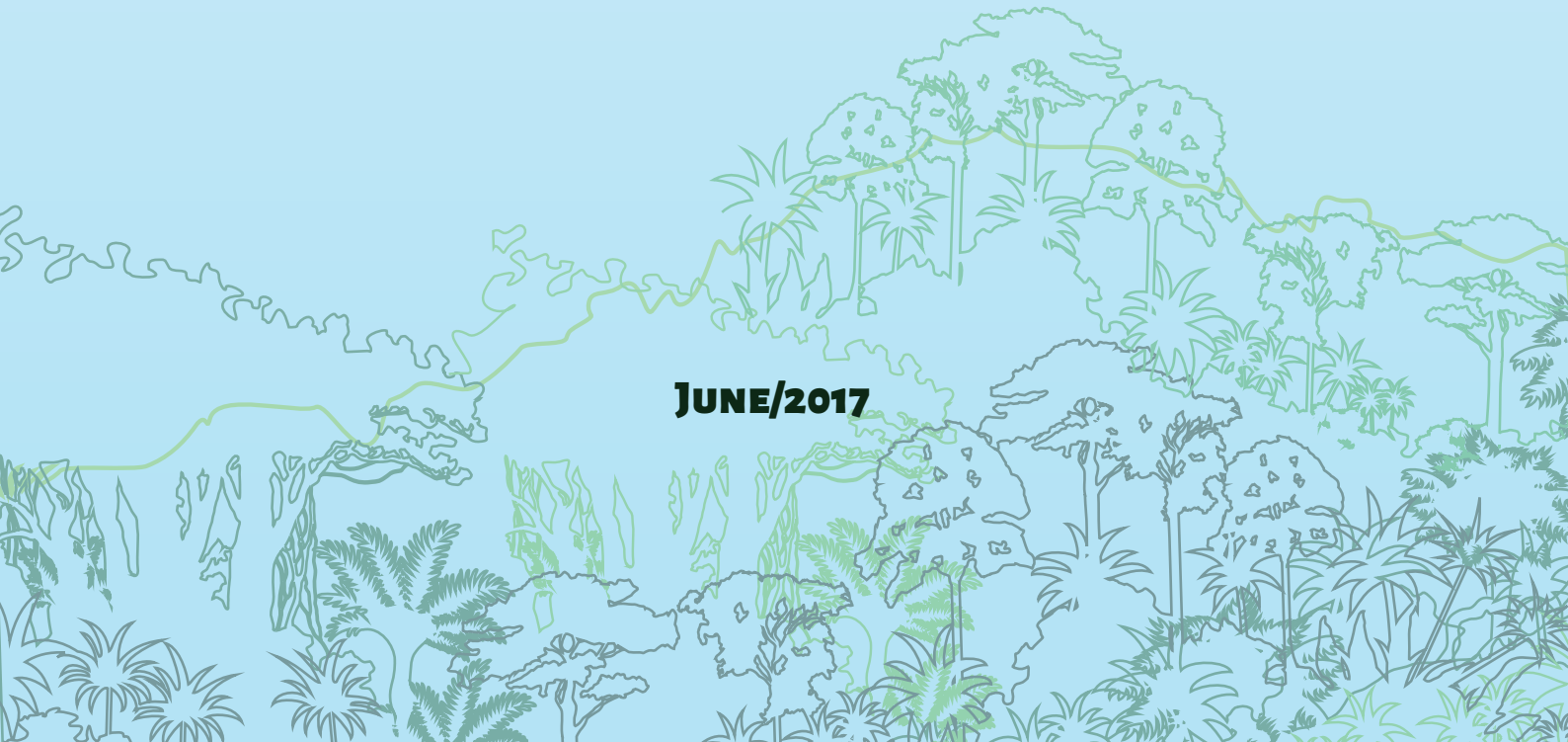
Effectiveness Evaluation Report

Going Green

Project



June/2017

This report presents the effectiveness evaluation results of the project supported by the Amazon Fund, called "Going Green", which was concluded in 2014. This evaluation was carried out by a team of independent consultants, under the coordination of technical cooperation between BNDES and German Cooperation for Sustainable Development through GIZ. All opinions expressed herein are the sole responsibility of the authors, not necessarily reflecting the position of GIZ and BNDES. This document has not been subject to editorial review.

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Summary

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Glossary

Programa ABC	Low Carbon Agriculture Program
APP	Permanent Preservation Area
BNDES	National Development Bank
CAR	Rural Environment Registration
CEPAL	UN Economic Commission for Latin America and the Caribbean
EMATER/PA	Technical Assistance and Rural Extension Company of the State of Pará
FA	Amazon Fund
FAMATO	Federation of Agriculture and Livestock of the State of Mato Grosso
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GPS	Global Positioning System
ha	Hectare
IBAMA	Brazilian Institute of Environment and Renewable Resources
IBGE	Brazilian Institute of Geography and Statistics
IMAZON	Institute of Man and the Environment
INCRA	National Institute of Colonization and Agrarian Reform
INDEA	Institute of Agricultural Defense of the State of Mato Grosso
INPE	National Institute of Space Research
INTERMAT	Mato Grosso Institute of Lands
IPAM	Amazon Environment Research Institute
IPEA	Institute for Applied Economic Research
ITERPA	Pará Land Institute
LAR	Rural Environmental License
LAU	Unified Environmental License
MAPA	Ministry of Agriculture, Livestock and Food Supply
MMA	Ministry of the Environment
MT	Mato Grosso
MPF	Federal Prosecution Service
OCDE	Organization for Economic Co-operation and Development
OEMAs	State Environmental Agencies
PA	Pará
PAM	Municipal Environmental Portal
PPCDAm	Plan of Action to Prevent and Control Deforestation in the Legal Amazon
PPG7	Pilot Program for Brazilian Tropical Forest Protection
PRA	Environmental Regularization Program
PRADs	Recovery Plans for Degraded Areas
PRODES	Project for Monitoring Deforestation in the Legal Amazon by Inpe Satellite
PRONAF	National Program to Strengthen Family Agriculture
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
RL	Legal Reserve
SAMA	Secretariat of Agriculture and Environment
SEMA	State Secretaries of Environment
SEMMA	Municipal Secretariats of Environment
SEMMATUR	Secretariat of Environment and Tourism
SFB	Brazilian Forest Service
SLAPR	Environmental Licensing System for Rural Properties
SiCAR	National System of Rural Environmental Cadastre
SIDRA	IBGE Automatic Recovery System
SIG	Geographic Information System
SPRN	Subprogram of Natural Resources Policies
SR	Rural Union
TNC	The Nature Conservancy
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

The Going Green project was one of the first financial contributions of the Amazon Fund to fulfill its mandate to support deforestation prevention, monitoring and control actions and to promote the conservation and sustainable use of the Legal Amazon's natural resources.

Contracted in 2010 and finalized in 2014, the project was executed by the non-governmental organization The Nature Conservancy Brasil (TNC), which invested R$ 19,200,000.00, being R$ 16,000,000.00 a non-refundable contribution from the Amazon Fund. The Going Green project carried out its activities in the municipalities of São Félix do Xingu, Tucumã, Ourilândia do Norte, Cumaru do Norte and Bannach in the south of Pará (PA), and Nova Ubiratã, Nova Mutum, Tapurah, Cotriguaçu, Juruena, Sapezal and Campos de Júlio in Mato Grosso (MT). It is worth noting that Cotriguaçu, Cumaru, Ubiratã, São Félix do Xingu and Tapurah are in the list of priority municipalities for the control and monitoring of deforestation, according to Federal Decree No. 6,321 / 2007.

The actions of the project aimed at strengthening municipalities to promote the environmental adjustment of rural properties through the adhesion to the Rural Environmental Registry (CAR). The final objective was to reduce deforestation and remove the embargoed municipalities from the critical list of the Ministry of the Environment (MMA) (Decree 6321 of 12/21/2007).

For this, the municipal administration was equipped and their technicians trained and qualified to operate a Municipal Environmental Portal (PAM). They could thus prepare, receive, plot and monitor georeferenced information of the municipality's productive units, making the CAR possible. A wide dissemination and awareness-raising process was carried out to inform and motivate rural producers in general to join the CAR and start the process of recovering the environmental deficits of permanent preservation areas and legal reserve. In addition to the municipal governments, the Going Green project had the support and participation of rural unions and producer associations.

Prior to the approval of the new Forest Code in 2012, there was strong resistance against the CAR, mainly from the rural producers' unions linked to livestock production in the Amazon. With the approval of the new Code and pressured by the need to meet meatpackers and official banks' requirements for credit release, rural producers joined the CAR, without, however, making a commitment to recover the environmental deficits and adjust their properties in the same speed.

In this context, it is important to note the importance of the TNC's pioneering role in the implementation of the CAR, contributing to the inclusion of this instrument in the new Brazilian Forest Code of 2012, since this project began in 2010, prior to the Code.

As a counterfactual sample, two neighboring municipalities adjacent to the Going Green project execution area, both in Mato Grosso and Pará were analyzed. In terms of structure, logistics, equipment, trained personnel and services rendered, the municipal governments supported by the Amazon Fund were better classified, when compared to the counterfactual municipalities analyzed.

Relevance

The environmental suitability of rural properties, combined with the strengthening of environmental management at local level, is still relevant to territorial management and environmental control policies. In addition to enforcing the legislation, these policies are fundamental to control illegal deforestation, allowing the promotion of natural resources sustainable use in the Amazon.

To this end, strengthen municipal environmental agencies so that they comply with their legal obligations of monitoring and controlling activities that generate environmental impacts and, at the same time, offer society tools to monitor the territorial dynamics with transparency, are fundamental steps towards executing an environmental management strategy at municipal level.

The Going Green project acted on both fronts: it supported the municipalities for environmental adjustment of the productive units and offered instruments to increase transparency and control of municipal territory use. The project was executed in accordance with the proposals of the Action Plan for Prevention and Control of Deforestation in the Legal Amazon (PPCDAm) and state plans for the reduction of deforestation in Mato Grosso and Pará, in addition to that established in the mandate of the Amazon Fund.

Therefore, the Going Green project was relevant to the initial process of strengthening environmental monitoring and control actions, with emphasis on the formalization of the CAR.

Impact

The expected impacts of the project were the reduction of deforestation, the removal of the municipalities that deforest the most from the critical list of the MMA, according to the Federal Decree No. 6,321 / 2007 and the adhesion to CAR and its effects for the environmental adjustment of rural properties. Although it is not possible to measure its direct relation with the project, there was a reduction in deforestation rates in the initial years of the project implementation, 2011, 2012 and 2013. However, these rates have not been maintained and have grown again in the last three years (Table 2).

The main impact of the project was the creation of the instruments and conditions for municipalities' territorial ordering, from the development of the CAR. In this way, environmental deficits and surpluses were spotted, as well as their owners. The initial recovery process of permanent preservation areas and legal reserve was also promoted.

The updating of the municipal cartographic bases for the 1: 25,000 scale and the operational support for the rural establishments georeferencing for CAR adherence was fundamental and one of the highlights of the project.

In a universe of 12 Mato Grosso and Pará municipalities, the development of the CAR allowed the regularization of 16,796 rural properties and an area of 11,834,644 hectares. Through the Environmental Regularization Program (PRA), there was a commitment to recover the environmental deficits of Permanent Preservation Areas (APP) and Legal Reserve (RL) of 3,801 producers with an estimated area of more than 5 million hectares. Undoubtedly, these results are important impacts, which in the medium term will generate recovery commitments that can have a significant impact on carbon storage by natural regeneration.

An important indirect effect of the project was the inclusion of meatpackers and tradings in the effort for meat and soy production chain environmental regularization. This injected credibility into the process. Actions to promote alternatives to land use with increased productivity of cattle herd per head / hectare were also launched. They are positive impacts that must be broadened, to increase the scale of the Going Green project's results.

An expected impact that was not confirmed was the removal of the municipalities of São Félix do Xingu, Cumaru do Norte, Nova Ubiratã, Cotriguaçu and Tapurah from the list of priority municipalities for the control and monitoring of deforestation, according to Federal Decree No. 6,321 / 2007, known as the list of municipalities that deforest the most, edited by the MMA. The project contributed to the achievement of CAR compliance requirements, but the rates of deforestation that occurred since 2012 did not meet the criteria that would allow their removal.

Efficiency

The Going Green project employed R$ 19,200,000 in its three years of execution. Of these, R$ 16,000,000.00 were disbursed by the Amazon Fund and executed within the planned schedule without significant delays, demonstrating the beneficiary's efficiency in using and rendering accounts of the resources available.

In relation to the cost / benefit balance for delivering the services and obtaining the products, they were aligned to market levels and compatible with the obtained results. An average of R$ 120,000.00 was spent for each municipality that took part in the project. The cost of registering each rural producer in the CAR was of R$ 35.00. The cost per hectare of the cartographic base elaborated in the 1:25,000 scale was of R$ 0.28 and R$ 0.29 per hectare (ha) for diagnostic services of the properties served by the project. The construction of the Municipal Environmental Portal with the CAR attribute, although little absorbed into public policies by the municipalities, cost approximately R$ 450,000.00, which is also compatible with market prices for this type of product.

Effectiveness

The project strengthened and modernized 5 City Halls in Pará and 7 in Mato Grosso, providing equipment, materials, training and qualifying personnel, implementing a Municipal Environmental Portal (PAM) that should currently undergo improvements, with a cartographic base in the scale of 1:25,000 with attribute to receive the CAR. In partnership with rural unions and associations, it also disseminated and mobilized rural producers to register the productive units in the CAR.

Thus, the municipalities supported by the project expanded environmental management actions for the rural area, with real estate registration, identification and demarcation of the Permanent Preservation Areas and Legal Reserve of the productive units. The municipalities were empowered to monitor and control their territory.

The total area registered in the municipalities of Mato Grosso was of 5,510,316 ha, with 5,530 rural producers registered. In Pará, 6,684,328 ha for the area registered and 11,263 producers adhered, much more than the original number originally planned by the project.

In Mato Grosso, the environmental deficit areas comprised 2,077,827 ha, with 2,049,977 RL and 27,850 hectares of APP. The area designated for the PRA was of 3,185,853 ha, higher than the area declared as degraded. In Pará, 829 producers took on the recovery of environmental deficits, and in Mato Grosso, 2,972.

Among the areas registered in Pará, 2,809,563 ha represented environmental deficits, with 2,770,316 ha of legal reserve and 39,267 ha of permanent preservation areas. Among these, 2,385,121 were signed in PRA with the possibility of being recovered, with significant benefits of carbon sequestration by natural forest regeneration.

The identification and classification of these areas, along with the considerable number of properties and areas registered and identified in the CAR, was a significant result achieved with the support of the Going Green project. However, it was only the initial part of the process of adjusting properties to the Forest Code. The producers with APP and RL deficits have the challenge of signing the environmental regularization plan for the recovery of existing deficits.

Deforestation rates in municipalities fell during the project, but grew again after 2014, which did not allow the municipalities embargoed to leave the critical list of the MMA.

The Going Green project was effective in supporting the development of CAR in the municipalities. However, structures and tools should be optimized so that most producers are prompted to take on the PRA and carry out the respective Degraded Area Recovery Plans (PRADs), ensuring the environmental adjustment of rural properties. Regarding the municipalities in the priority list for the control and monitoring of deforestation, according to Federal Decree No. 6,321 / 2007, better known as “List of municipalities that deforest more in the Amazon”, it was not possible to meet the criterion of reducing deforestation rates to below 40 square kilometers per year, and the federal embargo has been maintained in these municipalities.

Sustainability

The Going Green project made it possible, in general, to meet the producers’ demand of for environmental legality. This made beef and dairy products sale to the meatpackers and dairy industries, the soybean moratorium and the banks’ credits possible. Local agents were the environmental agencies of municipalities, having their capacities for elaboration, analysis and processing of information on rural properties expanded.

This process aimed at the environmental adaptation of the rural activities in the productive units. Therefore, even with the economic, financial and political difficulties that are affecting most of the public entities, this support to rural environmental management is imperative, as farmers continue to demand adjustments that will enable their continuous access to market and credit.

The search for the sustainability of the actions related to the rural production and to of forest cover maintenance is still a great challenge. The project worked in the municipalities to help strengthen public power at a local level and to initiate a process in the search for environmental management sustainability. This contribution has brought the theme of environmental regularization to the center of discussions between Municipal Secretariats of the Environment and rural producers, which has been seen as a way to enable environmental regularization progress and possible environmental deficits recovery, with the development of sustainable productive activities.

The comparison of December 2013 with November 2016 data shows that the activities of the Going Green project endured, even after the financial contribution of the Amazon Fund was concluded. By 2013, the municipalities supported in Pará had registered 4,564,172 hectares and 9,447 rural properties in the CAR. In 2016, these numbers rose to 6,684,328 ha with the participation of 11,263 rural producers. Similarly, the municipalities of Mato Grosso had 2,416,393.82 ha registered in the CAR in 2013, with the participation of 2,253 rural producers. In 2016, these numbers were 5,530,316 ha of area and 5,530 producers registered in

the CAR. That means a 100% increase. An important example is that the cartographic bases elaborated by the project are still a reference for the elaboration of CAR and are used until today in these municipalities, showing the sustainability of the actions by the Going Green project and the adoption of the methodology by producers and environmental organs.

Main Recommendations

i) To the project executors:

▸ Foster, in its projects, the support to the productive units' environmental adjustment, promoting the adhesion to PRA and PRADs.

▸ Update the Municipal Environmental Portal (MAP) as a complementary tool to the content of other portals (for example, the Green Municipalities Portal). Recycle training so that it is used in territorial management of municipalities.

ii) To the municipalities supported by the project

▸ Increasingly encourage the participation of local communities in the dissemination of alternative sustainable use practices. Include, whenever possible, specific groups for women.

▸ Directing the production to specific markets with certain requirements has a faster and longer lasting effect on rural properties environmental suitability than legal standards.

iii) To donors and managers of the Amazon Fund / National Development Bank (FA / BNDES)

▸ Adapt the execution of projects supported to other policies under development, so that the financed project is a support for other important initiatives. For example, the Ministry of Agriculture Livestock and Food Supply (MAPA) supports the Low Carbon Agriculture Program (ABC); the Going Green project can help rural properties with environmental suitability to access the resources of the ABC Program.

▸ Support the continuity of implementation of all the instruments planned for PRA implementation, with emphasis on CAR analysis and validation, implementation of PRADs for recovery of RL and APP.

▸ Ensure a gender equity perspective in the approved projects, in order to include the most vulnerable population in the projects' elaboration and execution.

iv) To the Ministry of the Environment

▸ Support, through actions under the PPCDAm, policies to certify the properties that fully comply to environmental standards, so that they have access to distinctive markets that offer higher prices for certified products.

▸ Maintain the mobilization and awareness process for the adhesion to the PRA in a post CAR registry strategy, with municipalities involved in the process of providing georeferencing services for family farmers (holders of up to 4 fiscal modules areas).

▸ Expand government command and control efforts, needed to keep annual deforestation rates declining in priority municipalities.

v) To the Amazon Fund Steering Committee (COFA)

▸ Define, within its guidelines, ways to encourage the development of projects aimed at preventing and combating deforestation in areas where forest remnants are significant and there is greater pressure and threat of deforestation. The Going Green project took place, with respect of most of its area of implementation, in areas where chains of agricultural production, notably soy and cattle raising, were already consolidated.

1. Background

Brazil's first Forest Code, approved in 1934, established in its Article 1 that the existing forests in the national territory constituted goods of common interest. It also included the concept of Legal Reserve (RL)[1]. In 1965, the legislation was updated, with the introduction of the concept of APP expanding use limits and the protection of Brazilian forests. Revised again in 2012, the need for RLs and APPs in rural properties remained.

Because of its importance for the world's climate balance and biodiversity conservation (fauna and flora), the Amazon plays a central role in the major cooperation strategies to mitigate the impacts that generate greenhouse gases and regional biodiversity loss. Within a jointed effort framework, the Pilot Program for the Protection of Brazilian Tropical Forests (PPG7) was launched in 1992. Under the coordination of the Natural Resources Policy Subprogram (SPRN), an experiment with geotechnologies to monitor and control land use in Mato Grosso was started in 1998.

This resulted in the elaboration of the Environmental Licensing System for Rural Property (SLAPR), which had as its base a cartographic base in an adequate scale and the inclusion of the productive units' polygons with the identification of land uses. SLAPR enabled the monitoring of deforestation dynamics in the registered rural properties. Producers who complied with the law and respected the limits of RL and APP were granted a Unified Environmental License (LAU) and those who failed to comply were fined and embargoed.

The state of Mato Grosso, then a record holder in illegally deforested areas, that is, areas that did not have prior authorization from environmental agencies for deforestation, saw their rates decline and rural landowners seek compliance with environmental laws. This pilot experiment was replicated in all states of the Amazon. In 2012, the new Forest Code was approved, incorporating the positive results of the referred experiment and the technical instruments of the Rural Environmental Registry (CAR) and the Environmental Regulation Program (PRA).

What is PRA, CAR and PRAD?

The **Environmental Regularization Program (PRA)** is an instrument provided for in Law 12.651 / 2012 that must be implemented by each state. It corresponds to the set of necessary steps which the producer will have to facilitate and adhere to, aiming rural property environmental adequacy and, consequently, more environmentally sustainable methods of production. The PRA provides for the CAR and the PRAD.

The **Rural Environmental Registry (CAR)**, created by Law No. 12,651 / 2012, under the National Environmental Information System, and regulated by MMA Normative Instruction No. 2, dated May 5, 2014, is a national electronic public registry, mandatory for all rural properties, which aims to integrate environmental information of the properties and rural properties related to the Permanent Preservation Areas, of restricted use, of Legal Reserve, remnants of forests and other forms of native vegetation, and of consolidated areas, composing a database for control, monitoring, environmental and economic planning and deforestation combat"(Brazilian Forest Service, sd).

After enrolling in the CAR, the rural landowner must sign the term of adhesion to the PRA for environmental deficits recovery in RL or APP areas, when applicable. The owner develops and implements their **Degraded and Altered Area Recovery Project (PRAD or PRADA)**. It must contain the measures needed for the recovery or restoration of altered or degraded areas, based on the State Environmental Bodies (OEMAs) recommendations for recomposition of the impacts caused.

[1] The Legal Reserve (RL) is defined as the area of the interior of a property, delimited with the purpose of ensuring a use towards sustainable economic returns from natural resources, as well as assisting the conservation and resilience of ecological processes (BRAZIL , 2012).

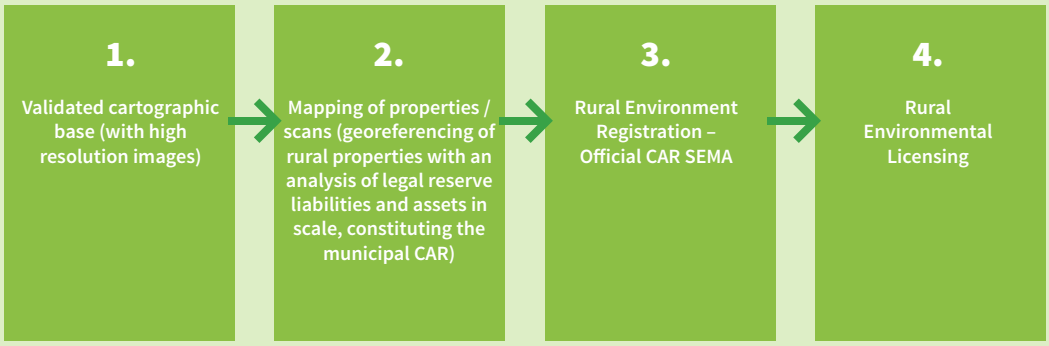
As instrument that supports the implementation of these policies, the Amazon Fund was established through Presidential Decree 6,527 / 2008, managed by BNDES and structured in four main components: (1) territorial ordering; (2) monitoring and control; (3) promotion of sustainable productive activities, and another component that is transversal to the other three: (4) Scientific and technological development.

In this national and international political context, which is focused on the conservation of forests, the Going Green project was presented to the Amazon Fund by the non-governmental organization The Nature Conservancy (TNC) and was approved in April 2010.

The TNC's pioneering approach to environmental regularization in the Legal Amazon

The Nature Conservancy (TNC) in Brazil has accumulated experiences with initiatives to integrate agriculture and conservation since 2004, when the partnership with Cargill made the implementation of the Responsible Soy Project possible in the region of Santarém, in the state of Pará, helping producers to comply with the Brazilian Forest Code. This experience made it possible for the TNC to start the Lucas do Rio Verde Legal project in 2006, for environmental suitability of all rural properties of the municipality, this time with the support of Sadia, Friagril and Syngenta. At the same time, with the support of Caterpillar, the Cerrado Sustentável project was started to evaluate the environmental deficits of properties, and then develop actions for the recovery of APPs and the regularization of legal reserves. Two other projects were executed with the same goal, Responsible Productive Chain, financed by USAID and another for the Reduction of Deforestation in the Amazon, with observance to the Forest Code and strengthening of REDD mechanisms in Brazil, under the support of the United Kingdom.

Strengthened by the use of geotechnological tools and the promotion of legal instruments for the regulation of rural properties, the TNC approved, with funds from PPG7-SPRN, the Technical Assistance Project for Environmental Adjustment of rural productive units in the municipalities of Feliz Natal, Brasnorte and Juína, in the state of Mato Grosso and Santana do Araguaia and Marabá, in the state of Pará. Again, the actions foresaw the use of geotechnologies and compliance to current legislation, specially the Rural Environmental Cadastre - CAR, recently regulated by the Federal Government through Decree 7,029 / 2009 (Federal Program to Support the Environmental Regularization of Rural Property, denominated “More Environment Program”). The project developed a digital cartographic base in the scale of 1:25,000 for the municipalities, carried out the scanning of the properties, supported the inclusion of rural properties in Mato Grosso (MT) and Pará (State of Para) OEMA databases and facilitated the elaboration of 1,000 PRADs. The flow worked on by TNC for rural properties environmental suitability was the following:



The methodology was consolidated in the two components of the project: the first with a campaign to mobilize rural producers to join the CAR (already regulated in 2009) and another to carry out the mapping and georeferencing of rural properties and their registry in the CAR system.

In this context of producers’ great demand for the environmental regularization of their properties, facing eminent changes in rules, TNC presented to the BNDES the Going Green project, with the objective of ensuring that governmental and nongovernmental actions provide for the compliance of anthropic activities with environmental legislation in the states of Mato Grosso and Pará.

Between May 2010 and February 2014, R$ 19,200,000.00 were invested in this project, of which R$ 16,000,000.00 were a non-refundable contribution from the Amazon Fund. Going Green carried out its activities in the municipalities of São Félix do Xingu, Tucumã, Ourilândia do Norte, Cumaru do Norte and Bannach in the south of Pará, and Nova Ubiratã, Nova Mutum, Tapurah, Cotriguaçu, Juruena, Sapezal and Campos de Júlio no Mato Grosso, according to image 1. It should be noted that Cotriguaçu, Cumaru, Ubiratã, São Félix do Xingu and Tapurah are in the list of priority MMA municipalities.

The municipalities supported by the project have as main productive agricultural activities the production of rice, corn and soybean. The latter is carried out mainly in the municipalities of Mato Grosso. Livestock, in turn, comprises activities with cattle and poultry, predominantly (Municipal Agricultural Production and Municipal Livestock Research, SIDRA / IBGE, s.d.).

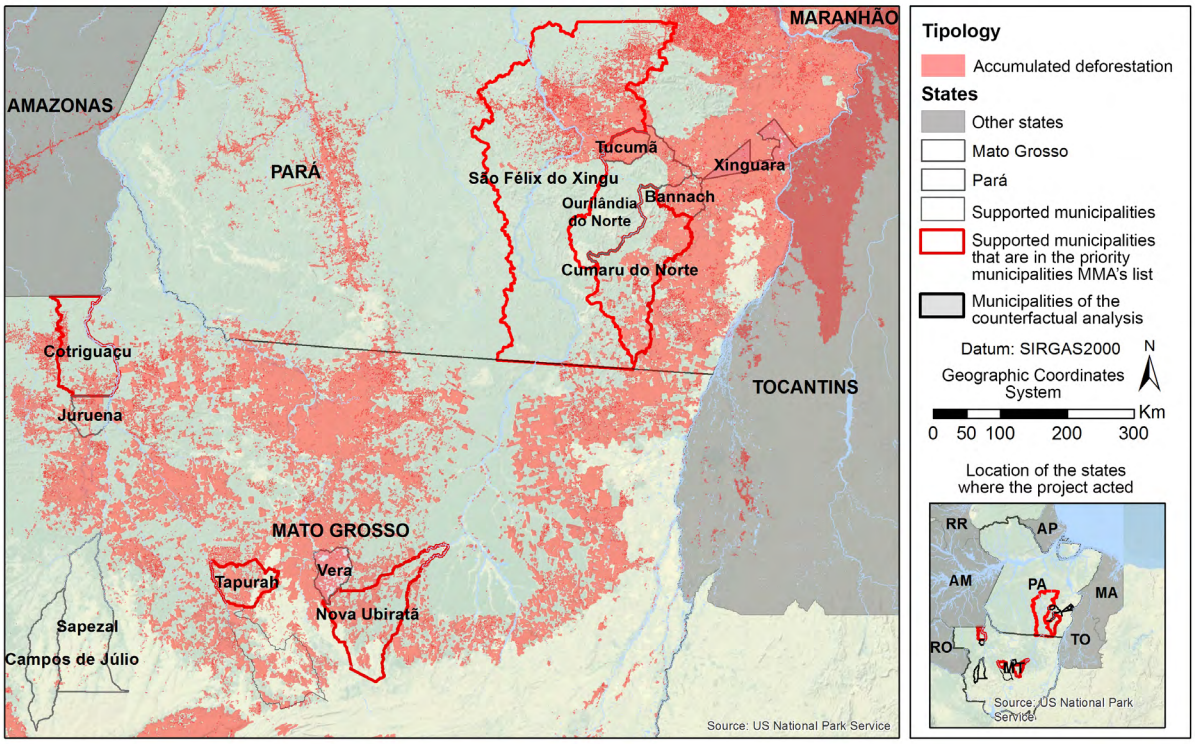


Image *1. Highlight on the 12 municipalities supported by the Going Green project, including the municipalities of Vera (MT) and Xinguara (PA), which were used as samples for counterfactual evaluation.*

This project aimed at supporting the conformity of anthropic activities to environmental legislation, supporting territorial ordering, contributing to reduce deforestation and helping municipalities that had agricultural activities embargoed to leave the priority municipalities MMA list.

Criteria for inclusion in and removal from the MMA's list of priority municipalities for the monitoring and control of deforestation

According to Decree 6,321 / 2007, the MMA is responsible for a list of Municipalities in the Amazon which are responsible for the largest deforestation. This list takes into account the following criteria:

I. Total area of cleared forest;

II. Total area of cleared forest in the last three years and;

III. Increased deforestation rate in at least three of the last five years.

Removal from this list and inclusion in the list of municipalities that have their levels of deforestation monitored and controlled demands:

I. 80% (eighty percent) of the CAR of its territory realized, except the public domain conservation units and homologated indigenous lands;

II. that deforestation in the year 2012 was equal to or less than 40 km2 and;

III. that The deforestation averages of the 2010/11 and 2011/12 periods are inferior to 60% in relation to the averages for the 2007/08, 2008/09 and 2009/2010 periods (Decree 6,321 / 2007 and Decree 411/2013).

The project was designed with a general objective and two specific ones. The general envisaged governmental and non-governmental actions to ensure the compliance of anthropic activities with environmental legislation in the selected municipalities. The first specific objective was developed so that monitoring, control and environmental accountability institutions would be structured and modernized in the supported municipalities. The second aimed at facilitating that rural producers had access to environmental regulation. Each specific objective was supported by a series of products and services that will not be detailed in this evaluation

Thus, the actions of the project aimed at strengthening municipalities in the promotion of rural properties environmental adjustment, through the adhesion to the CAR and, in this way, contribute to the reduction of annual deforestation rates and enable the removal of the municipalities mentioned above from the MMA list.

The main indicators selected, in turn, intended to monitor deforestation rates in the region of Pará and Mato Grosso, the removal of the embargoed municipalities from the list and the number of properties that had their CAR application registered in the area covered by the Going Green project.

2. Introduction

For this evaluation, which is based on the Going Green project logical framework, four major results were defined from the final report presented by the TNC to the Amazon Fund:

- Support to the implementation of the CAR and of a model of economic development that is based on the environmental suitability and socio-environmental sustainability of the agricultural sector;
- Construction of technical instruments to allow greater adhesion of rural producers to the CAR;
- Elaboration of maps and analyzes to help processes of rural properties environmental regularization, forest recovery, environmental control of municipalities and;
- Development of a system to monitor the environmental adjustment of rural properties.

The purpose of this evaluation is therefore to determine to which extent the TNC project was relevant, efficient, effective, sustainable and generated impacts within the scope of the objectives observed with the Amazon Fund. It also seeks to identify the strengths and weaknesses of the project, as well as challenges and lessons learned.

Under the cooperation agreement between the National Development Bank (BNDES) and the German Cooperation for Sustainable Development (GIZ), this evaluation will support the Amazon Fund in its demands of: accounting to its donors for the type of projects that are supported and its effects; enable institutional learning, helping to improve the quality of projects and prioritization of investments, thus supporting decision-making; verify if the projects supported comply with the Cancun safeguards agreed under the United Nations Framework Convention on Climate Change (UNFCCC) for REDD+ actions; and verify the alignment of the projects with the PPCDAm and the state plans.

The report is organized according to the general and specific objectives highlighted in the previous section. For each of these, the main positive aspects and challenges of the intervention will be pointed out.

Expecting to contribute to the improvement and better allocation of the Fund's financial resources and the achievement of the programmed results, at the end of this evaluation, detailed recommendations will be proposed for specific actors, such as the executors, the direct and indirect beneficiaries, the MMA and the Amazon Fund.

3. Methodology

The effectiveness evaluation was based on the Organization for Economic Cooperation and Development (OECD) criteria of relevance, effectiveness, efficiency, impact and sustainability, as well as cross-cutting criteria for poverty reduction, gender equity and issues related to the REDD+ safeguards, set out in the Conceptual Framework for evaluating the effectiveness of the projects supported by the Amazon Fund[2].

In the preparation phase of the evaluation, quantitative and qualitative data were collected from secondary sources, composed of project-related information available on the BNDES and TNC websites, as well as in the annual reports of the Going Green project. Also in this stage, using technical criteria, two municipalities were chosen for the counterfactual project analysis. An evaluation preparation meeting was held in October 2016, with the participation of technicians from the Amazon Fund / BNDES team, GIZ technicians and external consultants hired for evaluation. The purpose of the meeting was to present an effectiveness evaluation proposal and the next steps.

In the next phase, the field mission was carried out in the supported municipalities, aiming at collecting data through visits to institutions and key actors involved. During the mission, six municipalities of Pará (São Félix do Xingu, Tucumã, Ourilândia do Norte, Cumaru do Norte, Bannach and Xinguara - counterfactual municipality) and seven municipalities in Mato Grosso (Cotriguaçu, Juruena, Novo Mutum, Nova Ubiratã, Sapezal, Campos de Júlio and Vera - counterfactual municipality) were visited.

Meetings and *in loco* structured and semi-structured interviews were held with representatives and TCN technicians, from the respective State Secretariats for the Environment (Cuiabá and Belém), the Municipal Secretariats for the Environment (SEMMA), Rural Unions, Rural Workers' Unions and some rural producers (the list with the interviewees' identification is in Annex 10.5). The same was carried out in the municipalities of Xinguara / PA and Vera / MT, targets of the counterfactual analysis.

The qualitative field research was complemented by the collection of documents, reports and other relevant materials, such as georeferenced maps and photographs. The verification data of the CAR and PRA implementation in the municipalities supported by the TNC were collected from the website of the Brazilian Forest Service (SFB), in the public database of the CAR, updated in November 2016. It is noteworthy that the quantitative information from the SFB are compatible with those found in the TNC's reports.

Finally, a round of consultation was held with the presentation and discussion of the preliminary Report of this evaluation, in order to collect input that could be considered in this evaluation. Such input was presented by the evaluation reference group, composed of the technical team of the BNDES, the TNC and the pairs - similar initiatives or those that converge with TNC's - represented by the Institute of Man and the Environment of the Amazon (Imazon), Amazon Environment Research Institute of the Amazon (IPAM) and the Secretariat of Agriculture and Environment of Mato Grosso (SEMA / MT). After this event, the present Going Green project effectiveness evaluation report was consolidated.

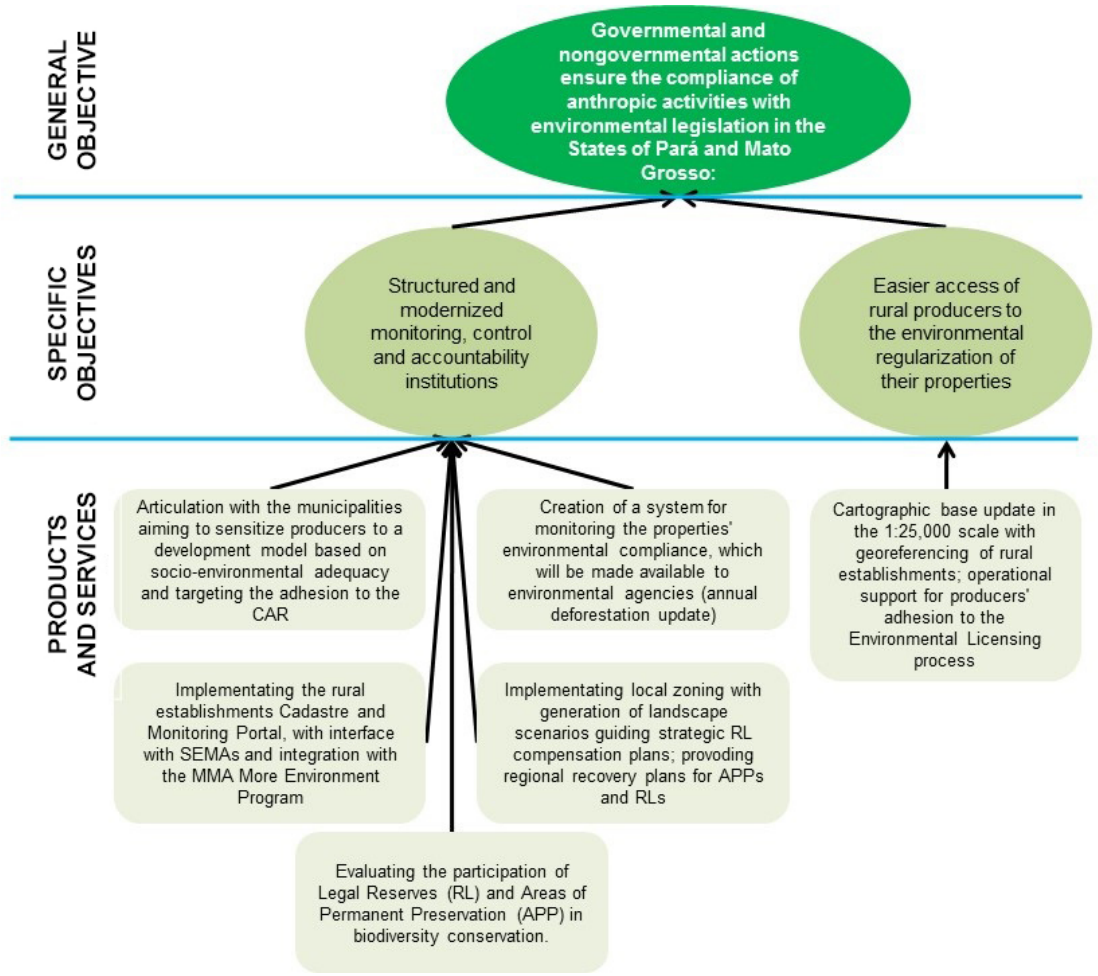
[2] Conceptual Framework for assessing the effectiveness of projects supported by the Amazon Fund, available at: http://www.fundoamazonia.gov.br/FundoAmazonia/export/sites/default/site_pt/Galerias/Arquivos/Marco_Conceitual_Avaliacao_de_Efetividade_Projetos_Fundo_Amazonia_2016.pdf.

4. Results

The Going Green project was designed to support the environmental adjustment of rural properties in Pará and Mato Grosso municipalities. These states were selected because they were the biggest deforesters at the beginning of the project and for their pioneering CAR implementation.

For this evaluation, the logical framework structure proposed in the scope of the Amazon Fund will be considered. This structure has a general objective and two specific ones, the latter with six products and services. Below, the structure (objective tree) of the Going Green project is observed.

Chart 1. *Structure of the Going Green project*



The agreement signed between the TNC and the BNDES, within the Amazon Fund, provides that the resources intend to: (i) contribute to the mobilization of local actors in 12 municipalities between Mato Grosso and Pará with a view to joining the CAR and (ii) monitor deforestation in the region through satellite images. Therefore, contractually, the Going Green project focuses on the development of the CAR and the dynamics of deforestation in these municipalities. In the scope of this evaluation, the elaboration of the products and the execution of the programmed services were verified, connecting them to effective fulfillment of the specific objectives and the general objective of the project.

It is possible to conclude that the Going Green project played an important role in the effort to strengthen governmental and non-governmental actions to ensure the adequacy of anthropic activities. The number of rural properties registered and included in the state Integrated Environmental Monitoring and Licensing System exceeded what was expected by the project.

However, the enrollment in the CAR is only the initial step for environmental suitability, leaving for the other implementation stages of the PRA, when applicable, the execution of the Degraded Areas Recovery Project. These still represent a challenge (chart 4) beyond the actions implemented by the project.

According to what was seen in the field mission, it is possible to attest that several external factors contributed to the increase of deforestation rates in the project areas. For example, the impact of large hydroelectric projects, such as Belo Monte; migration of Rondonian families to the north of Mato Grosso, mainly Cotriguaçu and Juruena, and the expansion of livestock areas in Pará and soybean planting in Mato Grosso, with small cumulative advances on the forest.

The considerable progress of agricultural production in the target municipalities of the project can be noticed in table 1. The twelve beneficiary municipalities registered 32.5% growth in their cattle herd, compared to the rest of the states of Mato Grosso and Pará, which grew by 9.22%. That is, livestock activity grew in these municipalities in the last decade, concentrating in 2015 about 9.1% of the total cattle herd of the two states. As for the increase in areas dedicated to soybeans, the twelve municipalities had a 23.7% growth, notably in Mato Grosso. The remainder of the two states accounted for 57.2%. The twelve municipalities, in 2015, accounted for 16% of the soybean area in the two states. This trend shows that soy has vast areas in Mato Grosso, being the main rural activity.

Table 1. *Increase of the cattle herd and of the planted area of soybean in the period 2005-2015 in the municipalities supported by the project and the rest of the states.*

Municipality/ state	INCREASE OF CATTLE HERD (Nº OF HEADS)				SOYBEANS PLANTED AREA (HA)			
	2005	2015	Increase of Cattle Herd (between 2005 e 2015)		2005	2015	Increase of Soybean Area (ha) between 2005 e 2015
Bannach – PA	201,557	231,288	14.75 %		-	-	0 %
Cumaru do Norte - PA	549,673	772,554	40.55 %		-	7,800	0 %
Ourilândia do Norte - PA	216,980	181,074	-16.55 %		-	-	-
São Félix do Xingu - PA	1,581,518	2,222,949	40.56 %		-	-	-
Tucumã – PA	359,975	284,593	-20.94 %		-	-	-
Campos de Júlio - MT	13,895	47,922	244.89 %		214,915	192,631	-10.37 %
Cotriguaçu - MT	142,009	293,509	106.68 %		-	14	0.0 %
Juruena – MT	129,756	192,033	48.00 %		-	-	-
Nova Mutum - MT	104,897	96,795	-7.72 %		333,780	400,500	19.99 %
Nova Ubiratã - MT	31,666	78,295	147.25 %		193,135	358,000	85.36 %
Sapezal – MT	40,842	89,599	119.38 %		376,877	390,000	3.48 %
Tapurah – MT	49,199	46,359	-5.77 %		108706	170500	56.85 %
Total supported municipalities	**3,421,967**	**4,536,970**	**32.58 %**		**1,227,413**	**1,519,445**	**23.79 %**
Rest of PA e MT	**41,293,202**	**45,098,690**	**9.22 %**		**4,962,721**	**7,801,294**	**57.20 %**

Source: *Municipal Livestock Research and Municipal Agricultural Production, SIDRA/IBGE.*

In addition to the agricultural and soybean expansion in the target municipalities, the low ability of federal, state and municipal governments to exercise their power of command and control at local level, through information collected from the CAR, allowed the increase of deforestation.

4.1. General Objective (Monitoring and Control Component): governmental and non-governmental actions ensure the compliance of human activities with environmental legislation in the States of Pará and Mato Grosso

In order to achieve this objective, the project supported the inclusion of 12 City Halls, the participation of 9 rural unions (São Félix do Xingu, Ourilândia do Norte, Tucumã, Redenção, Cumaru do Norte, Bannach, Nova Mutum, Nova Ubiratã and Sapezal), one rural producers' association (Mato Grosso State's Soybean and Corn producers - Aprosoja), a Federation (Agriculture and Livestock Federation of the State of Mato Grosso - FAMATO) and several local leaders in the dissemination of technical instruments and legal guidelines to promote the environmental compliance of productive activities to the Forest Code. In addition, it has established partnerships with the State Environmental Agencies (OEMAs) of Mato Grosso and Pará, Pará Land Institute (ITERPA), Mato Grosso Institute of Lands (INTERMAT) and National Institute of Colonization and Agrarian Reform (INCRA) .

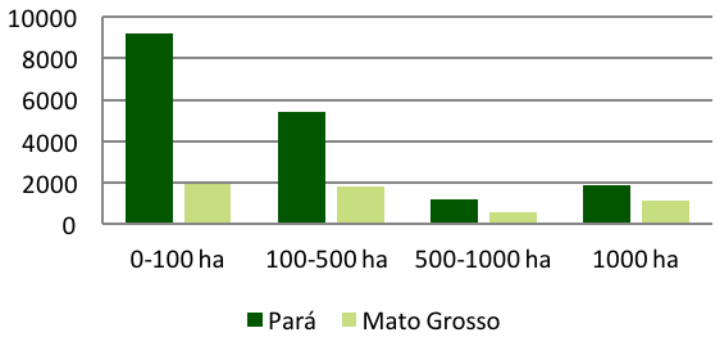
Government actions focused on municipalities City Halls, which were equipped with a situation room and had their staff trained and qualified. The most relevant result, however, was the scientific innovation of creating a cartographic base in a 1: 25,000 scale. The cartographic bases previously available for beneficiary municipalities were generally in the 1:1,000,000 scale. The elaboration of this cartographic base in an innovative scale for the region allowed better territorial, environmental and social planning. Thus, municipalities began to support and promote the execution of the CAR in the municipality, improving the quality of the productive units geo-referencing and the time in the expedition of the document.

SEMAS / PA and SEMA / MT received this cartographic base in the 1:25,000 scale, as well as ITERPA, INTERMAT and INCRA, facilitating the reception of the CARs elaborated in the municipalities and in the demands for environmental and land regularization.

The work with the rural unions and producer associations was to raise awareness and mobilize for the inclusion of properties in the CAR, as a start for the environmental regularization process. These actors played a key role in promoting meetings, workshops and other events to clarify and motivate producers to adapt their production units to environmental legislation. The results were significant for most municipalities that received support, with the goal of enrollment in the CAR being achieved and sometimes surpassed.

It is also important to highlight the importance of gender discussion. The literature has highlighted the importance of including women in the environmental adjustment activities and the fact that the role of women in rural areas and especially in family agriculture is invisible. Therefore, a gender specific perspective would be important at this stage of the project. Generally, women have their husbands, fathers or siblings as legal representatives and remain invisible (Albuquerque de Melo, 2002). In reference to the results of the project and based on the National System of Rural Environmental Cadastre (SiCAR), chart 1 shows the number of registrations in the CAR by rural properties size range. This indicates the strong participation of family farmers in the process of adhesion to the CAR, with 9,200 registered farmers in Pará and almost 2,000 members in Mato Grosso, confirming the support of the Going Green project for the participation of farmers with up to 4 fiscal modules, as predicted by the Amazon Fund.

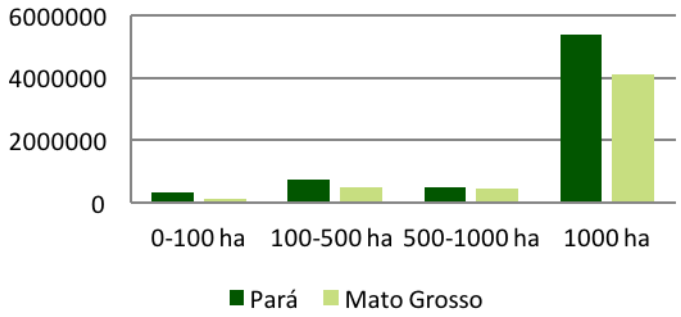
Chart 2. *Number of registrations in the CAR by property size updated until November 2016*



Source: *SiCAR.*

However, due to the high concentration of land in the areas under work, the volume of registered area by the medium and large producers is higher, as can be seen in Graphs 2 and 3. The next chart relates the registered area and the size of the properties, emphasizing the issue of land concentration.

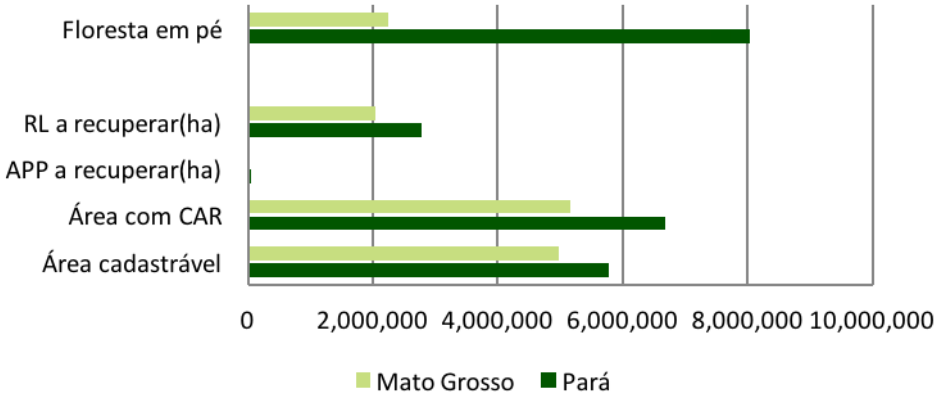
Chart 3. *Area with CAR (ha) X size of rural property updated until November 2016*



Source: *SiCAR.*

The chart below lists the area that can be registered, the area that was actually registered in the CAR, the total legal reserve and permanent preservation areas to be recovered in the municipalities. The chart also informs the total area of forest remnants of the municipalities with more than 2 million hectares in Mato Grosso and 8 million hectares in Pará. According to the SICAR, the area with CAR is already larger than what was expected by the Service Brazilian Forestry (SFB).

Chart 4. *Environmental assets and liabilities of the Going Green project municipalities (ha) updated until November 2016.*



Source: *SiCAR.*

This information proves that the Going Green project contributed in a significant and effective way to promote the registration of rural properties in the CAR and to identify APP and legal reserve environmental liabilities areas.

Box 1. *The Going Green project and deforestation dynamics*

Deforestation in the Amazon has multiple factors, difficult to isolate, even in a more careful analysis. The purpose of the Going Green project was to contribute to the reduction of deforestation rates through the process of environmental adequacy of rural properties, which leads to the planning of the production unit and the end of illegal deforestation.

Project support contributed to relatively low levels of deforestation during implementation and the year following it (Table 2). As a consequence, deforestation rates fell about 32% between the project period and the five years prior to it, and 42% between the project completion and implementation period. However, this was not enough for the municipalities of Cumaru do Norte, São Félix do Xingu, Nova Ubiratã, Tapurah and Cotriguaçu to leave the list of Decree 6,321 / 2007 - MMA, considered the municipalities with the largest deforestation in Amazonia in the last decade (2007 -2017). It is also worth noting that the project worked in municipalities that reached almost 50% of deforestation levels in their areas, as is the case of Juruena, Tapurah and Cumaru do Norte. Bannach and Tucumã already surpassed 70% of deforested area.

Table 2. *Municipalities supported by the Going Green project: increased deforestation.*

Municipality	Base line 2005-2009 Sum (km^2)	Project execution period: 2010-2014 Sum (km^2)	Sum of rates in the finalization and post-project period (2013-2015)	% of deforested area of the municipality
Campos de Júlio (MT)	2.5	0.8	0.6	1.56 %
Cotriguaçu (MT)	594.3	217.6	145.9	22.23 %
Juruena (MT)	252.7	67.1	26.4	43.76 %
Nova Mutum (MT)	133.3	49.5	25.8	30.30 %
Nova Ubiratã (MT)	518.4	192.7	53.4	34.57 %
Sapezal (MT)	25.9	2.6	1.9	1.37 %
Tapurah (MT)	119.2	95.8	68.2	45.58 %
Bannach (PA)	259.2	41.1	29.7	73.42 %
Cumaru do Norte (PA)	1271.2	261.7	103.4	42.46 %
Ourilândia do Norte (PA)	107.9	31.0	14.7	11.78 %
São Félix do Xingu (PA)	4256.7	1479.9	571.5	21.23 %
Tucumã (PA)	55.9	12.2	8.5	91.00 %
TOTAL	7597.2	2452	1050	

Source: *Program to Calculate Deforestation in the Amazon by IPAM (Prodes)/ National Institute of Space Research (INPE).*

Table 3 lists information on the dynamics of deforestation in municipalities during the execution period of the Going Green project. It is possible to notice that in the municipalities of Sapezal and Campos de Júlio deforestation tends to zero, with the area of use stabilized. In Sapezal, 20% is still forested, Campos de Julio already has about 7% still forested (Prodes / Inpe). Deforestation above 40 km^2 per year (criterion for the maintenance of the embargo toward the municipality) occurred in the municipalities of São Félix do Xingu, Cumaru do Norte and Cotriguaçu. In the other municipalities, the annual increase has been below 40 km^2, some with significant decreases such as Nova Ubiratã and Tapurah.

Table 3. *Deforestation dynamics in the municipalities supported by the project.*

Municipality	Priority municipality?	Increase in deforestation in km²					
		2010	2011	2012	2013	2014	2015
Campos de Júlio (MT)	No	0,2	0,1	0	0,5	0	0,1
Cotriguaçu (MT)	Embargoed (2008)	27,4	21,9	44,5	42,6	45	58,3
Juruena (MT)	No	15,1	6,4	10,3	12,3	7	7,1
Nova Mutum (MT)	No	12,4	9,3	11,5	6,3	5,6	13,9
Nova Ubiratã (MT)	Embargoed (2008)	22,8	94,3	19,8	9,7	15,6	28,1
Sapezal (MT)	No	0,1	0,3	0,4	1,4	0,2	0,3
Tapurah (MT)	Embargoed (2011)	13,6	20,9	4,4	16,1	33,4	18,7
Bannach (PA)	No	5,7	5,7	6,8	4,6	2,7	22,4
Cumaru do Norte (PA)	Embargoed (2008)	43,6	58,9	58,9	37,7	25,2	40,5
Ourilândia do Norte (PA)	No	3,3	5,8	4,8	4,6	4,9	5,2
São Félix do Xingu (PA)	Embargoed (2008)	354	140	169	220,4	152	199,2
Tucumã (PA)	No	2,5	1,7	1,1	1,7	2,6	4,2

Source: *Prodes/Inpe.*

The high number of rural producers that have adhered to the CAR and have not progressed to establish the PRA could end up compromising that deforestation is definitely avoided in the registered areas. However, more recently, this trend has been reversed due to the lack of monitoring and control instruments. Field research has shown that deforestation in areas registered in the CAR is monitored, identified and can be controlled. However, in municipalities where the annual rate exceeds 40 km² per year, areas are being deforested more frequently in settlements and in areas outside of CAR properties.

In the case of São Félix do Xingu there is a strong influence of migration, the population grew from 91,340 inhabitants in 2010 to 120,580 in 2016, 32% in six years. In this same period, the population of Pará grew by 9.1%. Other factors are the works of Belo Monte and the existence of hundreds of gold and cassiterite mining fronts (Sidra / IBGE).

In Cotriguaçu, deforestation also originates in the migratory flow, since the municipality has been receiving a significant number of people coming from the state of Rondônia. In 2010 it had 14,983 inhabitants, reaching 18,209 in 2016, a growth rate of 21.53%. In the same period the population of Mato Grosso grew 8.9%. Therefore, as much as it contributes to the fight against deforestation in the supported municipalities, there are externalities that are beyond the control of the project.

Positive Aspects

The Going Green project enabled municipalities to know the territory in detail with information about environmental surpluses and deficits, the georeferenced location of rural properties and the identification of their owners, facilitating monitoring, control and inspection actions.

The articulation made with actors from the state environmental agencies of Mato Grosso and Pará, with municipalities and with bodies that represent the rural producers of the 12 municipalities targeted by the project was relevant. The project also had the partnership of the OEMs from Pará and Mato Grosso, the Green Municipalities Program (PA) and federal government agencies, such as the Ministry of the Environment and INCRA.

The participation of rural unions, associations of producers and non-governmental organizations in the project allowed the insertion of new forms of production with the inclusion of good practices for livestock and cocoa, consequently fostering environmental adequacy. This practice made the link between local production and the market, stimulating producers to regularize their production units with the recovery of APPs and legal reserve. This process of environmental regularization, with the CAR as an initial step, also ensured that the meatpackers continued to buy local production, that the soybean chain kept its commitments (also in relation to international certification) and that family farmers could have access to financing from National Program Strengthening of Family Agriculture (PRONAF)

The induced process of environmental regularization has created a window of opportunity for service providers in the areas of geoprocessing, seedling production and technical assistance for production with good agricultural practices. Another positive point highlighted by the productive units' geo-referencing was the need for a broad land regularization process, the main problem pinpointed by the beneficiaries who were interviewed.

The project worked in the municipalities so that the local public power would be strengthened and could initiate a process in search of this environmental management sustainability. This contribution has brought the issue of environmental regularization to the center of discussions between Municipal Secretariats of the Environment and rural producers, which has been seen as a path that will allow for advances in environmental regularization, possible recovery of environmental deficits, and the development of productive sustainable activities.

Finally, in the context of the support of the project and the implementation of the forest code, governments, rural producers, the consumer market and society have an instrument that allows the monitoring of productive units regarding their environmental regularity, increasing transparency and social control instruments over rural production.

Challenges

The biggest challenge remains to remove Sao Felix do Xingu, Cumaru do Norte, Nova Ubiratã, Tapurah and Cotriguaçu from the list of the most deforested municipalities, suspending the embargo[3] determined by the Federal Government on productive and commercial activities in rural properties.

Another major challenge identified is to keep municipal governments committed to monitoring, controlling and supervising rural properties environmental assets and liabilities. In addition to the command and control instruments, other mechanisms should be encouraged, such as good agricultural practices, with increasing demand for technical assistance and rural credit.

There was little dialogue with rural workers' unions and rural women workers, who should have been more encouraged towards the CAR and the recovery of areas aimed at developing sustainable productive activities, the focus of actions supported by the Amazon Fund. Encouraging the participation of local communities in the dissemination of sustainable use alternative practices and directing production to specific markets remain a challenge to be overcome, as market demands have a faster and longer-lasting effect on the environmental adequacy of rural properties than legal norms.

The gender issue is still a challenge. It is important that women can have the importance of their voice and their role for agriculture and environmental regularization recognized and respected, which will potentially reinforce the positive results of these interventions. Women also play an important part in social and environmental control, and can be allied in measures to control deforestation.

Another major challenge concerns the battle against deforestation. Reductions in deforestation rates depend on more effective government control and command actions. The project alone would not be able to achieve these results. It is necessary that other command and control efforts at governmental level are implemented to keep deforestation rates declining in the municipalities of Cumaru do Norte, São Félix do Xingu, Tapurah, Nova Ubiratã and Cotriguaçu, so that they could no longer be included in the MMA list. Although all of them have achieved 80% of real estate registration in the CAR, none has reduced deforestation

[3] Embargo is a mechanism deployed in order to apply sanctions due to irregular exploitation of natural resources that may cause irreversible damage to wildlife. Non-authorized deforestation is a violation that is punishable with not only fines, but also with the interruption of all or some of the activities being carried out in an specific property and the judicial seizure of the goods being used for this purpose.

to levels below 40 km^2 per year, so that they could definitely leave the federal embargo.

As shown in Table 4, the municipalities that are supported by the project and remain on the priority list of Decree 6,321 / 2007 - MMA, could not leave it because they did not meet at least one of the necessary criteria (Decree 6.321 / 2007 and Ordinance 411/2013).

Cumaru did not fulfill the CAR's registration criteria, nor did it have deforestation of less than 40km^2 in 2012, and São Félix do Xingu maintained high rates of deforestation in 2012. Tapurah and Ubiratã, despite complying with the CAR registration and deforestation rate criteria in 2012, did not have deforestation below 60% between the periods determined by Ordinance 411/2013. Lastly, Cotriguaçu, met the criteria for enrollment in the CAR and rate below 60% between the periods, but cleared more than 40km^2 in 2012.

Table 4. *Application of the MMA criteria for removal from the priority municipalities list in the municipalities supported by the Going Green project.*

Supported Municipalities that did not leave the list of major deforesters	CAR	Deforesting			
	*80% of the municipality registered?	Deforestation in 2012 of less than 40 km^2?	Average of averages (2007/08, 2008/09 and 2009/10)	Average of period's average (2010/11 and 2011/12)	% Of the average of the 2010/11 and 2011/12 periods compared to the average of the 2007/08, 2008/09 and 2009/10 periods is less than 60%
Cotriguaçu (MT)	108.59%	44.5	63.8	28.9	45.37%
Nova Ubiratã (MT)	108.43%	19.8	64.3	57.8	89.89%
Tapurah (MT)	127.47%	4.4	9.5	15.0	158.20%
Cumaru do Norte (PA)	71.53%	58.9	130.5	55.1	42.21%
São Félix do Xingu (PA)	115.81%	169.1	608.4	200.9	33.02%

Sources: *Prodes/Inpe. SiCAR. * Information based on the Cadastre made until November 2016.*

4.2. Specific Objective 1: Structured and modernized environmental monitoring, control and accountability institutions

Historically, command and control actions in the Amazon forest have been managed by the Federal Government, through the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). This institution carries out inspection operations on deforested areas in the biome. Only in the last two decades states have begun to structure their OEMAs to take on the role of monitoring and controlling deforestation in their forests, but in a very incipient way.

The mechanisms of decentralization and the broad support of technical and financial resources have caused several Brazilian states to create conditions to apply command and control instruments, from monitoring to rural environmental licensing. The municipalities were the last ones to adopt a more effective role for the management of natural resources, although more focused on urban issues. Gradually, they have been assuming their responsibilities regarding the control of rural activities.

The Going Green project aimed precisely at strengthening municipalities to exercise their role in environmental management, focusing on the adequacy of rural properties to environmental legislation. In this sense, terms of cooperation were signed with five prefectures in Pará and seven in Mato Grosso. In each of these a situation room was installed to serve rural producers, all equipped with a computer, a printer, furniture and internet access.

In order to support the introduction of the CAR, the Municipal Environmental Portal - PAM was created with a digital cartographic base in the scale of 1: 25.000 with territorial information on land use. The polygons of the rural properties with the identification of their owners were plotted in this cartographic base. Local teams were trained to use the PAM and TNC technicians

monitored the municipality, providing support throughout the project execution. In partnership with the rural unions and producers' associations, several mobilization and awareness-raising events were held for producers to join the CAR.

Thus, 11,263 CARs were elaborated in the municipalities benefited by the project in Pará, covering a total of 6,684,328 hectares, reaching 100% of the potential area for registration. The highlight was the municipality of São Félix do Xingu, which enrolled 7,425 rural properties and an area of 3,858,337.11 ha. They covered about 80% of the registered area in the state, with the support of the project. In the municipalities supported in Mato Grosso, the number of CARs was of 5,530, covering an area of 5,150,207.44 hectares, again fulfilling 100% of the programmed target.

Table 5. *Area that can be registered, registered, number of CAR and areas to be recovered.*

Municipalities	Area that can be registered (ha)	Area with CAR (ha)	% of registered area	N° of CAR	APP to recover (ha)	RL to be recovered(ha)	Standing forest (ha)
Pará							
São Félix do Xingu	3,331,517	3,858,337	115	7,425	18,065	1,525,425	6,142,940
Tucumã	249,109	936,146	375	1,531	157	424,664	21,850
Ourilândia do Norte	207,901	401,174	192	932	1,138	185,641	946,290
Cumaru do Norte	1,706,454	1,220,693	72	892	17,495	495,156	840,590
Bannach	280,124	267,978	95	483	2,412	139,430	72,530
Total	**5,775,105**	**6,684,328**		**11,263**	**39,267**	**2,770,316**	**8,024,200**
Mato Grosso							
Nova Ubiratã	1,113,960	1,207,902	108	1,505	6,306	543,741	551,220
Tapurah	445,175	567,483	127	669	3,033	257,013	175,350
Nova Mutum	952,428	926,847	97	1,202	2,682	373,399	327,430
Cotriguaçu	607,681	659,859	108	706	8,345	250,062	716,020
Juruena	318,844	248,302	78	482	3,606	93,645	149,770
Sapezal	876,395	875,215	100	428	1,235	330,245	285,230
Campos de Júlio	658,242	664,598	100	538	2,643	201,872	47,610
Total	**4,972,725**	**5,150,316**		**5,530**	**27,850**	**2,049,977**	**2,252,630**

Source: www.florestal.gov.br

In terms of alternative actions, the projects "From Field to the Table: Sustainable Meat", with 14 rural producers, and Forest Cocoa, with 100 family farmers, were implemented in Pará, both with the support of the City Hall. The administrations of São Félix do Xingu and Tucumã keep the production of seedlings in municipal nurseries and promote the recovery of degraded APP areas and legal reserve. For this, the Going Green project has published Forest Restoration Manuals as a technical instrument to support the environmental adequacy of rural productive units.

Mato *Grosso Secretary of State for the Environment (SEEMA), Cuiabá (MT)*

Municipal *Secretary for Agriculture and Environment (SAMA), Nova Mutum (MT)*

Secretary *for Economic Development and Environment Coordination, Sapezal City Hall (MT)*

Municipal *Secretary of Environment and Sanitation, São Félix do Xingu (PA)*

Positive Aspects

Although in different levels, the municipalities supported by the project were structured and modernized to promote the adhesion and the elaboration of the CAR for the rural producers and to monitor the registered rural properties. They can also, within their competences, limited to their capacity, license, inspect, notify, prosecute and fine those that do not comply with the environmental legislation.

It was possible to expand the services for producers and get to know the situation of rural landscapes, with regards to environmental deficits and surpluses. The access to equipment, cartographic base, training and capacity building was positive to strengthen the role of municipalities in municipal environmental management.

All the municipalities involved showed an interest in maintaining the assistance to the producers, hiring superior level technicians for the maintenance of the services, indicating a positive political will in relation to the project. Other positive aspects were:

- Municipalities with a cartographic base in the scale of 1: 25,000, compatible with the municipal planning.
- Cartographic basis with land use attributes serving as an instrument for planning, monitoring and environmental control actions.
- Technicians were trained to provide georeferencing services for productive units, identification of APP and RL, and elaboration of polygons with coordinates obtained by precision Global Positioning System (GPS).
- Large number of rural producers (16,892) with environmental diagnostics of their productive units and able to file applications for Rural Environmental License (LAR).
- Significant area of georeferenced private properties (9,985,162 ha), identified and registered in PAMs to be monitored and controlled.

Challenges

The biggest challenge is for municipal governments to continue to support the elaboration of CAR as an instrument of territorial management. It is imperative that they maintain qualified personnel, equipment and get to use and apply the Municipal Environmental Portal (MAP) and especially the cartographic bases for environmental management.

The effort to raise awareness, motivate and promote the adhesion of rural producers should be extended to the adhesion to the PRA, especially when there is a need to recover the environmental liabilities identified in the diagnoses elaborated by the Going Green project. It is also necessary to make technical and economic alternatives for the recovery of altered areas of APP and RL available.

Therefore, it is important to provide technical support, promotion and incentives for rural producers that work on environmental liabilities recovery, aiming to improve the productivity of the areas that can be used in the property, ensuring an increase in income, recovering degraded areas and reducing the pressure on natural vegetation.

4.3. Specific Objective 2: easier access of rural producers to the environmental regularization of their properties

Specific objective 2 had an expected result, which was the updating of the cartographic base in the scale 1: 25000 with georeferencing of rural establishments and operational support to the adhesion of rural producers to the process of Environmental Licensing.

This goal and the results achieved were the project's strengths, highlighted by the TNC repeatedly in the interviews. This was the great learning, which structured a strong science team to monitor and approve the making of maps by private companies. TNC support was fundamental for many producers to start the CAR registry process.

A secondary effect of the project is that many small landowners, due to difficult credit access, either because they do not have the CAR, or because the municipality is part of the list of priority municipalities, have leased their land to large producers. Sometimes these areas are being used as recovered areas, either through lease or direct purchase. In regard to small producers, the CAR was carried out mainly in rural settlement areas, which was later worked on by Incra.

The TNC emphasizes that the elaboration of cartographic bases and land use maps based on high resolution images was fundamental. The accuracy of land use maps is fundamental so that the analyzes of the APP and RL remnants are accurate and obey the proposed scale. Especially in forest regions, the safe identification of secondary, degraded or intact forests required a methodological development by the contracted companies. High precision standard hydrographic mapping, for example, is fundamental for the identification and monitoring of APPs.

This process required a great deal of effort from TNC's Geographic Information Systems (GIS) technicians, requiring numerous corrections of delivered products, until calibration and subsequent analysis were satisfactory. For the TNC, this was the great positive point and lesson learned of the project. It was also the result that demanded the greater financial execution of the project.

Thus, individual property mappings were performed, using as subsidy the cartographic bases and land use maps. Another pioneering technology in the TNC process was the scanning of rural property boundaries at municipal level, eliminating property overlapping errors and adjusting them to the cartographic bases and land use maps. Another major technological advance of the project was the realization of semi-automated environmental diagnoses for all properties.

The results attest that the Going Green project facilitated the access of rural producers to the environmental regularization of their productive units. Through property size analyses, the family farmers were attended to by the municipalities, at no cost to the elaboration of the CAR. This is the first step towards environmental adequacy.

A total of 9,200 family farmers were assisted in Pará, with 342,042 ha registered, and 1,492 in Mato Grosso. This means a cadastre of 111,609 hectares. Rural farmers who have declared properties of up to 100 ha of area are considered family farmers (Annex 10.2.2). In addition, the PAM was built to enable transparency so that environmental control bodies and society could monitor the dynamics of deforestation and recovery of environmental liabilities in registered properties.

As for property size, the CAR was carried out as follows:

- For rural producers with 100 to 500 hectares, the CAR implementation was also significant, due mainly to the mobilization and awareness-raising process. A total of 736,445 hectares were registered in Pará and 472,524 hectares in Mato Grosso. 5,408 rural producers were attended to in Pará, and 1,630 in Mato Grosso (Annex 10.2.2).

Osmar *Isoton, SAMA/Nova Mutum, Ex-secretary, Cartographic material produced by the TNC*

Fernando, *Secretary for Economic Development and Environment Coordination, Technician for CAR.*

- Although they were not the target of the project, medium producers with an area of between 500 and 1,000 hectares also responded to the call for CAR enrollment, with 496,987 hectares registered and 1,171 producers attended in Pará; and 429,058 registered and 522 producers supported in Mato Grosso (Annex 10.3.2).

- The support of the rural unions and the Federation of Agriculture was important for the great adhesion to CAR by the big producers, especially after the new Forest Code. There were 5,393,224 hectares registered in the CAR and 1,896 participant producers in Pará; and 1,152 large farmers registered 4,093,072 hectares in Mato Grosso.

Positive Aspects

The enrollment of rural properties in the CAR by means of a more precise cartographic base obtained significant results, with the identification of the owner/ occupant, location of the area, determination of the productive unit perimeter, definition of the legal reserve and APP of the rural areas in the municipalities of Pará and Mato Grosso.

As a result, access to rural credit, mainly PRONAF, to family farmers enrolled in the CAR and guaranteed sales of herds to meatpackers were made possible.

The project also had an important role for all property segments (small, medium and large) to be influenced to carry out their CAR. The small and medium producers, even registering a smaller area, were able to put their production in the market and became eligible to access PRONAF credit.

As observed in the field mission, in the municipalities of São Félix do Xingu and Tucumã, the recovery of some water APP areas began, with replanting and enclosure for natural regeneration.

Another advantage was the use of the CAR as a tool for rural real estate planning, defining the areas that were most suitable for production, the APPs and the RL, with the possibility of forming mosaics of vegetation forming forest corridors integrating protected areas.

The project, with the environmental regulation, enabled producers with embargoed areas and fines for not complying with the legislation to request the suspension or exemption of fines imposed until 2008, as provided for by current legislation.

Challenges

The main challenge is to sensitize producers to continue with the environmental adequacy of rural properties, with planning for land use, adjusting production and conservation of the productive unit's natural resources

In Pará, only a small portion of the producers that joined the CAR have demonstrated a commitment to recover environmental liabilities. From the total of 10,682 registered producers with legal reserve deficits, only 829 (8.7%) assumed a commitment to join the PRA and the recovery of these areas, with an absence of 9,753 producers. In the case of APP to be recovered, the

total number of producers was 2,280 (40.7%), of which 1,351 did not sign the commitment to recover the areas according to the PRADA. Even with a significant number of producers joining the CAR, the challenge of convincing these producers to complete the APPs and RLs recovery cycle, when applicable, remains.

In Mato Grosso, the situation was better, although not ideal. From the 5,213 rural producers with legal reserve to be recovered, 2,972 signed the PRA and committed to the recovery, while 2,421 owners declined of this decision. Regarding the APPs, the balance was positive, with 1,959 registrations identifying a deficit. Therefore, a total of 2,972 producers are willing to recompose the RLs and APPs (Annex 10.3.4). While producers of soybeans in the state remain in the Chapada, away from the APPs, sparing APPs from cultivation does not represent significant losses. However, PA cattle ranchers rely on river waters for livestock and remove the APPs to facilitate access and increase the grazing area. Rebuilding the areas of environmental deficits – RL and APPs – which amount to 2,809,563 hectares in the municipalities of Pará and involve the adhesion of 10,682 rural producers, plus 2,077,827 hectares of liabilities in Mato Grosso, involving the participation of 5,213 producers, is doubtlessly the greatest challenge to guarantee the effectiveness of the PRA and its use as an instrument for balancing the sustainable use of natural resources. (Annex 10.3.3).

Another challenge is to speed up the process of analyzing CAR information for the ratification of registrations through the SiCAR. Of the 11,834,534 ha of CAR areas registered in MT and PA, only 1,854,073 had been analyzed, accounting for 15.6% of the total (SiCAR, 2016).

Regarding the mosaics of remnant forest areas, although they were identified and quantified, no biodiversity conservation plan for the integration of ecological corridors at a regional scale was formalized.

4.4. Analysis and evaluation of counterfactual samples

In order to verify the success of the Going Green project intervention, a counterfactual evaluation was carried out in the municipalities of Xinguara / PA and Vera / MT. Neither were directly supported by the project. Such an evaluation is intended to comparatively analyze what would have happened had the project intervention not happened. Thus, a comparison was made, with data in a control group with similar characteristics, but which had not not participated in the project (GIZ et al., 2016).

The reference for choosing the municipalities was the proximity to the ones that participated in the project, being influenced by the same public policies, such as infrastructure, rural credit, technical assistance, market access and occupation history. Table 2 shows the comparison between the municipalities covered by the Going Green project and the counterfactual samples.

Brief analysis of Vera and Xinguara spatial and economic profiles

Vera / MT is located in the Amazon biome (image 1), has 2,952 km^2 and an economy characterized by agricultural activity. Thus, as in the municipalities supported by the project, there is a predominance of cattle raising and agriculture with soybeans, which grew 24% and 41% respectively in the last ten years (SIDRA / IBGE). Vera is not included in the list of the most deforested municipalities in the Amazon, with a forest remnant of 984,60 km^2 (or 33.3%), and the sum of the deforestation rates of the last four years (2012-2015) was 22,1 km^2, but accumulated deforestation is 1949.5 km^2 (66%).

Xinguara / PA is located in the Amazon biome (image 1), it has 5,779.4 km^2, due to the opening of the highway PA-279 in 1976. The highway was designed with the purpose of connecting the municipality of São Félix do Xingu to the PA-150 highway that cuts through the state of Pará. The municipality's economy is focused on farming and mining (nickel and pebble and sand mining in rivers). It has a strong emphasis on beef cattle, which has about 500 thousand head of cattle, as well as a certain contribution to the dairy basin of the state of Pará. The Municipality is not part of the List of those which deforest more, possessing a remnant of forests of 397,4 km^2 (or 10.48%) in 2015, with the sums of deforestation rates of the last four years (2012-2015) being 5.4 km^2, with cumulative deforestation of 3,377.5 km^2 (or 89.05%) up to 2015 (Prodes / Inpe).

One of the relevant aspects of the Going Green Project was the support to the City Halls, aiming their structural strengthening, through the provision of equipment, methodologies, geotechnologies and local staff training. The administrations of Vera and Xingaura, which were not the target of the project or other initiatives, had access difficulties to such improvements.

The municipality of Vera had recently organized its Secretariat for the Environment, created in 2016,

merging with another to constitute the Secretariat for Agriculture and Environment (SAMA). Currently there are no technicians dedicated to the environmental area, except one who supports sanitary control, but officially belongs to the Institute of Agricultural Defense of the State of Mato Grosso (INDEA). In this context, the Secretariat is not physically and technologically structured, nor does it have organized data about its producers. SAMA did not have financial and human resources to carry out the CAR. This was directly done by a private company, through the mobilization of the Rural Union with the local producers. The union also made its physical infrastructure available for the realization of the CAR. The Rural Union (SR) has about 110 members. However, some of the producers belong to other municipalities, such as Sorriso. About 72% of the municipality's CAR has already been done, 8% less than the average of the municipalities by the TNC.

The municipality does not have a specific cartographic base for the work of the environmental agencies, nor does it control the evolution of the CAR, the map of degraded APPs, or monitors deforestation in the municipality.

In the case of Xinguara in Pará, the Secretariat of Environment and Tourism of the Municipality (SEMMATUR) was created in 2007. This secretariat has four (4) technicians, including the municipal secretary, in its board. Almost all are technical civil servants: one (1) biologist, one (1) environmental engineer (secretary), one (1) inspector, besides one (1) agronomist engineer who was hired and therefore is not a civil servant. They basically carry out four activities related to the environmental area: environmental education, monitoring, inspection, environmental licensing of activities with less impact potential, acting predominantly in the urban area of the municipality. They began training to act in rural areas and also have a municipal nursery for seedlings production (production of 24 thousand / year), which they intend to strengthen for use in the RL and APP recomposition.

SEMMATUR received support to its strengthening through agreements with the Green Municipalities of Pará Program (a project supported by the Amazon Fund), being granted with a pick-up truck, GPS device, a camera and a notebook. In addition, the State Department for the Environment passed on a printer and computers. As the municipality was not directly involved in the implementation of the CAR, which is being carried out by the Technical Assistance and Rural Extension Company of the State of Pará (EMATER / PA) in partnership with the Rural Producers' Union of Xinguara, this support for strengthening is useful for activities of environmental control in the urban area and its surroundings. In the municipality, the CAR was performed in about 90% of the registered area, until November 2016. These still have many quality problems for validation, mainly due to overlaps.

In addition, both Vera and Xinguara do not receive newsletters or deforestation alerts; do not have staff who are trained to use the Integrated Management System (GIS); do not have access to the cartographic bases and have no knowledge of the municipality's environmental liabilities and assets, nor can access the tools which are available in the State for this monitoring: SiCAR, deforestation bulletins, monitoring tools, among others. The recovery of APPs is a theme whose evolution both municipalities follow closely and have an interest of applying to their own municipalities, but which is still not viable. The empowerment of the CAR / PRA instrument still requires capacity building and structural strengthening of the Secretariat.

Although numerically there is not a very large difference between the number of CARs carried out in the municipalities of Vera and Xinguara, the lack of support to rural producers, mainly to family farmers, was translated into a higher cost to obtain CAR, since the City Halls were not involved in providing technical support to rural producers for the environmental adequacy of their properties.

The support of the Going Green project was important to create a culture of environmental management in the City Halls it supported, expanding their work beyond the urban issues, a situation not found in the City Halls of these municipalities where the counterfactual was done.

Based on this analysis, it is possible to conclude that the project made a difference in the performance and empowerment of municipal governments, in the effort to promote the adjustment of rural properties to environmental standards in the municipalities that received BNDES support.

Box 2. *Counterfactual of the actions supported by the Going Green project in comparison to the municipality of Vera / MT.*

STIMULATED ACTIONS	Going Green			VERA (MT)			XINGUARA (PA)			SITUATION ANALYSIS
	No	Partial	Effective	No	Partial	Effective	No	Partial	Effective	
Articulation with the municipality and awareness-raising for enrollment in the CAR			X		X		X			The Going Green Project carried out the articulation with the environmental agencies of the twelve supported municipalities, aiming at awareness-raising and enrollment in the CAR. In Vera and Xinguara, only the Rural Union supported such awareness-raising.
CAR monitoring and control system and deforestation in operation at SEMMA		X		X			X			The TNC has developed a system of CAR and deforestation monitoring in municipalities, which will still need to be adapted, aiming at interfaces with the state and federal systems for full implementation. Vera and Xinguara do not yet have a system and resources for its implementation.
Cartographic base 1:25.000 made available and in operation.			X	X			X			Municipalities supported by the TNC have cartographic bases for the work of environmental agencies. The municipality of Vera has only one map of the municipality created by Indea for phytosanitary control of livestock production. In the case of Xinguara technicians still do not master the use of SIG tools for use of the available bases.
Area of rural properties geo-referenced with the support of SEMMA.			X		X		X			The georeferenced properties in Vera and Xinguara are available only in the SiCAR, with no basis for the secretariat of the environment.
Technicians are trained and provide support to rural producers			X	X			X			The environmental agencies supported by the Going Green project were trained in the use of geotechnologies to support the enrollment in the CAR. Vera's secretariat for the environment (2014) is recent and in the case of Xinguara (2007) has not yet qualified its staff for this purpose, so both still do not have active human resources.
Municipality with more than 80% of the area with CAR.			X	X					X	The goal of covering over 80% of the municipal area with CAR was reached for all municipalities of the Project. In Vera, the target of 80% has not yet been reached, and in the case of Xinguara, although reaching 90%, this figure is highly disputed due to the problems in the quality of this CAR.

5. Project Management and Monitoring

The project was managed in a decentralized manner, with two fronts, one in Pará and another in Mato Grosso. Each state had a specific team and a state coordinator. Therefore, the project presents important specificities in each state, although the strategy was national.

The Belem office was responsible for supporting the five prefectures of Pará, taking on the coordination, providing local technicians, materials, equipment, technical and logistical support and approaching SEMA / PA. Likewise, in Mato Grosso, Cuiabá's office played the same role, providing all the conditions for the execution of the project and interacting with SEMA / MT.

In each municipality, an equipped situation room and a TNC technician were set up to support the execution of the CAR elaboration process. In the Municipality of São Félix do Xingu, there was a local Forum to support the Municipal Pact of Deforestation Control, with active participation of the TNC. The same structure was not found in other municipalities.

The project was executed within the scheduled period, with regular disbursements and rendering of accounts within the expected time. The TNC showed a lot of efficiency administrating expenses and presenting progress reports. Semiannual reports were prepared in 2011, 2012 and 2013, as well as a final report elaborated by an independent consultant.

Positive Aspects

The experience and quality of the TNC's technical team added value to the Going Green project and contributed to the quality of its execution. TNC's international dimension and its partnerships with the market facilitated the acceptance and participation of medium and large producers in the process of adherence to the CAR, making a usually resistant group more open to the commitments of productive units environmental adequacy.

The methodological roadmap, built in a participatory manner involving producers and environmental agencies, allowed them to work with the geoinformation organized by the project and was very positive for the success and achievement of the project goals.

Challenges

One of the challenges identified is the need for TNC to follow the logical matrix of the project throughout the environmental adequacy cycle, CAR, PRA and PRAD, planning the activities in order to create good examples that can be replicated.

Another one is to invest more in local capacity building, generating more human capital for the continuity of environmental monitoring and control activities, continuing the implementation of post CAR strategies.

6. Conclusions

The Going Green project was a Brazilian experience for the implementation of a methodology that uses geotechnologies for the identification and registration of rural properties in the Amazon. One achievement of the project is that this is done on a scale that is compatible with territorial planning, which facilitates the implementation and monitoring of public policies and environmental control. The project's awareness-raising and mobilization of governmental and nongovernmental actors for environmental regularization in the supported municipalities promoted initiatives for a continued discussion on conservation, recovery and sustainable development, creating a critical technical mass in most of the municipalities supported.

The project created a great asset of information about the territorial dynamics in the municipalities. It pioneered the use at large scale of cartographic bases at a scale of 1:25,000, with identification of properties, land use, remnants of APP and RL and the existing liabilities to be recovered is remarkable. This information is input to new demands for the strengthening and expansion of municipal environmental management, the result of a new local culture aimed at improving the use of natural resources.

The municipalities supported by the project began, for the first time, to meet the demands of the small rural producers offering services for the environmental adequacy of the rural productive units. Until then, they had limited themselves to licensing small works and urban enterprises.

With the project, it was possible for 3,801 rural producers of Mato Grosso and Pará, through the Environmental Regularization Projects (PRA), to begin preparing PRADAS proposals for the recovery of 4,570,974 hectares of environmental liabilities. The information gathered showed that the size of the occupation of the legal reserve areas is immensely greater than in the areas of permanent preservation.

The implementation of alternative forms of production in the municipalities supported by the project was noticeably well accepted, as an option for illegal deforestation, confirmed by public managers, producers and companies.

Market demands are as important for the execution of the CAR as the command and control instruments, with the difference that they cost less and last longer. However, only joining the CAR is not sufficient to ensure that the rural producer ceases to unlawfully deforest his property. The CAR is not yet used for imposing fines and other penalties, according to the Forest Code.

In all this context, it is expected that the Amazon Fund will continue to contribute, to ensure the sustainability of initiatives such as the TNC. With the project's contribution, discussions about full CAR implementation (registration, analysis, validation and control) and other instruments foreseen in the PRA, including the recovery of degraded areas in the Amazon, are expected to continue. The objective is to contribute to the recovery goals of areas with environmental liabilities, in compliance with the commitments made in the Paris Agreement and the Sustainable Development Objectives (ODS).

7. Recommendations

i. To project executors

- Maintain the strategy to support rural producers' environmental suitability, promoting adhesion to PRA and PRADs.

- From materials developed within the project, such as the Forestry Restoration Primer, the Native Vegetation Restoration Manual and the Key Forest Restoration Species Identification Guide - all of these referring to the Alto Teles Pires / MT region - support the recovery of degraded permanent preservation areas (APPDs) in the municipalities of Mato Grosso, adapting them to Pará.

- Based on the Forest Restoration Strategic Plan for the Alto Teles Pires and Alto Juruena / MT regions, foster forest restoration strategic planning, specifically in the Mato Grosso municipalities which were supported by the project, conducting PRADs, with the monitoring and evaluation of environmental gains from the recovery of liabilities in the supported municipalities. The Municipal Environmental Portal – PAM - was an important initiative for municipalities to have computerized and geographic data for the management of rural properties and environmental management in general.

- However, it has been noted that most municipalities are not using the PAM, which indicates low appropriation of this instrument. At the same time, in Pará, the state government launched a similar portal, through the Green Municipalities Program (PMV).

- Thus, the use of the MAP for municipalities' territorial management use should be considered, vis-a-vis the PMV Portal in the case of Pará, with upgrades and improvements, and allowing integration with the OEMAs and SiCAR bases in a process of empowerment of the municipalities in relation to the tool.

- Semiannual and final reports should maintain the structure proposed in the logical matrix, with focus on the elaborated products and services provided.

- Include a gender strategy during the implementation of their projects, promoting specific actions to include women and young people in the project actions, such as mobilizations and training, allowing room for leadership in certain initiatives.

ii. To the City Halls supported by the project

- Increasingly encourage the participation of local communities in disseminating alternative practices for the sustainable use of natural resources, adding specific actions for women in these practices and in deforestation control and monitoring.

- Direct production to specific markets with certain requirements, to have an effect on the environmental suitability of rural properties that is faster and longer lasting than legal standards.

iii. To donors and managers of FA/BNDES

- Scale the projects' execution time to the challenge of the proposed activities. The Going Green project did not have enough time for the full implementation of environmental regularization's necessary instruments.

- The AF projects must have a demonstrative and distinctive effect on public policies, which participates in the whole cycle of the adequacy process, which can generate larger demonstrative effects.

- Adapt to the execution of the projects developed with other policies in execution, so that the financed project is a support for other important policies. For example, MAPA supports the Low Carbon Agriculture Program (ABC), the Going Green project can prepare rural properties with the environmental suitability to access the resources of the ABC Program.

- Support the continuity of the execution of all the instruments aiming at PRA implementation, with emphasis on CAR analysis and validation, implementation of PRADs for recovery of RL and APP

- Include the perspective of gender equity in the approved projects, facilitating the participation of women in the implementation of projects, in order

to ensure the inclusion of the most vulnerable population in the elaboration and execution of the projects.

iv. To the Ministry of Environment

- Seek the best experiences from the project's execution and turn them into public policies linked to the PPCDAm. In this case, it is suggested to strengthen the decentralization of municipal environmental management, increasing the participation of municipal governments in the processes of monitoring and controlling deforestation.

- Use the project as best practices and support improvements in the cartographic bases, as well as providing information on the dynamics of deforestation to the municipalities of the Amazon.

- Support, through actions under the PPCDAm, policies to certify the properties that fully comply to environmental standard enter distinctive markets with higher remuneration for certified products.

- Encourage the establishment of mechanisms to track the production of rural properties, to ensure the authenticity and transparency of the product production chain.

- Maintain the mobilization and awareness-raising process for the adhesion to the PRA in a post-CAR strategy, with municipalities involved in the process of providing georeferencing services for family farmers (holders of areas of up to 4 fiscal modules).

- Define and apply a methodological roadmap for CAR, with the following flow: a) formalization of local partnerships; B) development of a local initial agreement to end illegal deforestation, with the objectives of owners joining the CAR; C) local mobilization with government partners, private sector and civil society, to carry out the PRA; D) updating and / or correcting the municipal cartographic bases at an appropriate scale - 1: 25,000 or better; E) development of updated land use maps on the same scale as the cartographic bases. F) Carrying out individual property mappings, using the cartographic bases and land use maps; G) scanning rural property boundaries at municipal level, eliminating property overlapping errors and adjusting them to the cartographic bases and land use maps; and, h) Carrying out semi-automated environmental diagnostics for all properties, reaching up to 5,000 analyses of properties per work day.

- It is essential that command and control bodies act in a direct way to combat deforestation and thus enable the removal of the priority municipalities from the list.

v. To the Amazon Fund Steering Committee (COFA)

- Define within its guidelines how to encourage the development of projects aimed at preventing and combating deforestation in areas where forest remnants are significant and there is greater pressure and threat for deforestation. The Going Green project occurred in areas where chains of agricultural production, notably soybeans and cattle ranching, had been already consolidated.

8. Lessons Learned

The lessons learned were:

- The decentralization of the registration process from the establishment of the declaratory CAR was strategic to broaden the scope and access of rural producers to environmental compliance.

- Associated with TNC's long experience with environmental regularization, the methodology applied in the project, especially the elaboration of cartographic bases, was effective for the success of the project in relation to the number of enrollments in the cadastre.

- The project reinforced the perception that initiatives carried out in a favorable political environment have greater chances of success and effectiveness. An example was the proposal for the Term of Conduct Adjustment of Livestock, headed by the Federal Prosecutor's Office (MPF), in 2009 in Pará and 2010 in Mato Grosso. These documents predicted that the signatory industries would only buy cattle from properties with CAR.

- The support from the project had the ability to influence municipal environmental agencies, in spite of a visible lack of resources, to constitute technical teams and not to limit themselves to licensing urban activities, taking on responsibility for the monitoring and control of human activities in rural areas.

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10. Annexes

10.1. Images registered during the field missions

1 - *State Secretary for the Environment of Mato Grosso (SEMA), Cuiabá (MT)*

2 - *Rural Producers' Union of Tucumã e Ourilândia do Norte, from left to right: Union President and wife, GIZ Technician, Technician and President e Vice-President Rural Producers' Union of Tucumã*

3 – *Rural Workers' Union (STTR) of Nova Mutum (MT)*

4 - *João Paulo, President of STTR of Nova Mutum*

5 - *Municipal Secretariat of Agriculture and Environment (SAMA), Nova Mutum*

6 – *Rural Union (SR) of Nova Ubiratã (MT)*

7 - *Dalmir Warth, Former technician of the Secretariat of Agriculture and Environment of Nova Ubiratã and family farmer.*

8 – *Elton e Sérgio, Secretariat of Economic Development and Environment Coordination of Sapezal, Technicians*

9 - *Municipal Secretary of Environment Tucumã.*

10 – *Rural Union of Sapezal*

11 - *José Guarino, SR/Sapezal, President*

12 – *Green Municipality Certificate, Tucumã (PA)*

13 - *Municipal Secretariat of Environment and Sanitation, São Félix do Xingu (PA)*

14 - *Meeting in the Municipal Secretariat of Environment with the Technician, Secretary of Environment and Producers (from left to right), São Félix do Xingu.*

10.2. Assessment of the project's contribution to cross-cutting criteria and REDD+ issues

CROSS-CUTTING CRITERIA	
Criteria	**Guiding Questions**
Poverty reduction	**Has the project helped to reduce poverty?** The project did not directly contribute to the reduction of rural poverty. However, from the moment the process of regularization begins with the adhesion to the CAR by the rural producers, it maintains the flow of income through the acquisition of cattle by the meatpackers and credit through access to PRONAF by family agriculture, reducing the risks of increasing poverty.
Gender equity	**Has the project directly integrated gender issues into their interventions?** The project did not directly integrate gender issues into its interventions. Even so, many women were involved in the process of adhesion to the CAR, acting to support the resolution of bureaucratic demands. The local coordination of the project involved the participation of women in several phases, facilitating the communication and the insertion of the rural producers in the events of awareness-raising and motivation for the CAR. Some leaders involved in the project were women, demonstrating that the project, if it did not motivate integration, it also did not inhibit the participation of women and young people as beneficiaries of the project. It is recommended that the Amazon Fund require a specific item to ensure gender balance in the approved projects..
REDD+ SAFEGUARDS	
1. Activities complementing or consistent with the objectives of national forest programs and other relevant international conventions and agreements	**Is the project aligned with PPCDAM and the state plans for deforestation prevention and control?** The PPCDAm was created in 2004 and aims to continuously and consistently reduce deforestation and create the conditions to establish a model of sustainable development in the Legal Amazon. The Plan is structured in three thematic axes: (i) Land and Territorial Planning; (ii) Environmental Monitoring and Control; and, (iii) promotion of Sustainable Productive Activities. The actions contained and implemented in the Going Green project are coherent and aligned with the PPCDAm (2004) and the Plan for Prevention, Control and Alternatives to Deforestation from the State of Pará (2009), providing opportunities for land planning, decentralization of environmental monitoring and control actions for municipalities and the promotion of sustainable productive activities with the alternative use of soil. The PPCDAm and the Plan for the Prevention and Control of Deforestation and Burnings of Mato Grosso predict, in the command and control axis, the realization of CAR to, among others, identify areas of legal reserve and permanent preservation; and, in the axis of sustainable production, the valorization of the standing forest, through sustainable activities of economic value that make a forest economy feasible. The Going Green project did not directly carry out reforestation and recovery activities in degraded areas. The great contribution of the project, however, was the mapping of properties, promoting land use and APP areas georeferencing. The project facilitated that properties that made the CAR promoted the recovery of environmental liabilities. **To what other federal public policies or international agreements is the project alligned to? In what aspects?** The project is aligned with the National Climate Change Program and the recently signed Paris Agreement, since land use planning and the environmental framework of rural properties enable forest recovery, carbon sequestration and mitigation of greenhouse gases. With the partnership it has signed with INCRA, Itermat and Iterpa, the project has also been aligned with national land tenure regularization policies. **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 can contribute indirectly to the reduction of emissions by contributing to the reduction of deforestation. The project mapped, on average, 80% of the area of the beneficiary municipalities and mapped the areas of legal reserve and APP. The realization of CAR, which was one of the expected results of the project, allows the monitoring and environmental control of rural properties. It also enables planning for the recovery of occupied areas of APP and RL in rural properties.

2. Transparent and effective national forest governance structures, with a view to national sovereignty and national legislation	**To what extent has the project promoted the articulation between various actors (public sector, private sector, third sector or local communities)?** The project articulated public and private sectors well, mainly with the rural producers' union. Through the producers, there was also articulation with the companies that buy agricultural inputs. There was also great support and involvement with the administrations of the 12 municipalities benefited by the project and with the state governments, especially from Pará. Technical Cooperation Terms were signed with the state environmental agencies of Mato Grosso and Pará, with municipalities and representative entities of the rural producers of the 12 municipalities targeted by the project. However, there were no established instances of shared governance. **To what extent has the project contributed to strengthening public instruments and forest and land use management processes?** One of the specific objectives of the project was to strengthen local public management in the beneficiary municipalities. The municipal secretariats for the environment were equipped, trained and strengthened to carry out the CAR. The training was focused on geotechnology and adjecent municipalities were also invited to take part, strengthening the project's indirect results. However, over time, the equipment became obsolete and needed upgrades. New technicians were hired and need training to continue to use the built bases.
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	**To what extent has the project influenced the sustainable use of natural resources in its area of operation?** The georeferencing of productive units with the identification of APP and RL areas was a valuable tool for land use planning at the rural property level. A significant number of producers signed the PRA and pledged to recover APP and RL, directly influencing the sustainable use of natural resources. **If the project had as direct beneficiaries indigenous peoples, traditional communities or family farmers: were their socio-cultural systems and traditional knowledge considered and respected throughout the project?** The project worked directly with the family farmers in the elaboration of the CAR, either making the perimeter of the settlements or the productive units individually. Their sociocultural systems and knowledge were respected and encouraged by the project. No interaction with indigenous groups and traditional communities was noticed in the evaluation. **What kind of effects: in the social, economic organization or the use of available spaces and resources? In what way do they interfere: positively, negatively, or both?** The Going Green project strengthened local social organizations, involving rural unions and producer associations in the process of disseminating and raising awareness for the CAR adhesion. Economically, the project made it possible for rural producers to have access to the markets and bank credits that required the CAR, to carry on with the marketing and promotion process. Likewise, the project, revealing millions of areas hectares with recuperation demands, positively showed to society the environmental deficit built with the irregular occupation of APP and RL, highlighting the potential for the recovery of these areas.

4. Full and effective participation of stakeholders, in particular indigenous p e o p les a n d local communities, in the activities referred to in paragraphs 70 and 72 of Decision 1 / CP 16

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

One of the specific objectives of the project was to facilitate rural producers' access of to the environmental regularization of their properties. All rural producers had their production units geo-referenced and identified, greatly facilitating the land regularization process and land access rights. Agreements were signed with INCRA, Intermat and Iterpa to support the validation of rural holdings. Of course, this process facilitated the land analysis for regularization, but it does not replace the need for all that complex analysis of the ownership chain and the pertinent legislation for land regularization process.

How did the project guarantee prior consent and the local / traditional way of choosing the representatives of its beneficiaries (especially indigenous peoples and traditional communities)?

The project aimed to facilitate the realization of CAR in all beneficiary municipalities, so there was no choice of direct beneficiaries among the producers. Technical cooperation agreements were signed with the farmers' union and access was large-scale, without individual negotiation for joining the CAR. The project did not work in indigenous areas nor in traditional communities.

What participatory planning and management tools did the project apply during planning and decision making?

Local level project management was shared with municipalities and the producers' union. The planned events and activities were discussed in a participatory manner with local leaders. Methods such as workshops, meetings with leaderships, debates and wide dissemination of project actions were used.

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?

The project did not have economic goals.

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

All the production of cartographic bases, georeferencing and established monitoring systems, such as the Municipal Environmental Portal, are available to any interested party. Folders, posters, banners, films and stickers were also made available to promote the project. In addition, the projects' reports and newsletters and the Amazon Fund at the BNDES.

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?

Results and impacts were monitored and disseminated through performance reports and project's newsletters. However, the results of the environmental liabilities and biodiversity areas recovery are not being monitored, requiring more incisive support to municipal governments so that they can assess the impacts of the environmental adequacy of rural properties.

5.Activities consistent with the conservation of natural forests and biological diversity, ensuring that the activities referred to in paragraph 70 Decision 1 / CP 16 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	**How has the project contributed to the expansion or consolidation of protected areas?** The project mapped and georeferenced the areas for use and the environmental liabilities of rural properties, preparing them for the recovery of APP and RL areas. If this process occurs at the desired speed, the pressure on the protected areas decreases and ecological corridors can be formed between them, via recovered APP and RL. **How has it contributed to the recovery of deforested or degraded areas?** The project mapped and georeferenced the deforested and degraded areas of APP and RL and prepared the properties for the adhesion to CAR and PRA, with possibilities of recovery of these areas. In total, there are 67,117 ha of APP and 4,820,293 ha of RL to be recovered in the municipalities supported by the project. For each one of the municipalities of the State of Pará, diagnoses of deforestation were also generated at two levels: annual diagnoses (with PRODES data, generated by INPE) and alerts of greater frequency, every 1 to 3 months, according to the availability of The System data (Developed by INPE) and the Deforestation Alert System (developed by the Institute of Man and the Environment). In the State of Pará, 18 projects for the Recovery of Degraded or Changed Areas (PRAD) were already developed, based on the guidelines of the new Forest Code, totaling around 47,300 hectares, being the first projects of this nature carried out in Pará in Line with the Law 12.651 / 2012 (new Forest Code). **In case of restoration activities and reforestation of areas, did the methodologies used prioritize native species?** Within the scope of the project, a Forest Restoration Manual was prepared for the areas of Pará and Mato Grosso, with priorities for native species. However, the restoration was not the main focus of the project, having until the moment a low execution. **To what extent has the project helped to establish recovery models with an emphasis on economic use?** The project published the Forest Restoration Manual. An instrument to support the environmental adequacy of rural properties in Pará, in 2013.
6.Activities to address the risks of reversals in REDD+ results	**What factors entails risks to the stability of REDD + results? How did the project address them?** Risk factors are associated with the deforestation of areas registered in the CAR and are proportional to the monitoring and inspection efforts of the registered production units. In addition to these command and control tools, policies with alternatives to increase the productivity of the areas of use such as the ABC Program, ILPS, Sustainable Livestock and others can mitigate threats to the gains in terms of avoided deforestation with project actions.
7. Activities to reduce the shift of carbon emissions to other areas.	**Have project actions avoided a shift of emissions to other areas?** Due to several factors, there was a decrease in deforestation in the Amazon during the period covered by the project. However, this decline has not been sustained and has grown again in the last two years. Migratory flows and major energy works have been more important for the displacement of emissions, especially the advance of deforestation, led by livestock and soybeans, where most of the municipalities worked on by the project are concentrated.

10.3. CAR results in municipalities

10.3.1. Areas to be registered, registered areas and areas to recover

Municipality	Area to be registered	Area with CAR (ha)	% registered	Number of CAR	APP to recover	RL to recover	Standing forest
Pará							
São Félix do Xingu	3,331,517	3,858,337	115	7,425	18,065	1,525,425	6,142,940
Tucumã	249,109	936,146	375	1,531	157	424,664	21,850
Ourilândia do Norte	207,901	401,174	192	932	1,138	185,641	946,290
Cumaru do Norte	1,706,454	1,220,693	72	892	17,495	495,156	840,590
Bannach	280,124	267,978	95	483	2,412	139,430	72,530
Total	**5,775,105**	**6,684,328**		**11,263**	**39,267**	**2,770,316**	**8,024,200**
Mato Grosso							
Nova Ubiratã	1,113,960	1,207,902	108	1,505	6,306	543,741	551,220
Tapurah	445,175	567,483	127	669	3,033	257,013	175,350
Nova Mutum	952,428	926,847	97	1,202	2,682	373,399	327,430
Cotriguaçu	607,681	659,859	108	706	8,345	250,062	716,020
Juruena	318,844	248,302	78	482	3,606	93,645	149,770
Sapezal	876,395	875,215	100	428	1,235	330,245	285,230
Campos de Júlio	658,242	664,598	100	538	2,643	201,872	47,610
Total	**4,972,725**	**5,150,316**		**5,530**	**27,850**	**2,049,977**	**2,252,630**

Source: *SiCAR.*

10.3.2. Quantity and extent of real estate areas registered in the municipalities supported by the project

Municipalities / Area in hectares		0 a 100	100 a 500	500 a 1.000	+ que 1.000
Pará					
São Félix do Xingu	Registered area (ha)	218,820	496,756	412,423	2,974,708
	Number of properties	3,757	2,259	559	830
Tucumã	Registered area (ha)	53,248	98,078	19,760	805,064
	Number of properties	1,004	490	28	9
Ourilândia do Norte	Registered area (ha)	30,627	56,518	19,704	294,324
	Number of properties	3,757	2,259	559	830
Cumaru do Norte	Registered area (ha)	26,556	46,576	17,926	1,129,634
	Number of properties	468	235	25	160
Bannach	Registered area (ha)	12,791	38,517	27,174	189,494
	Number of properties	214	165	37	67
Total	**Registered area (ha)**	**342,042**	**736,445**	**496,987**	**5,393,224**
	Número de imóveis	**9,200**	**5,408**	**1,208**	**1,896**
Mato Grosso					
Nova Ubiratã	Registered area (ha)	44,195	111,743	131,646	904,591
	Number of properties	651	391	178	271

Tapurah	Registered area (ha)	13,044	70,655	65,831	401,495
	Number of properties	183	280	92	97
Nova Mutum	Registered area (ha)	19,953	119,176	86,407	689,560
	Number of properties	411	471	123	182
Cotriguaçu	Registered area (ha)	18,068	57,107	21,975	562,708
	Number of properties	342	251	30	83
Juruena	Registered area (ha)	11,627	39,025	13,868	183,781
	Number of properties	234	177	18	53
Sapezal	Registered area (ha)	1,896	19,280	57,850	796,186
	Number of properties	41	60	81	246
Campos de Júlio	Registered area (ha)	2,826	55,538	51,481	554,751
	Number of properties	80	168	70	220
Total	**Registered area (ha)**	**111,609**	**472,524**	**429,058**	**4,093,072**
	Number of properties	**1942**	**1798**	**592**	**1152**

Fonte: *SiCAR.*

10.3.3. Areas to be recovered and areas with PRA in the municipalities supported by the project

Municipality	Total area to recover (APP+RL) in ha	Area with PRA in ha	Area with PRA – total area to recover in ha
Pará			
São Félix do Xingu	1,543,490	958,175	-585,315
Tucumã	424,821	6,614	-418,207
Ourilândia do Norte	186,779	134,133	-52,646
Cumaru do Norte	512,651	208,509	-304,142
Bannach	141,842	77,690	-64,152
Total	**2,809,563**	**1,385,121**	**-1,424,462**
Mato Grosso			
Nova Ubiratã	550,047	689,157	139,110
Tapurah	260,046	397,936	137,890
Nova Mutum	376,081	580,667	204,586
Cotriguaçu	258,407	375,683	117,276
Juruena	97,251	192,512	95,261
Sapezal	331,480	544,617	213,137
Campos de Júlio	204,515	405,281	200,766
Total	**2,077,827**	**3,185,853**	**1,108,028**

Fonte: *SiCAR.*

10.3.4. Number of producers with areas to recover in the municipalities supported by the project

Municipality	N. of producers with PRA	N. de producers with RL to recover	RL balance	N. of producers with APP to recover	APP Balance
Pará					
São Félix do Xingu	606	6,864	-6,258	1,511	-905
Tucumã	43	1,536	-1,493	154	-111
Ourilândia do Norte	185	922	-737	226	-41
Cumaru do Norte	53	882	-829	214	-161
Bannach	42	478	-436	175	-133
Total	**829**	**10,682**	**-9,753**	**2,280**	**-1,351**
Mato Grosso					
Nova Ubiratã	556	1,396	-840	364	192
Tapurah	372	636	-264	303	69
Nova Mutum	575	1,125	-550	286	289
Cotriguaçu	406	669	-263	346	60
Juruena	352	477	-125	317	35
Sapezal	258	406	-148	141	117
Campos de Júlio	273	504	-231	202	71
Total	**2,972**	**5,213**	**-2,421**	**1,959**	**833**

Obs. *The possibility of the same producer having the need to recover RL and APP was disregarded.*

10.4. Municipalities supported by the Going Green project: deforestation increase in km² (source: PRODES/INPE)

Municipality	State	Priority Municipality?	Deforestation increase in km²										
			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Campos de Júlio	MT	No	1.1	0.4	0.2	0.8	0.0	0.2	0.1	0.0	0.5	0.0	0.1
Cotriguaçu	MT	Yes (2008)	291.6	61.4	127.5	77.6	36.2	27.4	21.9	44.5	42.6	45.0	58.3
Juruena	MT	No	122.4	20.6	53.0	40.7	16.0	15.1	6.4	10.3	12.3	7.0	7.1
Nova Mutum	MT	No	76.0	34.3	8.3	10.3	4.4	12.4	9.3	11.5	6.3	5.6	13.9
Nova Ubiratã	MT	Yes (2008)	254.3	72.7	19.8	141.1	30.5	22.8	94.3	19.8	9.7	15.6	28.1
Sapezal	MT	No	18.2	0.4	0.6	6.5	0.2	0.1	0.3	0.4	1.4	0.2	0.3
Tapurah	MT	Yes (2011)	82.3	11.7	7.3	10.5	7.4	13.6	20.9	4.4	16.1	33.4	18.7
Bannach	PA	No	109.2	33.8	52.1	48.5	15.6	5.7	5.7	6.8	4.6	2.7	22.4
Cumaru do Norte	PA	Yes (2008)	580.4	175.2	292.0	186.2	37.4	43.6	58.9	58.9	37.7	25.2	40.5
Ourilândia do Norte	PA	No	46.9	8.9	24.1	20.4	7.6	3.3	5.8	4.8	4.6	4.9	5.2
São Félix do Xingu	PA	Yes (2008)	1407.8	761.9	877.5	765.1	444.4	353.7	140.4	169.1	220.4	151.9	199.2
Tucumã	PA	No	19.9	9.7	13.8	9.9	2.6	2.5	1.7	1.1	1.7	2.6	4.2

10.5. List of people interviewed

Name	Institution or organization	Position
Alex Schmidt	TNC	Technician
Gina Timótheo	TNC	TNC environment manager in MT state
Osmar Isoton	SAMA Nova Mutum	Former Secretary
Odair Rivelino	SAMA Nova Mutum	Former SAMA Technician
Luis Carlos Gonçalves	SR Nova Mutum	President
Osmar Rosseto (Chiquinho)	Nova Ubiratã City Hall	Former Mayor
Dalmir Warth	SAMA Nova Ubiratã	Former SAMA Technician
Tatiane Carvalho	SAMA Nova Uibratã	Engenheira florestal técnica da SAMA
Fernando	Secretariat of economic development of Sapezal - Coordination of environment	Technician
Elton	Secretariat of economic development of Sapezal - Coordination of environment	Technician
Sérgio	Secretariat of economic development of Sapezal - Coordination of environment	Hired Technician
Evanildo Ferreira Pereira	Service provider	Technician for enrollment in the CAR
João Paulo	Nova Mutum Rural Workers' Union	President
Fábio Bratz	SR de Nova Ubiratã	Ex-president (2009-2011)
José Guarino	SR de Sapezal	President
Francisco Fonseca	TNC	Project Coordinator
Elaine Corsini	SEMA-MT	Ex-Technician from SEMA-MT
Raquel Pereira da Silva	Cotriguaçu City Hall	City Hall Technician
Helena de Jesus Moreira	Cotriguaçu	Family Producer, member of the Municipal Council of Environment.
Jair Klasner	Cotriguaçu	Elected Mayor
Ilse Claudino	Juruena	City Hall Technician
Adriano Poloto	Juruena	City Hall Technician
José Romildo Vieira Fonseca	Juruena	City Hall Technician
Mozara Cristina Loch	Campos de Júlio	City Hall Technician
Vicente de Paula Souza	SEMAS-PA	GEO director
Denimar Rodrigues	SEMMA	Secretary of Environment of São Felix do Xingu
Wanderley Silva Coelho	SEMAGRI	Secretary of Agriculture of São Felix do Xingu
Abdiel Pereira Queiroz	Actions	Member of the Farmers' Association Directors' Board
Francisco Torres	Rural Union	President of Rural Union of São Felix do Xingu
Noecí da Costa Gama	Small Producer	Settler in São Felix do Xingu
Francisco Laércio Alves de Souza	Rural Union	Vice-president of Rural Union in São Félix do Xingu
Marcela Pereira	STTR	President of STTR of Tucumã
Luís Dias Neto	STTR	Vice-presidente do STTR de Tucumã
Divino Rodrigues	Rural Union	President of SR of Tucumã and Ourilândia do Norte
Arinos Vieira de Souza	SMMA	Technician of the Secretariat of the Environment of Cumaru do Norte
Paulo Lourenço da Silva	SMMA	Secretary of the Environment of Cumaru do Norte
Tatiana Leite Batista Cosselin	SMMA	Secretary of Environment of Xinguara.

Adolfo	Rural Union	Technician of the Rural Union of Xinguara
Samuel	SMMA	SMMA Technician from Ourilândia do Norte
Samara	SMMA	SMMA Technician from Ourilândia do Norte
Domingos Souza Lima	SMMA	Former Secretary of the Environment of Bannach.
Elaine Corsini	SEMA-MT	Former Technician from SEMA-MT
Minervina Maria Barros Silva	City Hall	Elected mayor of São Felix do Xingu - PA
José Carlos	SMMA	Secretary of the Environment of Tucumã
Raquel Pereira da Silva	SMMA	Technician of the Secretariat of the Environment of Cotriguaçu - MT
Helena de Jesus Moreira	Municipal Council	Rural producer and member of Municipal Council of the Environment
Jair Klasner	City Hall	Elected mayor of Cotriguaçu
Ilse Claudino	SMMA	SMMA Technician of Juruena
José Romildo Vieira Fonseca	SMMA	SMMA Technician of Juruena
Edenise Garcia	TNC Brasilia	Deputy Science Manager
Leandro Baumgarten	TNC Brasilia	Science Manager

10.6. Term of Reference (ToR) of the effectiveness evaluation of the Going Green project (The Nature Conservancy of Brazil)

Term of Reference - ToR

1. Introduction and general information

1.1 Project Description

Title of project: **Going Green**

Responsible Body: **The Nature Conservancy Brazil (TNC Brazil)**

Project period: **2nd quarter of 2010 to 1st quarter of 2014**

The Going Green project, implemented by the Brazilian Nature Conservancy (TNC Brasil) was implemented in the municipalities of Campos de Júlio, Cotriguaçu, Juruena, Nova Mutum, Nova Ubiratã, Sapezal and Tapurah in Mato Grosso; And Bannach, Northern Cumaru, Ourilândia do Norte, São Felix do Xingu and Tucumã, in Pará. Its objectives were to structure and modernize environmental monitoring, control and accountability institutions and to facilitate the access of rural producers to the environmental regularization of their properties in these seven Municipalities of Mato Grosso and in the five municipalities of Pará.

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1.2 Context of the project

The municipalities covered by the project are located in the states with the highest rates of deforestation according to data from the National Institute for Space Research (INPE): Mato Grosso and Pará. The region's economy is characterized by subsistence agriculture and soybean, plant extraction, logging and mining in some municipalities. Through the project, the Amazon Fund supported the mobilization and integration of state and municipal governments, associations, unions and rural producers to stimulate environmental adaptation through the promotion of the Rural Environmental Registry (CAR), environmental recovery processes and monitoring of deforestation.

In this sense, the project contributed to create an environment that enabled the implementation of the CAR, which led to the georeferencing of 9,985,162 hectares of rural properties, as well as the elaboration of digital cartographic bases in the scale 1: 25,000 with mapping of the 12 Municipalities of the project. In the case of Pará, a restoration guide was published, and in Mato Grosso, a manual for restoration of permanent preservation areas. In Pará, 18 Projects for the Recovery of Degraded or Altered Areas (PRADA) were also prepared, totaling around 47,300 hectares. Annual warnings and diagnoses of deforestation were developed to support municipalities in following and monitoring information on deforestation outbreaks in their territories. It is worth noting that there was a reduction of 244.2 km^2 (or 41%) in the annual deforestation rate in the project area.

2. Purpose and objectives of the evaluation

The main purpose of the project evaluation is to measure the results achieved, their effects 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 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 website.[4].

The main objectives of the evaluation are:

- ► To assist the Amazon Fund in rendering accounts to its donors about the type of project supported and its effects;
- ► To 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;

[4] http://www.fundoamazonia.gov.br/FundoAmazonia/fam/site_pt/Esquerdo/Projetos_Apoiados/Lista_Projetos/TNC

► To verify compliance with the projects supported by the Amazon Fund of Cancun safeguards agreed under the UNFCCC for REDD+ actions;

► To check the alignment of the projects with the PPCDAm and the state plans of prevention and control of deforestation;

► To analyze the strengths and weaknesses of project intervention;

► To Identify challenges and lessons learned; and

► To find out to what extent the project is relevant, efficient, effective, sustainable and generates impacts.

3. Task Description

3.1 Object and evaluation focus

The project was implemented between 2010 and 2014 in 12 municipalities in the states of Mato Grosso and Pará. Thus, the focus of the evaluation is the areas in which the project had intervention, the object being the following results worked on:

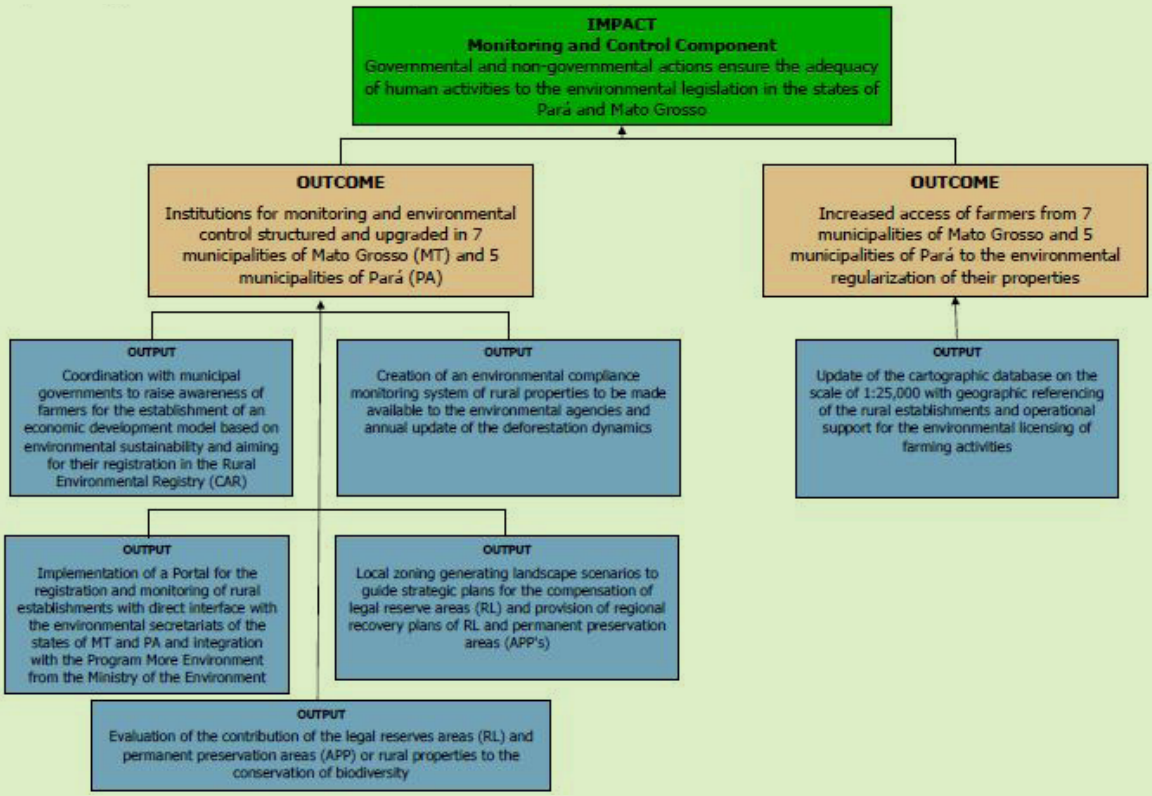
► Support for the implementation of the CAR and a model of economic development based on the environmental suitability and socio-environmental sustainability of the agricultural sector;

► Construction of technical instruments to allow a greater adhesion of rural producers to the Rural Environmental Registry;

► Elaboration of maps and analyzes to assist processes of environmental regularization of rural properties, forest recovery, environmental control of municipalities; and

► Development of a system to monitor the environmental adequacy of rural properties.

3.2 The project's logic of intervention



Objectives *Tree from the Logic Framework of the Going Green project:*

3.3 Key questions and evaluation criteria

The effectiveness evaluation of the Going Green project will obey the guidelines and criteria specified in the document "Evaluation of Effectiveness of Projects Supported by the Amazon Fund - Conceptual Framework". These criteria are based on the OECD, the REDD+ safeguards defined by the Framework Convention (in Annex I to Decision 1 / CP1641 and the guidelines of Decision 12 / CP17) and on 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 evaluation design report (1st output to be presented by the evaluation team), if needed by the evaluation team. Below is the summary table of criteria and respective guiding questions:

3.3.1 OCDE Criteria, Cross-cutting themes and Evaluation Questions

Criteria	Guiding Questions
Relevance	To what extent are project objectives still valid at the time of its conclusion? 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	Have the project's (specific) objectives been met or will be met? What are the main factors that influence whether or not direct goals are met?
Efficiency	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 on time? Are there alternative ways to get the same results with less cost / means?
Impact	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 scale in the region or influence other initiatives?
Sustainability	To what extent do project benefits last after the end of Amazon Fund funding? What were the main factors that influenced the outreach or not of the sustainability of the project? What risks should be monitored to ensure the sustainability achieved?
Cross-Cutting Criteria	
Poverty Reduction	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 positively influenced the reduction of poverty, social inclusion and improvement in the living conditions of the beneficiaries living in its area of activity? Has the project succeeded in promoting and increasing production in value chains of timber and non-timber forest products originating from sustainable management?
Gender Equity	Has the project succeeded in integrating gender issues into its strategies and interventions or addressed the issue in an isolated form? How? Was there separation by gender in data collection for project planning and monitoring? How did the project contribute to gender equity?

3.3.2 REDD+ Safeguards and Evaluation Questions

Criteria	Guiding Questions
1. Actions complementing or consistent with the objectives of national forest programs and other relevant international conventions and agreements	Has the project been aligned with the PPCDAM and state plans for the prevention and control of deforestation? Which other federal public policies or international agreements has the project been aligned to? In what aspects? Has the project contributed or could it contribute directly or indirectly to reducing 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	To what extent has the project promoted the articulation between different 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	To what extent has the project influenced the constitutional rights associated with the possession and formal destination of land in its area of activity? To what extent has the project influenced the sustainable use of natural resources in its area of activity? If the project had indigenous peoples, traditional communities or family farmers as direct beneficiaries: were their socio-cultural systems and traditional knowledge considered and respected throughout the project? Are there effects that interfere in the traditional lifestyle of these groups? What kind of effects? In the social, economic organization, or in the use of available spaces and resources? In what way do they interfere? Positively, negatively, or both?
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	How did the project guarantee prior consent and the local / traditional way of choosing the representatives of its beneficiaries (especially indigenous peoples and traditional communities)? What 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? Has the project set up a good monitoring system for results and impacts? Has the project monitored and systematically publicized 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 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	How did the project contribute to the expansion or consolidation of protected areas? How did it contribute to the recovery 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	What factors constitute risks to the permanence of REDD+ results? How did the project address them?
7. Actions to reduce the shift of carbon emissions to other areas	Have the emissions shifts to other areas been avoided by the project's actions?

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 are generated: the Evaluation Design Report and the Effectiveness Evaluation Report of the Going Green project. And also, in an intermediate stage, a Preliminary Evaluation Report of Effectiveness, product to be used in the round of consultation.

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

I. Preparation Phase: at this stage, the objectives and planning of the evaluation of the Going Green Project should be defined. 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 execution. 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 help-memory of all information related to the project to be evaluated.

II. 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) TdR 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 forms of data collection: i) Non-reactive (secondary sources: project documentation, public and scientific data available in the project area, in addition to the key documents already organized in the preparation phase); ii) Survey (field research: it can be by standardized questionnaires, interviews with individuals or groups and by the use of analysis tools such as SWOT); And iii) Observation (during the visits, participatory or individual; a counterfactual approach can be used, that is, comparing with similar cases outside 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 8 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 from 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.

III. 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 Going Green Project are in the document "Evaluation of Effectiveness of Projects Supported by the Amazon Fund - Conceptual Framework".

►*Dissemination of results.* The Effectiveness Evaluation Report of the Portal Seeds Project and its executive summary will be published on the Amazon Fund page (www.fundoamazonia.gov.br).

5. Activities, products and deadlines

The following schedule presents the basic road map for the evaluation of the Going Green project. The table contains the activities, services and products and deadlines of the effectiveness evaluation process.

	Activities	Person in charge	Working days	Deadlines	Products
1	Disclose TdR, receive and organize proposals from consultants	GIZ (responsible for hiring)	15	27/08/2016	Consultants' proposals received and organized
2	Hire consultants and form assessment team (consultants + GIZ)	GIZ	10	26/09/ 2016	Hired consultants and formed team
3	Prepare an initial meeting of the team with Amazon Fund / Contact the organization responsible for the project evaluated / Analyze relevant documents / Prepare proposal of evaluation report	GIZ	15	11/10/ 2016	Proposal of Evaluation Design
4	Comment on evaluation design report proposal	GERAV/BNDES DEFAM/ BNDES Organization responsible for the project	3	14/10/ 2016	Proposal of Evaluation Design Report with comments
5	Revise evaluation design report	Evaluation team	3	17/10/ 2016	Evaluation Design Report Revised
6	Approve revised report	GERAV/BNDES DEFAM/ BNDES	3	20/10 / 2016	Evaluation Design Report (final)
7	Implement evaluation / Carry out field mission / Systematize results, etc. Prepare and submit preliminary evaluation report	Evaluation team	28	23/12/2016	-
8	Present results (Round of Consultation)	Evaluation team	1	02/02/2017	Preliminary evaluation report with considerations collected during consultation round
9	Comment on preliminar evaluation report	GERAV/BNDES DEFAM/ BNDES Organization responsible for the project	5	07/02/2017	Preliminary evaluation report with comments sent after the consultation round
10	Prepare Final evaluation Report	Evaluation team	5	13/02/2017	Effectiveness Evaluation Report
11	Incorporate supplementary presentation, preface and summary content to the final report	Evaluation team	3	16/02/2017	Effectiveness Evaluation Report in dissemination format
12	Translation of the final evaluation report and its annexes	Translator/ Evaluation team	10	27/02/2017	Effectiveness Evaluation Report in dissemination format (English)
13	Disseminate and distribute the Effectiveness Assessment Report	Amazon Fund Team	-	10/03/2017	*Upload* to the Amazon Fund Website
TOTAL working days			**101**		--

6. Evaluation Team

The Going Green Project will be evaluated by a team composed of four people, two (2) experts from GIZ and two (2) external consultants to be hired by GIZ after a position call published in the Brazilian Network for Monitoring and Evaluation. The GIZ experts will have the following profile: one (1) senior with experience in evaluating projects and public policies in the topics discussed and one (1) junior to support the data collection and elaboration of thematic diagnoses under the guidance of the team. The external consultants should have the following profile: one (1) senior or full consultant, with experience in project evaluation, knowledge of organizational strengthening and forest management, and one (1) full consultant with experience in project evaluation, knowledge in the themes of forest economics and in the recovery of forests in degraded areas with forest liabilities. As for the qualifications of the evaluators, they include the following requirements:

- *Technical knowledge.* The team of evaluators, in a multidisciplinary way, should have knowledge about public policies in the area of sustainable development and environment, on the elaboration, monitoring and evaluation of socio-environmental projects and on the themes addressed by the project, mainly: institutional strengthening, degraded forest areas recovery and training in forest issues.

- *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.

Consultants may not have any previous involvement or private link with the project to be evaluated. The evaluation team will work without external interference, will have access to the data of the projects to be evaluated and will obtain support to gather all the necessary information. GIZ experts and consultants should treat all documentation of the Amazon Fund and the project to be evaluated with confidentiality and secrecy, except for the information that should be included in the Effectiveness Evaluation Report.

7. Rapporteurship

Two reports will be produced during the evaluation process: the Evaluation Design Report and the Evaluation Report on the Effectiveness of the Going Green Project. The content of these reports will comply with what is established in item 8.1.7 of the document “Evaluation of Effectiveness of Projects Supported by the Amazon Fund - Conceptual Framework”.

8. Coordination/Responsibilities

The effectiveness evaluation of the Going Green Project will be accompanied by a Reference Group, with the following composition:

a. Representatives of the Monitoring and Evaluation Management of the BNDES Planning Area;

b. Representatives of the Management Department of the BNDES’ Amazon Fund;

c. Representatives of GIZ, within the framework of the Technical Cooperation Project in force;

d. Representatives of The Nature Conservancy Brazil (TNC Brazil), responsible for the execution of the project to be evaluated; and

e. Evaluation team members.

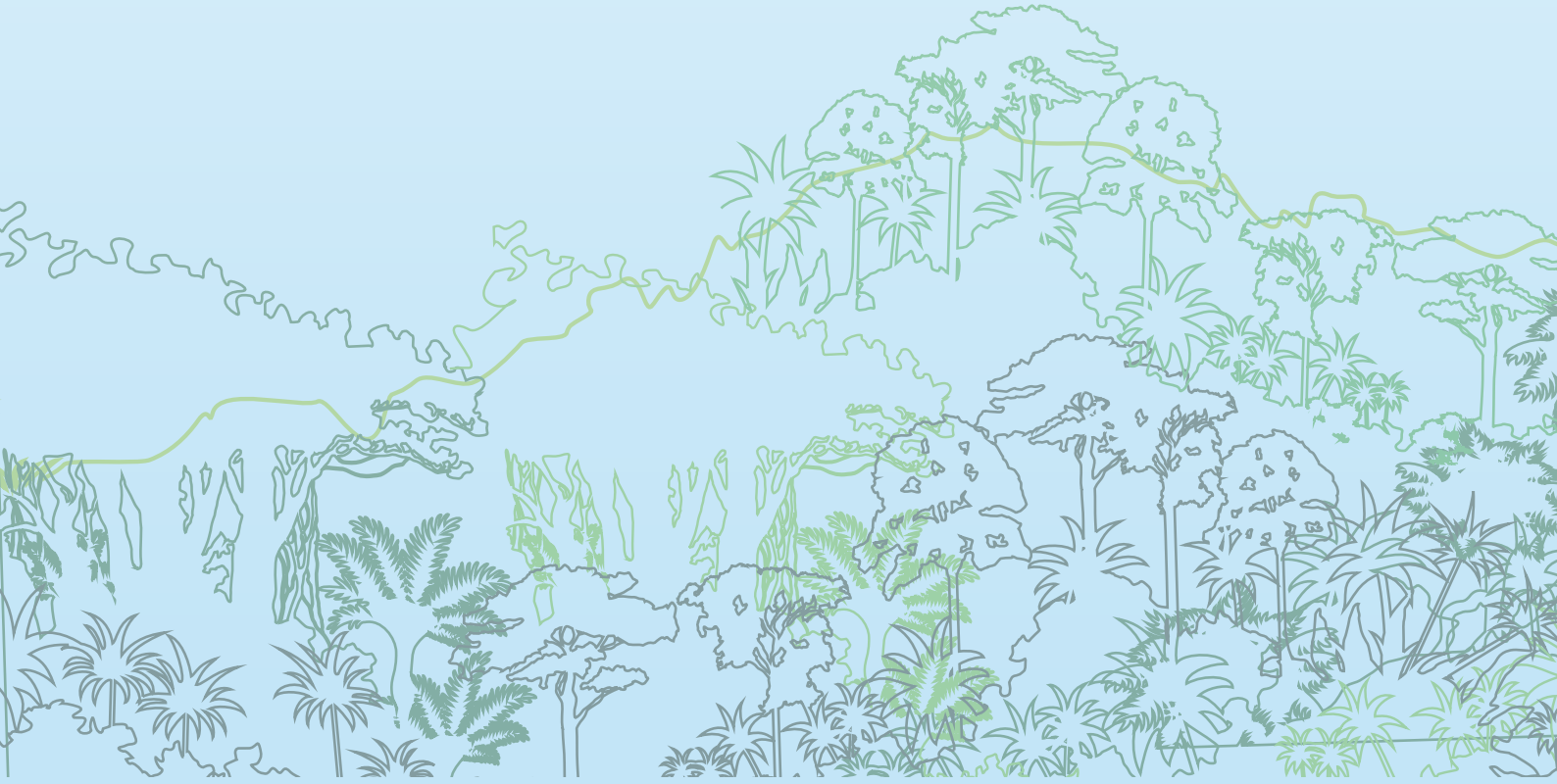
The coordination of the evaluation work will be carried out by GIZ. The responsibilities of each part that make up the Reference Group are defined in item 5.1 of the document “Evaluation of Effectiveness of Projects Supported by the Amazon Fund - Conceptual Framework”.

June/2017

Efectiveness Evaluation

Going Green Project

The Nature Conservancy | TNC Brasil



german cooperation
DEUTSCHE ZUSAMMENARBEIT
Implemented by giz
AMAZON FUND
BNDES The Brazilian development bank
MINISTRY OF PLANNING, DEVELOPMENT AND MANAGEMENT
MINISTRY OF THE ENVIRONMENT
BRASIL BRAZILIAN GOVERNMENT