup>rd</sup>, 2014);
- Visit of 8 Guarani representatives of the Caieiras Velhas II (ES) IL to the Guarani Bracuí (RJ) IL and Ribeirão Silveira (SP) IL to learn about experiences in agroecology, reforestation and ethnoecotourism (June 1<sup>st</sup> to 7<sup>th</sup>, 2015);
- Visit of 26 Guarani and Kaiowa participants of the Mosarambihara Training Program and Funai staff to learn about agroforestry systems in the Lagoa Grande Settlement (Itahun-MS) (October 12<sup>th</sup>, 2015);
- Visit of 11 indigenous representatives of the Terena people, including teachers, leaders and parents from Cachoeirinha (MS) IL, to learn about the environmental education initiative conducted in the Te'yikue Village (Caarapo IL-MS) and agroforestry systems in the Lagoa Grande Settlement (Itahun-MS) (November 17<sup>th</sup> to 21<sup>st</sup>, 2015).

The exchange activities, especially those involving interstate travel, mobilized the efforts of a number of people, being organized by the regional consultant in direct contact with the Project Management Unit, and involving diverse logistical aspects, such as initial contacts, transportation, accommodation, food, and other details.



Indigenous individuals getting to know Mr. Milton's agro-system in the Carro Quebrado community (Triunfo-PE), in exchange visit organized by the Sabiá Center and GATI Project (2014)





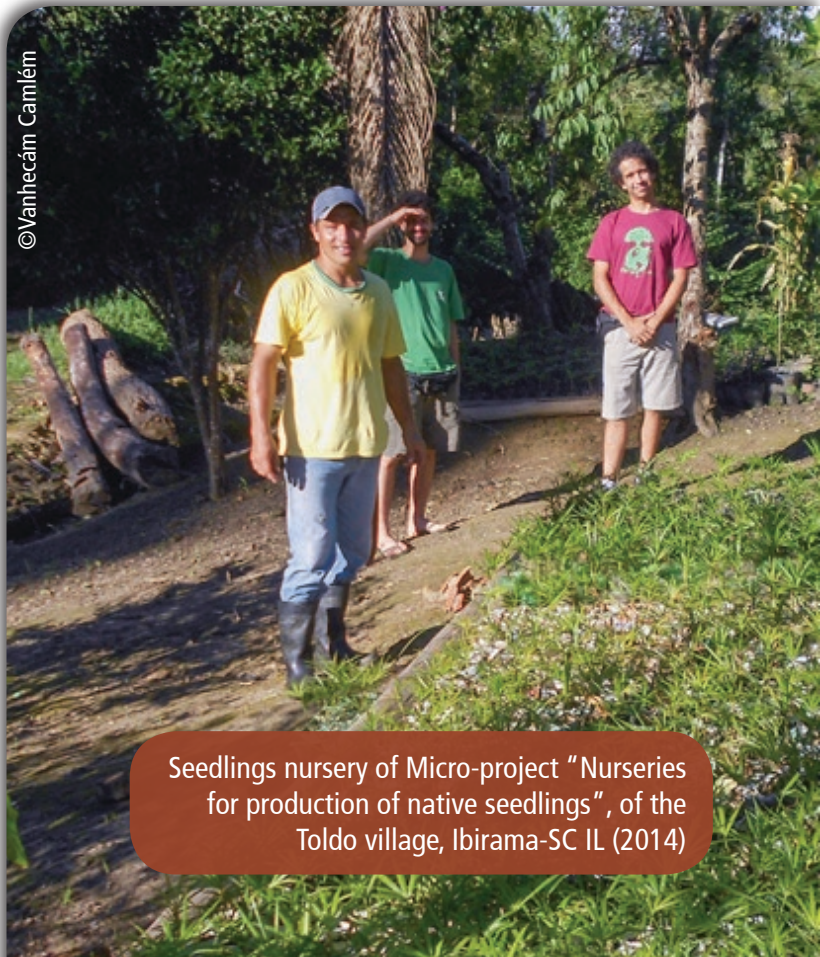
## MICRO-PROJECTS

The Micro-projects were carried out through individual credits of up to R\$ 4,000.00, in two installments, and supported small-scale initiatives involving agroforestry, agroecological crop production, environmental education, traditional practices and knowledge, among other themes. They involved minimal red tape, and were easily implemented by indigenous representatives. In various situations, they served to complement and strengthen larger projects and other ongoing initiatives, providing an additional injection of manpower and/or supplies.

To access the credit, it was necessary to submit a simplified proposal, usually filled out with the assistance of the regional consultant, to the Project Management Unit, accompanied by a letter from the community endorsing the proponent. After receipt and registration at the Unit, proposals were analyzed by technicians at CGGAM / Funai. When approved, the initial installment was deposited in the applicant's bank account. The second installment was released after submission and analysis of a simple report, preferably with photos of the activities and results. The assessment of the implementation of the proposal was based on the demonstration of results achieved, without the need for rendering of financial accounts, invoices or receipts. Still, it was recommended to the applicants that they should keep any such records for the purpose of accountability with their community. The closure of Micro-projects also took place through a simple report, with photos and some basic questions for evaluation.

Out of the 149 Micro-projects supported, about half addressed agroforestry and reforestation initiatives.

It is important to note that the Micro-project mechanism conferred visibility and brought support to many genuinely local initiatives. The Project identified that in many situations, there are individuals interested and willing to work with agroforestry and reforestation, but they lack the necessary support to carry out their ideas. Communities recognize the individuals that have this vocation, and demonstrated this through the formal endorsement letters required for approval of the Micro-projects.



©Vanhecám Camlém

Seedlings nursery of Micro-project "Nurseries for production of native seedlings", of the Toldo village, Ibirama-SC IL (2014)

## ACQUISITION OF EQUIPMENT AND SUPPLIES

The history of projects with indigenous peoples is full of examples of equipment and supplies which are purchased and are not used, and sometimes even abandoned or damaged, because of the lack of technical support and training for their installation, use and maintenance, among other factors. For these and other reasons, the GATI Project placed a greater emphasis on the strengthening of social capital rather than in the acquisition of supplies and equipment. Nevertheless, activities often required materials and supplies. They were purchased through three main mechanisms:

- for small values, such as purchasing materials for workshops and similar activities, consultants used a petty cash mechanism, of up to R\$ 500.00;
- for amounts up to US\$ 2,500.00 (ceiling established by UNDP), purchases were made through a simplified bidding process, with a minimum of three bids from suppliers;
- larger purchases were made with Funai resources through bidding processes (electronic auction) administered by the Regional Coordination Office-RCO. It is important to highlight that not all RCOs have personnel qualified for this procedure, which is quite complex, and even in RCOs qualified for the procedure, the Project had to compete with other regional needs.

## SMALL CONTRACTS FOR TECHNICAL SERVICES

In many situations, regional consultants diagnosed the need for training or technical support on a specific topic. To meet these needs, the Project used a mechanism for contracting technical services, of up to US \$ 2,500.00 (ceiling established by UNDP). Technicians hired through this mechanism carried out ad-hoc and short duration activities, and from 2013 to 2016, a total of 34 small contracts were signed to hold workshops, training and similar activities, also including production of materials and audiovisual recording of activities. Part of the services were directed towards assisting indigenous organizations in preparing project proposals for other funding sources, and subsequently in monitoring and technical guidance in project execution.

In most cases, hiring was requested by regional consultants, who helped draw up the terms of reference of the contracts, defining the goals and deadlines, among other aspects.





## LETTERS OF AGREEMENT

The Letters of Agreement were partnerships established between Funai, UNDP and regional institutions with experience of working with indigenous peoples and demonstrated expertise in a particular theme. The transfer of funds for partner institutions to develop specific actions in Reference Areas took place through Letters of Agreement, deepening and broadening Project execution.

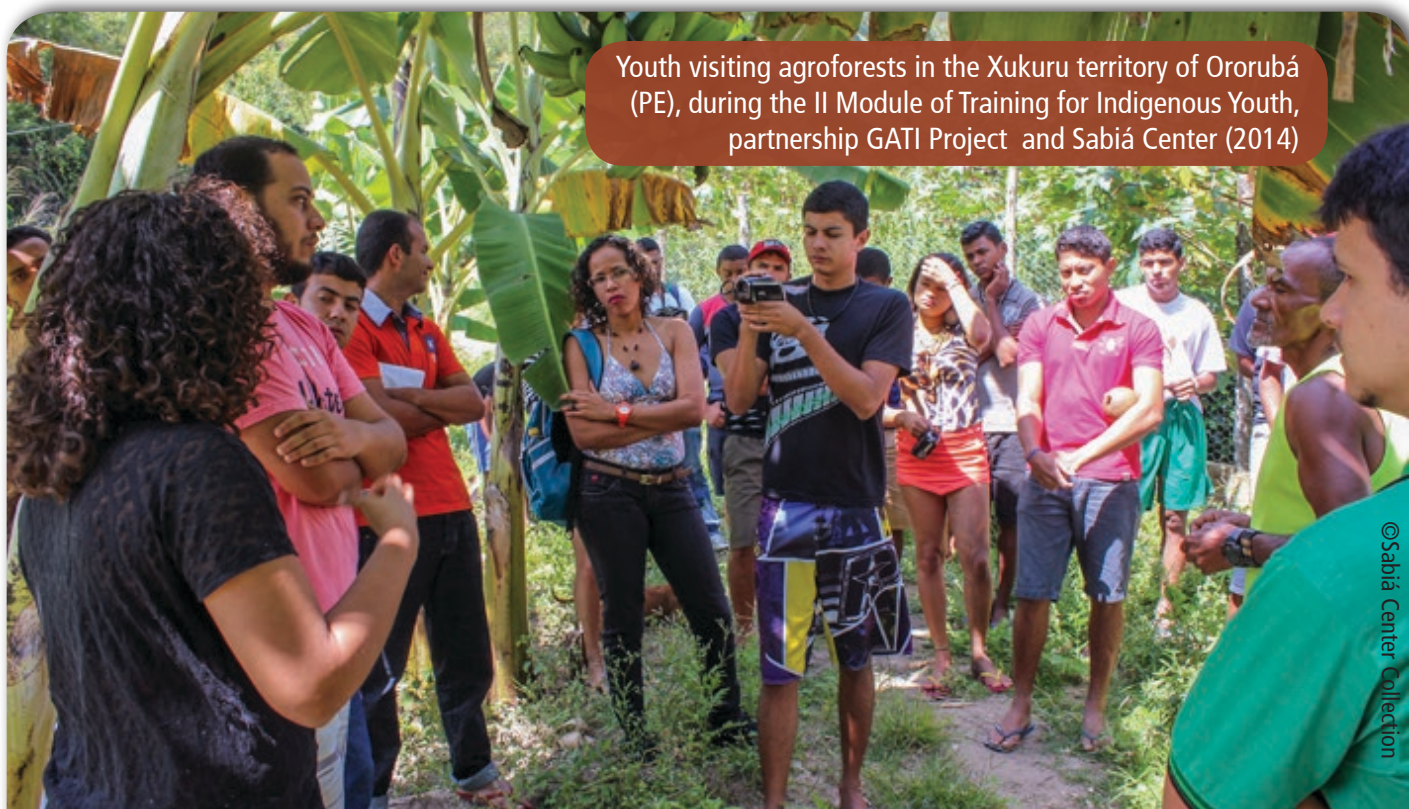
Seven letters of agreement were signed, and three had specific relevance to the themes of agroecology, agroforestry and environmental restoration. These were:

### CENTRO DE DESENVOLVIMENTO AGROECOLÓGICO SABIÁ

The Sabiá Agroecological Development Center is a non-governmental organization

based in Recife with over 20 years' experience working with farmers in Pernambuco's *Zona da Mata* forest area and the semiarid (Caatinga) region. Through partnership between the GATI Project and the Sabiá Center, training and technical assistance activities were developed in the ILs Entre Serras (PE), Kiriri (BA) and Potiguara (PB), all in the Project's Northeast I Regional Center. The Sabiá Center carried out several activities to support the implementation of agroforestry, such as the installation of seedling nurseries, workshops, technical assistance, and held the "Training Course for Young Indigenous Multipliers in Agroecology in Indigenous Territories". This course was divided in three modules and held in different indigenous territories: Pankararé (Glória / BA), Xucuru de Orubá (Pesqueira / PE) and Potiguara (PB). The goal of the course was to train indigenous youth so that they can implement projects in their communities and provide technical support, as multipliers of knowledge related to agroecology.

Youth visiting agroforests in the Xucuru territory of Ororubá (PE), during the II Module of Training for Indigenous Youth, partnership GATI Project and Sabiá Center (2014)



## CULTURAL ASSOCIATION OF INDIGENOUS PRODUCERS - ASCURI

To develop actions in the Guarani and Kaiowá Reference Areas in Mato Grosso do Sul (Pantanal / Cerrado Center), the GATI Project signed a Letter of Agreement with the Cultural Association of Indigenous Producers - ASCURI to implement the Mosarambihára-Sowers Training Program. Even though the Guarani and Kaiowá ILs had submitted requests for agroforestry initiatives combining *erva mate* (*Ilex paraguayensis*) and a variety of native trees, it was seen that these activities should be integrated into a broader discussion, recognizing and valuing the traditional knowledge of the Guarani and Kaiowá peoples. In this perspective, the Mosarambihara Program was designed in

conjunction with indigenous councilors and other leaders as an initiative of the GATI Project. The program involved the three Reference Areas - Pirakuá, Jaguapiré and Sassoró as well as the Caarapó and Panambizinho ILs, included because of their experiences with agroforestry and environmental restoration. The program was implemented through itinerant modules, with one module in each IL, with activities involving ethno-mapping, agroecology, seedling nurseries, collecting seeds of forest trees, and environmental restoration, according to the initiatives in progress in each IL. Besides holding the modules, the ASCURI team carried out monitoring and the “pre-modules”, which prepared the communities for receiving the modules carried out in each IL. In keeping with ASCURI’s line of work, workshops in photography and video production were also held.



Teacher Eliel Benites makes a simulation of the seedlings arrangement for planting around a spring during a Mosarambihára module in Jaguapiré IL (2015)

Mosarambihára students in recovery activities around a spring in Jaguapiré IL (2015)





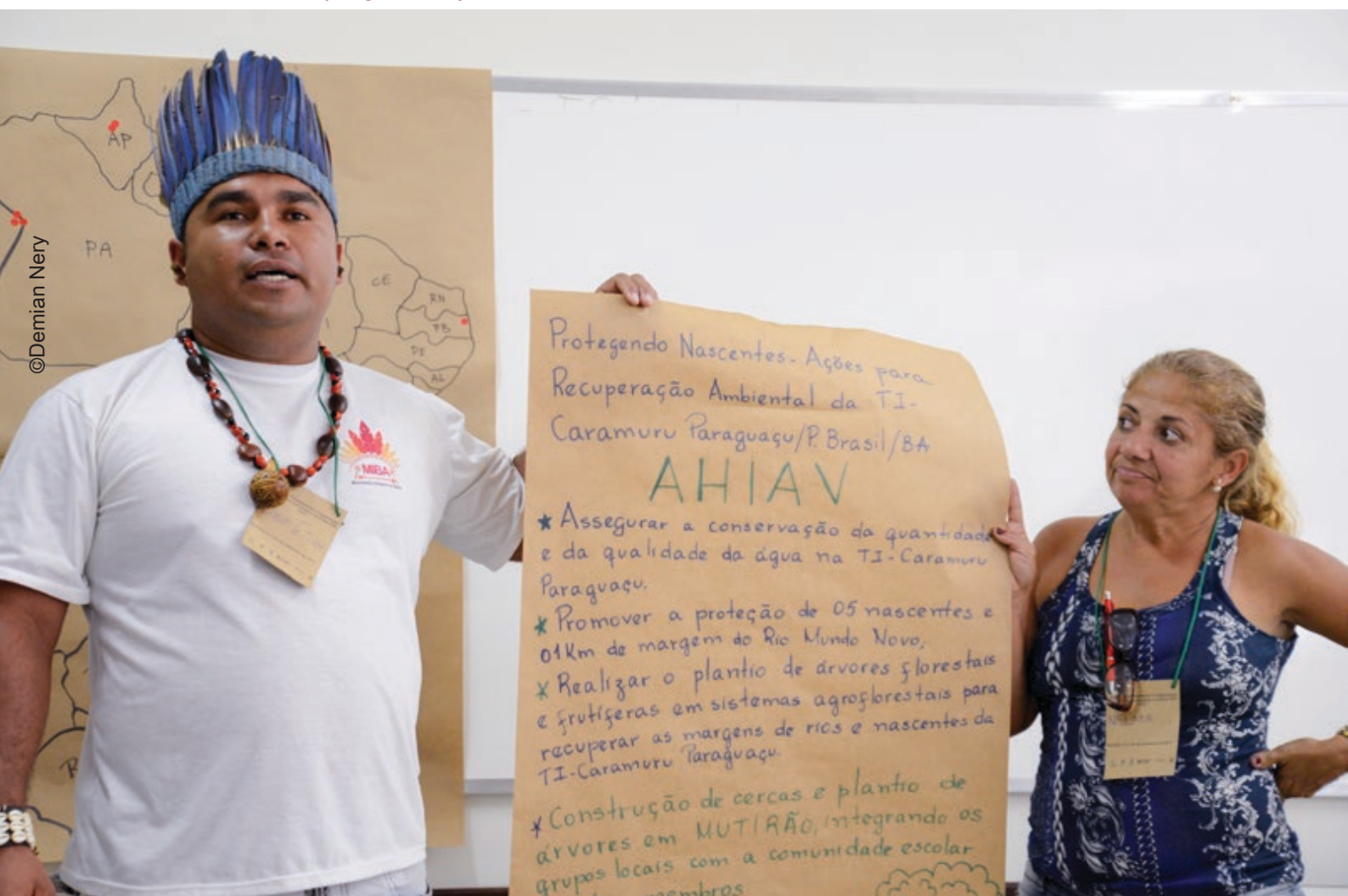
## INSTITUTE FOR SOCIETY, POPULATION AND NATURE - ISPN (BRASÍLIA)

Another important mechanism to support and strengthen ongoing initiatives was the Program for Small Projects in Indigenous Territorial and Environmental Management (PPP-GATI), developed with support of the Institute for Society, Population and Nature - ISPN, through a Letter of Agreement with the GATI Project. The Institute brought its

20 years of experience with the Global Environment Facility's (GEF) Small Grants Program, adapting its methodology to GATI Project needs. The PPP-GATI projects, of up to R\$ 40,000.00, were directed to indigenous associations or their partner organizations, with first installments paid in November / 2015 and throughout 2016.

Out of the 37 projects approved for 26 Reference Areas, approximately half involved environmental recovery and agroforestry initiatives.

- ✓ Presentation of project of Caramuru-Paraguassu IL in the PPP GATI workshop organized by ISPN in Brasília (2015)

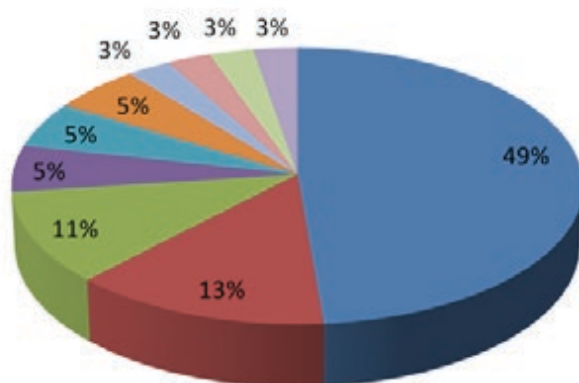






Planting of rubber trees in degraded pasture in Araribá-SP IL, supported by PPP-GATI Project

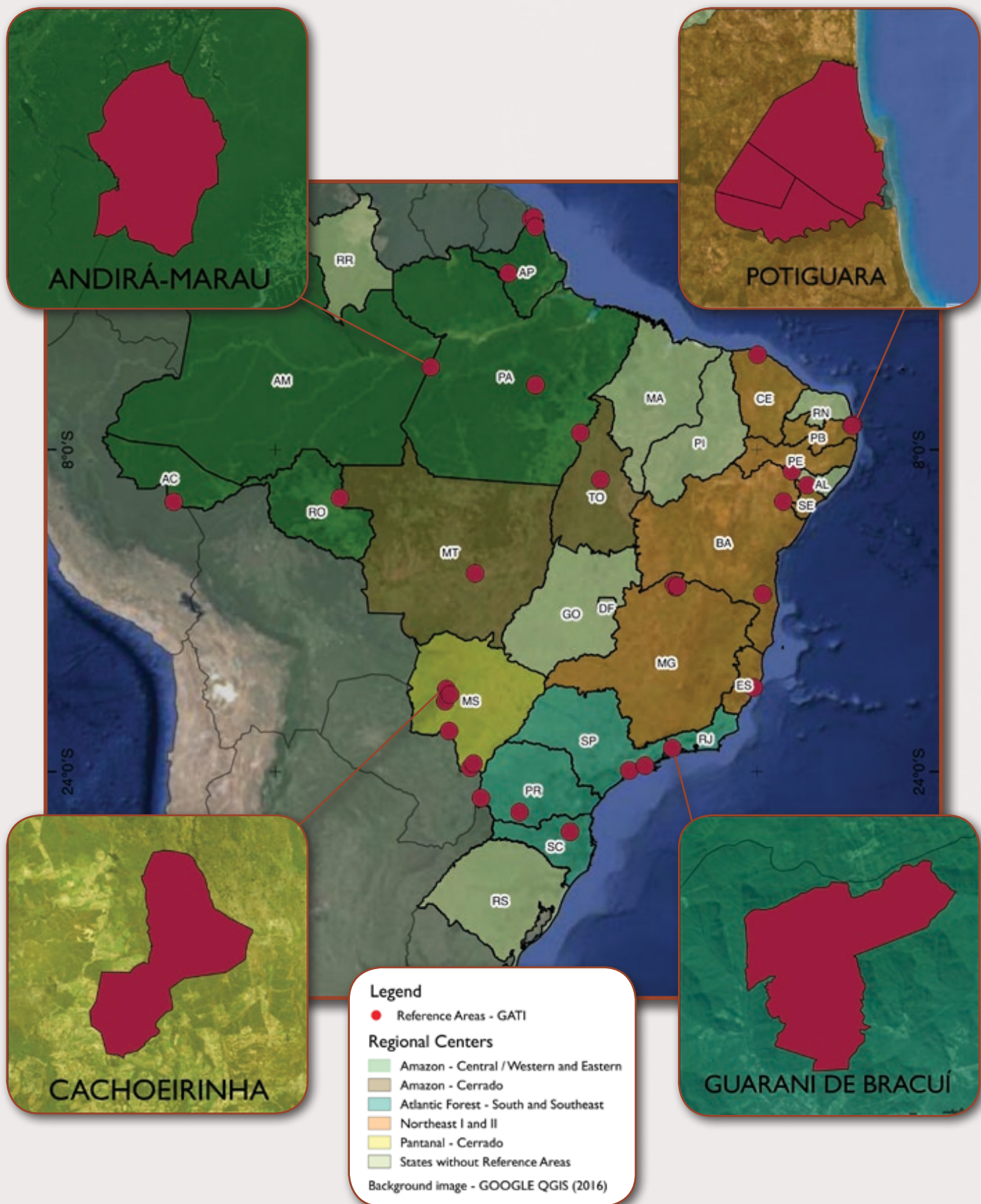
✓ Distribution of the 37 PPP-GATI projects according to themes



- Agroforestry
- Environmental recovery
- Animal husbandry
- Traditional construction / architecture
- Management
- Surveillance and monitoring
- Agroecology
- Apiculture
- Extractivism
- Fire management

REGIONAL EXPERIENCES OF  
THE GATI PROJECT WITH  
AGROECOLOGY, AGROFORESTRY  
AND ENVIRONMENTAL RESTORATION









# NORTHEAST I REGIONAL CENTER: ENVIRONMENTAL “MOVEMENT” IN THE POTIGUARA INDIGENOUS LAND

The Potiguara people of Paraíba live in a coastal strip of the Atlantic Forest between the Camaratuba (north) and the Mamanguape (south) Rivers, in a territory maintained at the expense of resistance against diverse invaders at different times in history.

The environmental status of the Potiguara territory is directly related to the struggle of indigenous peoples for their permanence in the area and the demarcation of the territory. In the early twentieth century, the area of the old villages where the Potiguara lived had already been partially subdivided, leased and sold to large landowners. Among these owners, the Rio Tinto textile company invaded large areas of indigenous land, cutting hardwoods to build their factory and for production of charcoal to feed their machines.

The greatest devastation, however, was caused by the arrival of sugarcane plantations and ethanol distilleries in the late 1970s, stimulated by the National Ethanol Program. These invaded the Potiguara territory, attracted by the flat lands of the tablelands<sup>6</sup>, and suppressed important fruit

collection areas for mangaba (*Hancornia speciosa*), cashew (*Anacardium occidentale*) and batibutá nut (*Ouratea hexasperma*), replaced by sugarcane monoculture. Given this situation, the Potiguara people intensified their mobilization for the demarcation of their territory, and the first part was demarcated between 1983 and 1984, the Potiguara IL. However, this demarcation left out important areas for the indigenous peoples, who continued to struggle and in 1993 managed to approve the Jacaré de São Domingos IL.

The last Indigenous Land to be demarcated, the Potiguara of Monte Mor IL, was reconquered by the Potiguara people through the occupation of sugarcane plantations with crops and *sítios*<sup>7</sup>. When the sugarcane was harvested, the indigenous peoples immediately planted cassava intercropped with cashew, coconut and other fruit trees of interest, establishing the *sítio* where soon simple houses would be built. Thus, the sugarcane plantations were gradually expelled from the territory, and reforestation began and continues to be used by the Potiguara people as a strategy to take back their territory.

<sup>6</sup> The tablelands (*tabuleiros*) are higher and flatter areas of the territory dominated by trees such as mangabeira and cashew, guaranteeing the survival of families dedicated to the collection of these fruits. This category coincides with what geography names Coastal Tablelands.

<sup>7</sup> The Potiguara people call *sítio* an area of fruit trees and other trees around the houses (agroforestry homegardens).



Cassava plantations where there used to be sugarcane crops (2008)



In many of the over 30 villages in the territory there are people dedicated to the production of tree seedlings and reforestation around springs and in riparian areas as well as in the tablelands. The larger schools develop environmental education activities to maintain seedling nurseries, organic vegetable gardens, and also conduct field classes and collective reforestation events.

The local Funai office, through its coordinator, Irenildo Gomes, and some leaders strive to monitor the territory, curbing the action of illegal loggers. Another staff of the local Funai office, Luiz Pereira, is a Potiguar and agricultural

technician; he supports local production of seedlings of native and fruit trees as well as reforestation initiatives, and maintains a seedling nursery in the backyard of his home in the village Camurupim.

There are also ad-hoc initiatives by some leaders seeking to promote alternative activities to sugarcane plantations, extraction of hardwoods and charcoal production. The São Francisco village, the “mother village”, has been seeking ways to strengthen mangaba pickers, whose survival depends on preserved tablelands: mangaba seedlings are being produced continuously to enrich the tablelands.



Mangaba seedlings in Alcides Potiguara's nursery, supported by Micro-project (2014)





Chiefs of villages such as Lagoa do Mato, Cumaru and Tracoeira seek to curb deforestation in their lands. In the Monte Mor village, the chief promoted organic horticulture and fruit production and built partnerships with the local government and university for distribution and commercialization of products. At the same time, the area that had been cleared for sugarcane has been reforested by planting crops and fruit trees, starting from the banks of the river that flows through the village. Stretches of the river that were almost dry are now recovering, along with many springs that had dried up.

This was the scenario found by the GATI Project in May 2012, when the clarification meeting took place in the Potiguara IL, starting off Project actions in this Reference Area. From then onwards, in close dialogue with the local Funai office, groups and individuals of the Potiguara territory involved with environmental management actions were identified and invited to develop proposals that could strengthen such initiatives.

With the operational and financial difficulties faced by Funai, the strategy of small grants through the Micro-Projects under GATI Project, up to R\$ 4,000.00, proved to be well suited to local conditions, expediting investment in actions of interest and relevance to the Potiguara people in the environmental conservation and recovery of their territory.

Between 2014 and 2015, six Micro-projects were implemented, with five focused on expansion of seedling nurseries in backyards and one for the installation of identification signs in areas defined by the Potiguara as important for environmental conservation and recovery or of cultural importance. A total of 41,000 seedlings were produced in five small nurseries belonging to: Josecy, the shaman, and José Alberto, both from Três Rios village; Anibal, chief of the Jaraguá village; Alcides, chief of the São Francisco village; and Marcos, of the Lagoa do Mato village. The seedlings were donated to schools that carried out reforestation events and were also used in the implementation of experimental agroforestry systems.

The following results can be highlighted: reforestation of degraded areas in several villages, totaling approximately 60 hectares; diversification of crops produced by several farmers with the planting of fruit seedlings; and support for environmental education activities. According to beneficiaries and local Funai technicians, Micro-projects valued and gave visibility to environmental management initiatives in the villages. The Micro-projects dedicated to seedling production also contributed to the implementation of experimental agroforestry and environmental education activities in schools<sup>8</sup>.

8 Source: *Report on Micro-projects for Reforestation in the Potiguara Indigenous Land in the State of Paraíba*, prepared by Luiz Pereira, technician of CTL Baía da Traição, through MEMO 020 / CTL-BT-PB / FUNAI. Baía da Traição. February 19th, 2015.



Reforestation action on the Moças Island carried out by the Cacique Iniguaçu School, in Tramataia village (2014)



Experimental agroforestry systems (AFS) were introduced through a partnership (Letter of Agreement) between the GATI Project and the Sabiá Agroecological Development Center. Through workshops and almost weekly technical assistance to indigenous farmers, the agroforestry systems were established and continue to be managed in eight parcels in four villages: Jacaré de São Domingos, Jacaré de César, Galego and São Francisco.

The Sabiá Center also invested in the training of Potiguara youths, who participated in an agroecology program organized in three itinerant modules held in other indigenous territories and also in the Potiguara territory. In the training they were able to meet with other experiences and situations, especially that of the Xukuru Ororubá people, who have developed actions to safeguard traditional Xukuru agriculture.

In addition to the indigenous youths, teachers, leaders and Potiguara farmers also participated in exchange activities to learn from other communities assisted by the Sabiá Center. In these other communities, farmers have consolidated agroforestry systems: they produce, process and market production ensuring household food security and generating income.

The role of schools was also instrumental in this process. Some of the schools working with environmental issues in their curricula and which have been involved in initiatives of the GATI Project are: Pedro Poti in São Francisco village, Cacique Iniguaçu in Tramataia village, Guilherme da Silveira in Monte Mor village, the school in the Akajutibiró village and in the Três Rios village.

Every year, the Cacique Iniguaçu School of the Tramataia village celebrates Environment Week, when it presents the initiatives developed by the school to the community, including the reforestation of an area known as Moças Island. It is one of the schools that received donations of seedlings from Micro-projects and the principal participated in the agroecology workshops and exchange activities developed by the Sabiá Center. In 2015, an association managed by school teachers approved a project through the PPP-GATI call with the objective of expanding the area being reforested, conferring greater visibility to the Environment Week, and providing exchange activities among schools working along the same lines and involved with actions of the GATI Project. The school principal and teachers who submitted the project proposal said that “the call for projects came at the right time, because we were already doing this even without funds”. With the Project, they will reach a wider audience, produce more seedlings, and expand the reforestation site adopted by the school.

Both the local Funai and the Potiguara representatives involved in the actions of the GATI Project positively assess the actions supported by the Micro-projects and the Sabiá Center, highlighting the valuation of indigenous knowledge and support for environmental management initiatives led by the Potiguara people themselves. They also report that previously, when they spoke about preservation, the community laughed and would not take the subject seriously, but today many people see the importance of thinking about environmental quality for future generations.



The interaction of these initiatives and actions seems to have caused a real “movement” with regard to environmental issues in the territory and contributed to the strengthening of the Avenças Environmental Group of the São Francisco village. The young coordinator of the group, Guaracy, said that in 2012 there was very little rain in the region and the branch of the Sinimbu River going through the São Francisco village almost dried up: people crossed the river “with water reaching their shins”. Concerned with the springs and forests being cut down, he started talking to teachers and recent graduates of nearby universities. In 2013, the group started to meet more often, and in 2014 they heard about a policy to support the environmental issue on indigenous lands. Through the local Funai office, they learned about the GATI Project and began to accompany the technician

of the Sabiá Center in his activities; they supported sign posting and the planting of seedlings under the Micro-project and contributed to environmental education activities in schools. According to Guaracy, today there are many people in the community concerned about preserving the environment, but there must be people leading, mobilizing, educating and seeking alternatives.

The GATI Project found fertile ground in the Potiguar territory, to the extent that its actions were integrated into the Potiguaras' own ideas and needs for environmental restoration and protection. The schools, the farmers, the leaders, as well as the local Funai office continued doing what they had already begun, but found themselves strengthened by a network of exchange and solidarity, through support for meetings, workshops, exchange and other activities.



Recovery of slope with agroforest plantation in Guarani IL of Bracuí (2014)



## SOUTHEASTERN ATLANTIC FOREST REGIONAL CENTER: THE EXPERIENCE WITH ENVIRONMENTAL RESTORATION AND AGROFORESTRY IN THE GUARANI DE BRACUÍ INDIGENOUS LAND (RJ)

The Guarani de Bracuí IL is located in the south of the state of Rio de Janeiro, in the municipality of Angra dos Reis. It covers an area of 2,127 hectares and is traditionally inhabited by the Guarani people. With support of Funai, Emater and the GATI Project, the community in this IL is developing agroforestry in degraded areas, and reforestation with native species such as palm trees, mainly jussara (*Euterpe edulis*) and guaricanga (*Geonoma* sp.), and Amazonian species, such as açai (*Euterpe oleracea*) and pupunha palm (*Bactris gasipaes*). Guaricanga is a very important species in the Guarani culture, producing the preferred type of thatch for roofing houses.

Agroforestry production is a tradition among Guarani communities, who enrich their yards and gardens with food and medicinal species. They plant fields on a rotating basis, by fallowing areas used for food production, often planting tree species of their interest. In the Guarani de Bracuí IL, a history of environmental recovery projects, principally involving planting palm trees, is increasing the amount of species planted annually and the amount of areas restored. Taking into account this Guarani tradition and the interest of the Tekoa Sapukai community (the Guarani name

of the IL), the GATI Project and Funai supported the purchase of approximately 70,000 seedlings of palm trees and other tree species of interest for the community. The planting of these seedlings contributed to the recovery of approximately 50 hectares of areas degraded by cropping and human occupation, such as areas nearby the houses. In addition, the GATI Project also supported the participation of some of the indigenous farmers in training exchanges and as well as in workshops for the implementation of agroforestry modules in ILs.

Unlike other ILs where Micro-projects were crucial for the implementation of agroforestry and related activities, in Bracuí the eight Micro-projects were directed to support the development of the Plan for Territorial and Environmental Management (PGTA). Nevertheless, the PPP-GATI project “Let’s plant and preserve the environment”, was essential for supporting the work underway with agroforestry and environmental restoration. Implementation of the PPP-GATI project coincided with the arrival of the seedlings in the village, and by supporting concerted collective efforts, allowed the community to plant all the seedlings purchased.



In the Plan for Environmental and Territorial Management of the IL, environmental recovery is a guiding theme for defining

strategies to ensure the balance between traditional activities and environmental conservation.

Guarani children participate in reforestation activities with juçara palm in Guarani IL of Bracuí (2014)



## PANTANAL/CERRADO REGIONAL CENTER: AGROECOLOGY WITH THE TERENA PEOPLE OF MATO GROSSO DO SUL

In this Regional Center, actions with agroecology, agroforestry and environmental recovery were developed along two main fronts. These fronts followed the main ethnic division of Mato Grosso do Sul; one front was the

Mosarambihara-Sowers Training Program, developed with the Guarani and Kaiowá, already described in the section on Letters of Agreement. The other front was developed by the Terena people and will be presented below.



The Terena people consider themselves farmers by essence. Their traditional forms of agriculture are still practiced in ILs, however a decreasing number of people are involved. One reason is the size of the ILs, without enough land space for the population, which is increasing every year. Studies conducted by Funai have identified areas of traditional territory for expansion of ILs, however, much of this has not yet been regularized, and is still in the hands of non-Indians, resulting in various situations of conflict. With this, the search for jobs in cities is increasing and agricultural practices face more difficulties.

In the past, many Terena farmers were induced by the Brazilian State to practice mechanized agriculture based on monocultures, using pesticides and chemical fertilizers. In addition to weakening the soil, this model created dependence on Funai for supply of seed and soil preparation (plowing). At the same time, Funai's decreased operational capacity inevitably led to delays in this service, affecting production. All this, coupled with the global trend over decades of falling grain prices, has not permitted Terena farmers to generate sufficient income from their crops to maintain their families, at least with the agricultural model currently practiced.

Although they are proud to be recognized as capable farmers, the Terena are aware that the adoption of "wrong models" of production has weakened the autonomy

of indigenous agriculture and caused degradation of springs and riparian forests. Thus, the proposal of ecologically-based agriculture, an "indigenous agroecology" carried out by indigenous people, caught the attention of the Terena, who were getting involved in the GATI Project, especially in the Cachoeirinha IL. This interest was stronger among the group of leaders in the Mãe Terra Village, an area of traditional territory recuperated by the Terena in 2005, as it was outside the land originally demarcated, and only later included in the study of an expanded area. In addition to recovering the land, the families who fought for the area and founded the village also seek to resume some traditional values and ways of life, as well synthesized by the name given to the new village - Mãe Terra means Mother Earth.

In addition to the internal negotiations made by councilors Leosmar Antônio and Inácio Faustino<sup>9</sup> in this early stage of the GATI Project, the hiring of two specialized consultants to assist the Reference Areas of the Pantanal / Cerrado Center, one in the area of Agroforestry and another for Indigenous Training, both themes identified as important for the region, also should be highlighted.

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<sup>9</sup> Indigenous representatives chosen to represent the Cachoeirinha IL in the Regional Council of the Pantanal / Cerrado Center.

Workshop on production of  
alternative inputs in Lalima IL (2015)



In the Cachoeirinha IL, the first Agroforestry workshop ('Agroecological Production in Successional Agroforests') was held on February 4-6, 2013, with a group of 17 participants. These were mainly male and female farmers who had already been invited by councilors to participate in Project activities and who saw in the workshop an opportunity to improve their production. The workshop was held by the Agroforestry consultant Jessica Lívio Pedreira and the farmer and adviser to Cooperafloresta, Namastê Messerschmidt.

This first workshop is seen as the landmark of the emergence of a group, which later came to call themselves the 'GATI Family' and most recently become a legal entity called the Caianas Organization. After the workshop, the group decided to continue the meetings, since the technical advice from the GATI Project would not be constant, as there were five other ILs in the region to be assisted by the consultant, among the other activities in her contract. The group began to conduct collective actions on weekends to establish and



manage agroforests in the backyards of all participants. Before these events, the group gathered to prepare and plan for the agroforestry activities, according to the seedlings and seeds available, brought

by the participants. In this manner, they discussed and put into practice the concepts from the first workshop and their own ideas, based on Terena knowledge related to agriculture and the environment.

## COURSE ON AGROFORESTRY FARMING (IFMS/PRONATEC) AND INSTITUTIONAL PARTNERSHIPS

Another factor that contributed to the success of the GATI Project in the Cachoeirinha IL was the establishment of strong partnerships with local institutions, such as the Federal Institute of Education, Science and Technology of Mato Grosso do Sul (IFMS) - Aquidauana Campus, and the State University of Mato Grosso do Sul (UEMS).

The idea of a course offered by the National Program for Access to Technical Education and Employment - PRONATEC emerged from arrangements by GATI's regional consultant, Graziella Reis de Sant'Ana, counselors Leosmar and Inácio, and IFMS<sup>10</sup> Professor Aislan Vieira de Melo. The course aimed to meet the needs of the group linked to the GATI Project, in terms of knowledge and practical guidance in the area of agroecology.

After a rich process of discussions and joint construction which lasted about a year, the course took place from April 26<sup>th</sup> to July 29<sup>th</sup>, 2014, with a total of 200 hours of classes. The five compulsory subjects: 'Communication and Expression', 'Applied Mathematics', 'Guidelines for Professional Practice', 'Ethics, Citizenship and Work', and 'Entrepreneurship' were adapted to meet the needs of the group. For example, the 'Ethics, Citizenship and Work' discipline addressed indigenous rights, while the 'Entrepreneurship' course covered the process of creating a legal entity, in addition to public policies in support of family and indigenous farming. The five specific disciplines were: 'Traditional Agricultural Knowledge and Changes over Time', 'Cultivation of Agricultural Plant Species', 'Implementation of Agroforestry Systems', 'Growing Forest Species', and 'Models and Arrangement of Agroforestry Systems'. These disciplines were taught by seven instructors selected through a public selection process, among which four were Terena individuals.

<sup>10</sup> The courses offered by PRONATEC can be accessed and implemented by some federal institutions, among which the Federal Institutes - IFs.



The classes took place on weekends on a rotating scheme in the six villages of the Cachoeirinha IL. Among the 40 course participants enrolled, including farmers, teachers, students and leaders, there were 22 women and 18 men, between 16 and 73 years old, with schooling levels ranging from elementary school to college education. This diversity was a strength of the course, creating an environment for a rich exchange of knowledge and perspectives. Among the 40 course participants enrolled, only 9 dropped out, which was considered excellent in regard to general statistics for PRONATEC / IFMS courses. In parallel, Funai's Regional

Coordination Office in Campo Grande acquired 26 kits of tools, supplies and equipment, which was essential for allowing course participants to put into practice the knowledge acquired.

This was a successful example of how the GATI Project helped communities access a program derived from a public policy, which initially was not conceived for an indigenous clientele. Through engagement of the Terena people and partners, a differentiated course was constructed, and ended up exceeding the expectations of all those involved.



©Robert Miller

The young Terena Saulo in one of the agroecological plots cultivated by his family (2014)



Along with the workshops and course, the Terena people dreamed of what was initially called a “Training House” and then become *Ovoku Tumuné Terenoe* - ‘Terena Space for the Future’ - a ‘house’ surrounded by agroforestry systems, headquarters to the GATI Family / Caianas Organization, and for group meetings, training courses and workshops on environmental and ‘cultural’ subjects, such as Terena songs and prayers, pottery, medicinal plants, etc. The leaders of the Mãe Terra village designated (donated) for this space an area of 5 hectares of major environmental importance, as it shelters three springs, and also of historical significance, where 30 families remained camped in the process of recovery of this land. The area today is severely degraded; the idea is precisely to demonstrate that they can reforest it and restore it.

With support of the GATI Project (PPP-ECOS- ISPN / GATI Project), the basic structure of the house is being built from local raw materials and the area is being reforested.

Another ramification of the agroecological / agroforestry movement in the Cachoeirinha IL is the inclusion of the discipline ‘Terena Agroecology’ in the school curriculum in ILs. This initiative was developed with the support of consultant Ingrid Weber and involved the preparation of the Pedagogic Political Project (PPP) of the Felipe Antonio school, to which the school of the Mãe Terra Village is linked.

On June 3<sup>rd</sup> and 4<sup>th</sup>, 2016, the Terena people of the Caianas Organization held an unprecedented event in Mato Grosso do Sul, the AGROECOINDÍGENA 2016,

with estimated participation of over 1000 people, including indigenous people from 26 villages, representing 6 ethnicities, from 9 municipalities of the state. The event was held in the city of Miranda with the support of the local government, the Embrapa Agricultural West Unit, Embrapa Pantanal Unit, Agraer, IFMS, UFMS, UEMS and the GATI Project. It constituted a specific space for indigenous peoples of the state to reflect and strengthen Indigenous Agroecology and show society the important role they play in the maintenance of Brazilian biodiversity. Several activities were held throughout the AGROECOINDÍGENA, such as the Meeting of Indigenous Men and Women Farmers, the Fair of Indigenous Landraces, the Seminar on Indigenous Agroforestry Systems, field visits to the Cachoeirinha IL to get to know the experiences with agroforestry and agroecological production, and several workshops, on themes such as grafting fruit trees, beekeeping (*Apis* and native species), propagation of native tree species, fish farming, free-range chicken, crafts with fibers, and processing of cassava and fruits.

The themes agroecology, agroforestry and ecological restoration brought by the GATI Project found fertile ground among the Terena in the Cachoeirinha IL, constituting instruments to meet other needs, such as the production of healthy food and the recuperation and safeguarding of culture. Moreover, they were fully consistent with the Terena’s goal of land rights and autonomy, at the same time bringing about convergent actions seeking to strengthen the philosophy and values of traditional Terena agriculture.



Ms. Maria Belizária, of Cachoeirinha IL, speaks about agroforestry production supported by the GATI Project (2014)

## CENTRAL/WEST AMAZON CENTER: AGROFORESTRY WITH GUARANÁ AND ROSE WOOD IN THE ANDIRÁ-MARAU IL (AM/PA)

The Andirá-Marau IL is located in the states of Amazonas and Pará, covering 788,528 hectares and with a population of more than 5,250 individuals of the Sateré-Mawé people. The Sateré-Mawé consider themselves the “people of the guaraná” (the caffeine-rich seeds of the forest liana *Paullinia cupana* var. *sorbilis*) and this product has become a major source of income for the IL, being exported

through fair trade and other initiatives to Italy, France and other countries. Over the past decade (2006-2015), the average production of guaraná by the Sateré-Mawé Producers Consortium (CPSM), has been around 5.6 tons / year<sup>11</sup>.

<sup>11</sup> Source: Technical report on the management of guaraná plantations by the Sateré-Mawé ethnicity; Clara Vignoli/ INPA, 2016



Guaraná is grown in biodiverse agroforestry systems, without use of any chemical inputs. The seedlings used in the guaraná plantations are mostly obtained from beneath mother plants growing in the forest. Currently, the Sateré-Mawé seek for recognition of this practice through the process of registering the protected “Designation of Origin” for guaraná in the National Institute of Intellectual Property, INPI, with the support of Geographical Indication Coordination Office of the Ministry of Agriculture, Livestock-Raising, and Supply. For the Sateré-Mawé, the Designation of Origin seal will legally recognize the differentiation of the guaraná they produce, in terms of the specific environmental characteristics of ILs, the use of traditional farming and processing practices that protect the genetic diversity of the species, and because the seedlings were harvested from semi-wild mother plants in forest areas far from the villages. Thus, they seek to differentiate the guaraná produced by the Sateré-Mawé from that produced by other farmers in the region, where there is a growing use of clones developed by Embrapa.

More recently, the Warana Project was developed in order to support sustainable production activities with emphasis on agroecology, such as the production of seedlings, implementation of agroforestry systems, training in collecting

forest seeds, establishment of school vegetable gardens, and organic compost production, aiming towards food security and income generation by indigenous communities. The initiative was funded by Petrobras Ambiental and developed in partnership with the National Institute for Amazon Research (INPA), the Consortium of Sateré-Mawé Producers (CPSM), the Secretariat for Rural Production of the Amazonas State (Sepror), the Institute for Sustainable Development of Amazonas State (Idesam), the Federal Institute of Amazonas (IFAM), and the Centre of Native Seeds of the State of Amazonas (CSNAM) of the Federal University of Amazonas (Ufam). Under this initiative, the GATI Project supported the realization of the Fair for the Exchange of Seeds, Flavors and Knowledge on June 11<sup>th</sup> to 13<sup>th</sup>, 2015.

**Exhibition of products from indigenous crops during the Fair for the Exchange of Seeds and Flavors, Andirá-Marau IL (2015)**





One of the initiatives of the Warana Project was the replanting of rose wood (*Aniba rosaeodora* Ducke), which is of particular interest to the Sateré-Mawé people. The species almost reached total extinction in the region, as it was over-exploited for extraction of the essential oil “linalol”, used by the perfume industry. It is listed as an endangered species of the Brazilian flora, according to Normative Instruction of the Ministry of Environment.

Today, with the support of partners, the species is being replanted by indigenous communities with seedlings brought from the forest or produced in nurseries, with prospects for oil production from pruning of leaves and branches, with no need to cut the tree. Replanting is intercropped with cultivation of guaraná and other native species.

Besides the work involving planting guaraná and rose wood, the Warana Project also trained Sateré-Mawé youth in collecting forest

seeds, which involves the selection of mother trees and indication of Seed Collection Areas, as well as climbing techniques. Among the mother trees identified and mapped out, there are 96 rose wood trees and 676 trees of other species. Today, out of the 57 Sateré-Mawé representatives trained, 42 are registered as seed collectors in the National Register of Seed and Seedling Growers-RENASEM, of the Ministry of Agriculture, Livestock-Raising and Supply-MAPA.

In early 2014, the GATI Project also supported the installation of the Local Council of the Andirá Marau Indigenous Land, thus bringing about the mobilization necessary for the preparation of a proposal for the Plan for Territorial and Environmental Management of the IL. The proposal was prepared jointly with the Center for Indigenous Work - CTI and was approved in a call for projects by the Amazon Fund / BNDES. Implementation is expected to take place in 2017.



Guarana  
(*Paullinia cupana*)



Preparation of rosewood seedlings from cuttings



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Under the Program for Small Projects of Environmental Management in Indigenous Lands (PPP-GATI) 3 small projects were funded, presented by the CPSM in partnership with UFAM and Idesam. They were implemented between 2015 and 2016 and address the recovery, planting and management of rose wood and the continuity of initiatives with agroecology and agroforestry systems.

The project “Growing and conserving rose wood in agroforestry systems by the Sateré-Mawé people - Marau River” had as its goal production of 1,000 rose wood seedlings or rooted cuttings, with training and technical support by UFAM. Specific workshops were held for indigenous representatives on growing rose wood from cuttings at the University, and technical assistance was provided for the nurseries installed in the IL. The project also contributed to the recovery of degraded areas in the IL and recovery of knowledge and uses of rose wood by communities.



The project “Cultivation and conservation of rose wood in agroforestry systems of the Sateré-Mawé people - rivers Uaicurapá / Andirá” aimed for the production of 2000 seedlings. Similar and complementary to the above, it also provided training and exchange activities with indigenous knowledge and technical support by UFAM.

The “Warana Agroecology II” Project: Strengthening Sateré-Mawé Production” continued the activities initiated by the Warana Project, with the implementation of agroforestry systems, the strengthening of ecological practices, and the promotion of environmental education. The technical support was provided by Idesam.

In regard to the Micro-Project mechanism, a Micro-project called Sakaka was implemented in the Fé em Deus village, involving the replanting of rose wood in agroforestry systems and homegardens of indigenous families. The activities were performed in collective events, between September / 2013 to January / 2014. The person responsible for coordinating the Micro-project was Ilson Brandão Freitas.

First, meetings addressed the work plan and the division of tasks, such as cleaning and opening small clearings, and the division of hunting and fishing teams to feed the people who worked in the events. After identifying the important plants for the Sateré-Mawé in the forest and backyards of families, these species were intercropped with rose wood. Agroforestry systems have been improved and enriched and today the community is carrying out the maintenance of agroforestry homegardens.



Rosewood agroforestry plantation intercropped with açai and guarana

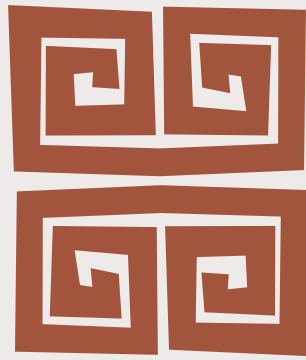






# CONCLUSIONS - SOME LESSONS LEARNED





Rotation of different crops and diversity of species are key elements to maintain ecological and economic stability of agro-ecological production systems and agroforests. When evaluating GATI Project's initiatives in agroecology, agroforestry and environmental restoration, a similar correlation can be made: the most consistent results are seen where there is the presence and participation of different actors as partners, each bringing their particular contribution, whether in the form of knowledge, labor, materials, financial resources or logistical support.

Initiatives with more comprehensive results also incorporated a set of complementary actions, for example: after bringing a technician to lead a workshop on agroforestry, an exchange activity was carried out, so that participants could see in practice what they discussed in workshops, through the viewpoint and experience of other indigenous and non-indigenous farmers. It would also have been pointless to have stimulated actions without having a funding mechanism to support indigenous farmers in putting new ideas into practice, a need that was fulfilled by the Micro-projects and then the small projects of the PPP-GATI initiative.

By respecting and promoting indigenous leadership, the Project was able to develop initiatives that are not “top down”, having instead the features of a network, with multiple partners. Thus, reiterating the correlation with biodiverse systems, arrangements with greater stability are created where social capital is strengthened and is a key element for the continuity of actions.

As regards to the expansion and scaling-up of initiatives in agroecology, agroforestry and ecological restoration in ILs, it is important to note that in the context of climate change, the Brazilian government has taken on national and international commitments related to restoration of degraded areas, and has established several public policies and specific programs in order to achieve these goals. One of the goals is the restoration of 12 million hectares of degraded areas, and ILs constitute a significant opportunity for the fulfillment of this goal. As seen in this volume, one of the lessons learned by the Project is that ILs present not only demands for environmental restoration initiatives, but also demonstrate a number of successful experiences in this line.

At the same time, environmental restoration initiatives, especially those based on agroforestry systems, have the potential to contribute to the achievement of other goals and public policies related to food security, income generation and well-being of indigenous peoples. Although the restoration of degraded areas through land use systems with high carbon-storage

capacity combined with the preservation of existing forests is one of the most effective ways to mitigate climate change, the recovery of degraded landscapes is usually a relatively costly endeavor. Although the combination of restoration with food production represents a way to reduce this cost, it is still necessary that such initiatives receive specific financial support. Nonetheless, national environmental goals permit the convergence of such social and environmental objectives, especially those related to climate change mitigation and adaptation, through mechanisms such as payment for environmental services (PES).

As a contribution to an indigenous policy more coherent with environmental policies, more consistent actions by the Brazilian government are necessary to promote and support environmental restoration initiatives in Indigenous Lands. Greater interest of indigenous communities can be expected if initiatives are able to combine several of these objectives, simultaneously generating social, cultural, economic and environmental benefits and contributing to the well-being of indigenous communities. One of the observations of the GATI Project is that the recovery of springs and riparian forests is of great interest to indigenous communities, precisely because of the importance of maintaining water supply in good quantity and quality. Another lesson is that environmental restoration initiatives will be more successful if coupled with food production, since intercropping tree plantations with food crops brings a number of advantages.



The diversity of indigenous experiments with agroforestry and restoration has great potential as a starting point for a significant increase in the quantity of recovered areas, and as references for new initiatives in other ILs. Considering the potential of these experiences to achieve several goals of PNGATI and indigenous policy in a cross-cutting manner, we can conclude that the issue of environmental restoration in ILs constitutes fertile ground for specific programs and investments. However, according to the lessons learned by the GATI Project, any proposal for indigenous environmental restoration program should observe some assumptions, as follows:

Guarani individual of the Caieiras Velhas II / Tupiniquim IL visiting areas reforested with juçara palm in Guarani IL of Ribeirão Silveira-SP (2015)



- recognize both the regional characteristics of biomes and the specific characteristics of each indigenous people, in regard to the way of life, social and political organization, and various other factors that influence their relationship with the environment and surroundings;
- be based on or have as a starting point existing actions and initiatives, highlighting successful experiences;
- use of agroecology and agroforestry approaches, since these are more appropriate to the reality of most indigenous peoples, combining environmental recovery with food production and income generation;
- establish mechanisms of dialogue with relevant public policies, so as to build a broader base of support for initiatives, from technical training to the financing of actions.



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The Project for Indigenous Territorial and Environmental Management (GATI) contributed to the recognition of Indigenous Lands (ILs) as protected areas essential for biodiversity conservation in Brazilian biomes, and strengthened traditional indigenous practices regarding management, sustainable use, and conservation of natural resources. In addition, it fostered indigenous leadership in the construction of public policies for environmental and territorial management of ILs.



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Articulação  
MATO GROSSO



MINISTÉRIO DO  
MEIO AMBIENTE

MINISTÉRIO DA  
JUSTIÇA E CIDADANIA

