



**TERRITORIAL AND ENVIRONMENTAL MANAGEMENT PLANS
IN BRAZIL'S INDIGENOUS TERRITORIES**

ESTRATEGIES TO SUPPORT INDIGENOUS PEOPLES' WELL-BEING, CULTURE,
FORESTS AND SUSTAINABLE LANDSCAPES



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Preface

Territorial and Environmental Management Plans (Planos de Gestão Territorial e Ambiental or PGTAs, in Portuguese) are a key instrument for Brazil's indigenous peoples to use, protect and develop their lands in a sustainable and self-determined way.

PGTAs effectively contribute to biodiversity conservation and climate protection, while at the same time serving as an instrument for climate adaptation. More and more, indigenous peoples and their traditional knowledge are seen and recognized as agents of change when it comes to climate protection.

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In the framework of this pilot measure, a systematic study has been conducted in order to understand how PGTAs and Brazilian ancestral knowledge can be effectively appreciated for the sustainable use of the land in indigenous territories. It also showed how PGTAs may be strategically employed as public policy to strengthen indigenous rights and biodiversity conservation, even in challenging political contexts.

This publication aims at supporting indigenous peoples, their organizations, public actors and other stakeholders in the development and implementation of land use plans that contribute in a relevant way so as to mitigate climate change effects and effectively implement indigenous rights.

We are very pleased to present this publication. We would like to thank everyone who made important contributions to the success of this work, and we hope you enjoy reading it!

Juliane Osterhaus

Director of the GIZ Sector Project "Human Rights Implementation in the German Development Cooperation"

Vorwort GIZ

Nachhaltige Landnutzungspläne (Planos de Gestão Territorial e Ambiental - PGTAs) sind für Brasiliens indigene Völker ein zentrales Instrument, um ihr Land nachhaltig und selbstbestimmt nutzen, schützen und entwickeln zu können.

PGTAs leisten damit einen effektiven Beitrag zum Erhalt von Biodiversität und Klimaschutz und dienen als Instrument der Klimaanpassung. Indigene Völker werden zunehmend als Wissensträger und Agents of Change für den Klimaschutz anerkannt und wahrgenommen.

Die vorliegende Publikation wurde vom GIZ Sektorprogramm Menschenrechte (im Auftrag des BMZ) im Rahmen der Pilotmaßnahme "Nachhaltige Landnutzungspläne als Beitrag zum Klimaschutz in indigenen Gebieten im brasilianischen Amazonas" mit brasilianischen Partnern erarbeitet und finanziert.

Die Pilotmaßnahme ermöglichte eine systematische Aufarbeitung, wie PGTAs und traditionelles Wissen in Brasilien effektiv für nachhaltige Landnutzung in indigenen Gebieten in Wert gesetzt werden können. Sie

zeigte auf, wie PGTAs als staatliches Instrument auch unter schwierigen Rahmenbedingungen strategisch zur Stärkung indigener Rechte und Biodiversitätsschutz genutzt werden können.

Die vorliegende Publikation soll indigene Völker, indigene Organisationen, staatliche Akteure und weitere interessierte Akteure bei Ausarbeitung und Umsetzung von Landnutzungsplänen unterstützen, die einen wichtigen Beitrag zum Klimaschutz und der Verwirklichung indigener Rechte leisten.

Wir freuen uns sehr, die vorliegende Publikation vorzustellen. Wir danken allen, die zum Gelingen wichtige Beiträge geleistet haben und wünschen eine interessante Lektüre!

Juliane Osterhaus

Leiterin GIZ Sektorprogramm Menschenrechte umsetzen in der Entwicklungszusammenarbeit

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Executive Summary

Territorial and Environmental Management Plans (in Portuguese: PGTAs) are instruments that have been increasingly adopted in Brazil's indigenous territories as a way for indigenous peoples to produce proposals on how to increase their well-being and survival with regards to their cultural and spiritual values, based on the management of their territories and natural resources.

PGTAs are hybrid instruments that combine traditional knowledge and cultural practices with cartographic technologies and other tools, using highly participatory debates to co-elaborate the instrument collectively. At the same time, they are instruments that allow for an efficient dialogue between indigenous peoples and public institutions in charge of the implementation of public policies at the municipal, state and federal level, resulting in strengthening indigenous peoples' capacities and protagonism when dealing with those external actors. By providing a visual overview of environmental pressures, both around and inside indigenous territories, PGTAs can form the base for the precise and effective planning of monitoring activities, natural resource management and initiatives for environmental restoration.

PGTAs allow indigenous people to effectively communicate with external actors such as national and international initiatives focusing on human rights, biodiversity conservation, maintaining ecosystem services and protecting sustainable rural landscapes. However, PGTAs are not yet able to live up to their full potential, mainly related to the lack of resources for the implementation of territorial and environmental management in its multiple dimensions. Therefore, it is necessary to create mechanisms that help to strengthen territorial management in all its aspects, including those related to indigenous well-being, monitoring and protecting the integrity of the territories, economic and agricultural questions, and forest restoration, among many others.

In parallel, the effective management of indigenous territories also requires building capacities among young people to implement their PGTAs, along with the trainings for community organizations, such as co-operatives and associations, in order to strengthen their governance and have access to financing sources to support this management.



Arawete Village, Pará | Picture: Robert Miller

1. Introduction

Brazil has a great diversity of traditional peoples and communities, whose ways of life, including traditional territorial and resource management, are fundamental for the conservation of biodiversity, the functioning of ecosystems and the provision of ecosystem services. For indigenous peoples, the concepts of territory, environment, natural resources and culture are interconnected and inseparable, with specific and particular ramifications according to the history and socio-environmental reality of each group or people.

The management of their territories – rooted in traditional knowledge built up over the course of millenia – is of a collective nature. It is mediated through traditional and cross-cutting institutions, deeply intertwined with social, cultural, politic and economic dimensions. In the logic of indigenous peoples' worldview, natural cycles and processes regarding biodiversity, carbon and water are intimately tied to social, economic and cultural aspects.

Territorial and Environmental Management Plans (PGTAs, in Portuguese) are instruments that have been increasingly applied in Brazilian indigenous territories over the past two decades. In 2018, the “National Indian Foundation” (FUNAI, in Portuguese), registered the use of PGTAs in 129 indigenous territories.

PGTAs are hybrid instruments that combine traditional knowledge and cultural practices with cartographic technologies and other tools, using highly participatory debates to co-elaborate the instrument collectively. They allow indigenous people to make concrete proposals for improving their quality of life, based on their own understanding of their territory and its natural resources.

Although the elaboration of PGTAs counts with the technical support of a variety of partners, the final result is the product of a participative process that represents, above all, a strong indigenous protagonism.

In addition to the internal organization of questions related to the sustainable use and management of natural resources, PGTAs are instruments that allow for an efficient dialogue between indigenous peoples and public institutions in charge of the implementation of public policies at the municipal, state and federal level, resulting in strengthening indigenous peoples' capacities and protagonism when dealing with those external actors. At the same time, PGTAs may be an instrument that promotes and recognises indigenous culture and aspects of their reality, which are often poorly known by their non-indigenous neighbors.

Since PGTAs offer an overview of the environmental pressures at play in indigenous territories, they can inform better planning of monitoring activities and natural resource management, as well as the acquisition of financial support for the implementation of better management systems in the territories.

The primary objective of the present publication is giving an overview and explanation as to what PGTAs are, as well as their relevance in different contexts, ranging from the local level, where PGTAs discuss indigenous peoples' well-being, with regards both to the natural resources they depend on and the cultural and spiritual value attributed to these resources and the land that provides them, including the defense of their rights and their access to public policies, to the wider political scenario – on the national and international levels – of initiatives and programs addressing biodiversity conservation, sustainable rural landscapes, ecosystem services, and similar topics.

At the same time, this document also aims at pointing out necessities and demands that must be met so that PGTAs can be more effectively implemented and increase their role in helping indigenous peoples to face current and future challenges.



2. Indigenous territories in the global context of human rights, biodiversity conservation and preserving ecosystem services

Changes in natural landscapes caused by industrial agriculture, transportation infrastructure and energy generation, construction and urbanisation, and other factors, have severely impacted the planet's biological, geological and chemical cycles, contributing – along with carbon emissions from fossil fuel combustion – to climate change. Because of this, areas with intact vegetation and preserved ecosystems become more and more important as providers of fundamental ecosystem services, including the maintenance of biological diversity, sequestration and storage of atmospheric carbon and the maintenance of intact water and climate cycles at the local and regional scale.

In this scenario, indigenous peoples and communities are increasingly acknowledged as effective guardians of significant

extensions of natural landscapes and ecosystems, including the fundamental role that their cultural and social organisation plays in the sustainable management of these areas. (see Fig. 1).

In recent years, there has been a paradigm change in terms of strategies for biodiversity conservation, with approaches that exclude humans from what has been portrayed as “untouched wilderness” increasingly being replaced by a more modern and inclusive approach that sees indigenous peoples and their ways of life as crucial partners in the preservation of sustainable landscapes.

Figure 1 | View of the lavrado landscape (Amazonian savanna) in the Anaro indigenous territory, Roraima.



Photo: Robert Miller/PPTAL

Today, a substantial amount of international norms, agreements and initiatives not only recognize indigenous peoples' rights but also their role in biodiversity conservation. At the same time, they demand

acknowledgment, respect and integration of traditional knowledge and practices in the sustainable management of natural landscapes.

Table 1 | List of the most important international norms, agreements and initiatives that recognize indigenous peoples' rights and their role in biodiversity conservation.

RULE, AGREEMENT OR INITIATIVE	YEAR	OBJECTIVES	REMARKS
International Labor Organization - ILO Convention N° 169	1989; Ratified by Brazil with Decree N° 5.051/2004 (1)	Recognizes the right of indigenous peoples to land and natural resources, to non-discrimination, and to live and develop in a differentiated way, according to their customs. Establishes the right to free, prior and informed consent (FPIC).	Conceives indigenous territories as the completeness of the environment of the lands occupied or used by indigenous people, therefore including collective notions regarding economic, social and cultural rights, in addition to civil rights.
United Nations Framework Convention on Climate Change (UNFCCC)	1995 (1st Conference of the Parties); Ratified by Brazil with Decree N° 2.652/1998 (2)	Treaty signed with the aim of stabilizing the concentration of Greenhouse Gases (GHG) in the atmosphere at levels that avoid dangerous interference with the global climate	The Intended Nationally Determined Contributions (INDC) for reductions in greenhouse gas emissions foresees full respect for human rights, in particular the rights of vulnerable communities, indigenous peoples, traditional communities and workers of sectors affected by the corresponding policies and plans, including gender aspects.

RULE, AGREEMENT OR INITIATIVE	YEAR	OBJECTIVES	REMARKS
United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (3)	2007	International instrument that recognizes indigenous peoples' fundamental rights, realities and needs, emphasizing the right to maintain and strengthen their own institutions and traditions.	Confirms the right to self-determination and to land, territories and resources
Convention on Biological Diversity—CBD: Strategic Plan for Biodiversity 2011-2020 (4)	2010	It contains a set of 20 targets (Aichi Targets) on biodiversity and ecosystem conservation.	The Aichi Goals address the fundamental role of indigenous peoples and traditional communities in biodiversity conservation, as well as ecosystem restoration and maintenance, and the provision of ecosystem services. Since 2020, a new structure is being negotiated (Post-2020 Global Biodiversity Framework).

RULE, AGREEMENT OR INITIATIVE	YEAR	OBJECTIVES	REMARKS
United Nations Food and Agriculture Organization (FAO) Policy on Indigenous and Tribal Peoples (5)	2010	Recognizes the rights and specificities of indigenous peoples, as well as their contributions to sustainable development and management of natural resources, and the legacy of agricultural and food systems developed by them.	Regarding agrobiodiversity conservation, the FAO, together with BNDES, Embrapa and Iphan, has been promoting the Award for Good Practices in Safeguarding and Dynamic Conservation of Traditional Agricultural Systems, in two editions (2018 and 2019).
TIICA Consortium - Territories and areas conserved by indigenous peoples and local communities (6)	2010	A consortium of 154 organizations, aiming at documenting TICCA and promoting the self-empowerment of indigenous and traditional communities, as well as promoting networking and advocacy.	The <i>Espaço TICCA</i> Brazil has MUPAN (Women in Action in the Pantanal) as its partner organisation, responsible for implementing the Pantanal Component of the Blue Corridor Program of Wetlands International.
FAO Voluntary Guidelines for Responsible Land Governance (7)	2012	These guidelines represent the main international normative document on land issues agreed by all member countries of the United Nations.	In 2015, the MDA and Incra prepared a document with guidelines to complement the DVGT in Brazil, with the creation of a specific project in 2018 involving Incra and FAO.

RULE, AGREEMENT OR INITIATIVE	YEAR	OBJECTIVES	REMARKS
Global Landscape Forum (8)	2013	Knowledge platform on sustainable land use, dedicated to achieving the Sustainable Development Goals and the Paris Agreement.	Focused on the restoration of landscapes and forests using a holistic approach to creating sustainable landscapes that are productive, thriving, equitable and resilient.
United Nations (UN) Sustainable Development Goals (SDGs) (9)	2015	Collection of 17 global goals established by the United Nations General Assembly, covering social and economic development, including poverty, hunger, health, education, global warming, gender equality, water, sanitation, energy, urbanization, environment and social justice	These goals constitute the 2030 Agenda for Sustainable Development.

RULE, AGREEMENT OR INITIATIVE	YEAR	OBJECTIVES	REMARKS
Governors' Climate and Forest Effort – GCF: Guiding Principles of Partnership between Subnational Governments, Indigenous Peoples and Local Communities (10)	2018	These Principles establish the recognition and respect for the rights of indigenous peoples and local communities in relation to their land, territories, culture, self-determination and governance, as well as the promotion of measures to ensure protection and defense of forests by indigenous peoples and local communities.	It seeks the synergy of actions to reduce the emission of greenhouse gases from deforestation and forest degradation, with the participation of executives from eight Brazilian states in the Amazon basin.

2.1. Indigenous territories and natural landscapes in Brazil

Regarding biodiversity conservation, Brazil stands out on the world stage with protected areas (including both conservation units and indigenous territories) summing up to more than 2,000,000 km².

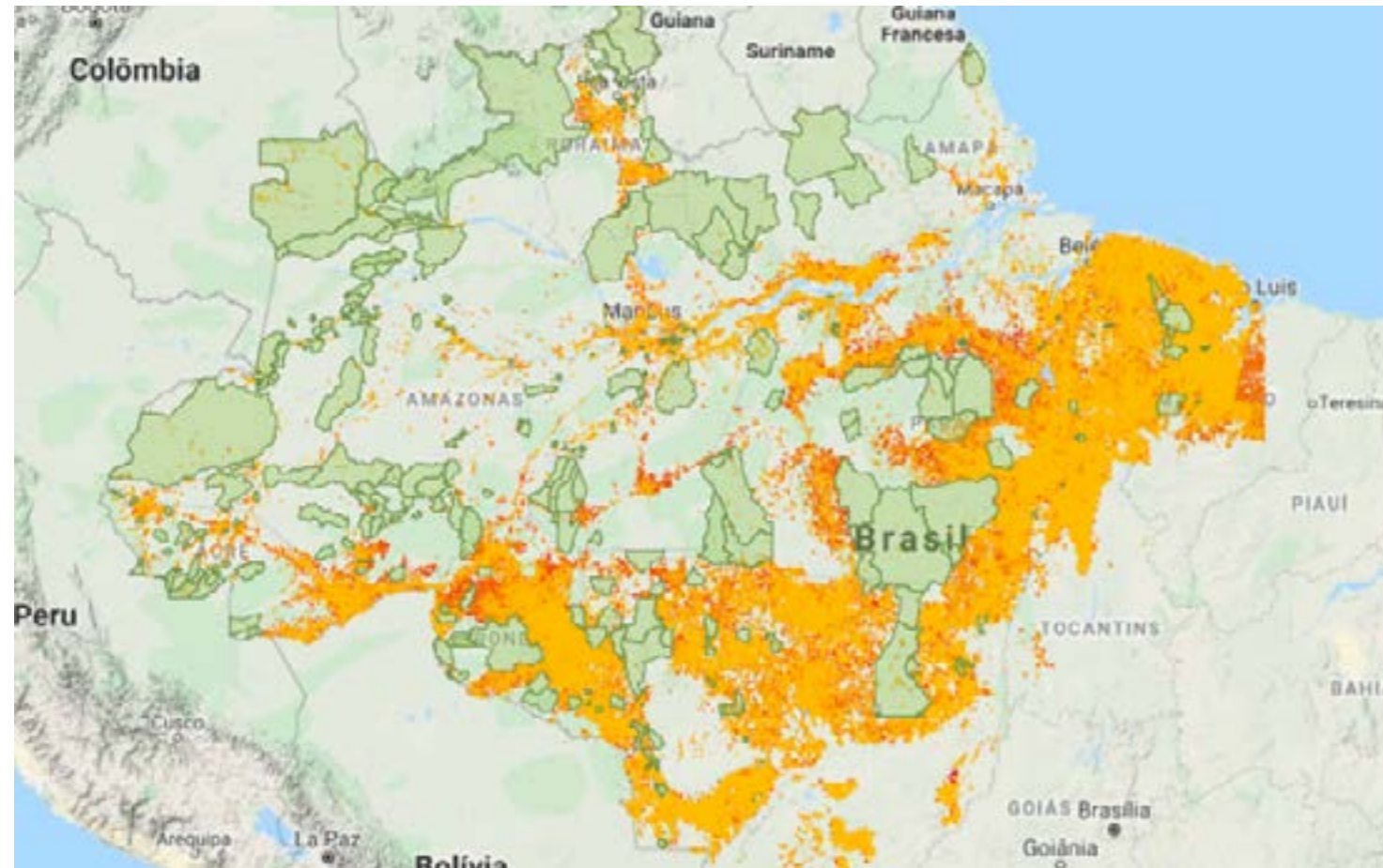
Despite a certain concentration in the Amazonian region, indigenous territories are found across all Brazilian biomes, protecting different types of ecosystems, providing relevant ecosystem services and housing important remnants of native vegetation and populations of associated fauna.

With a total extension of more than 1.1 million km², indigenous

territories protect 13.8% of Brazil's territory and 23% of the Amazon region (11). Indigenous territories and conservation units are considered important barriers that slow down deforestation, particularly in the Amazon region that came to be known as the "Arc of Deforestation", where the agricultural frontier advances with the greatest intensity, along with road construction, hydroelectric plants and other infrastructure projects (12) (13).

According to data from the Ministry of the Environment on the Cerrado and Amazon biomes, only 4% of deforestation recorded in 2018 occurred on indigenous territories (14) (see Fig. 2).

Figure 2 | Deforestation in the Amazon (red and orange), showing the relevance of indigenous territories (light green) for forest conservation.



Source: Somai Platform/IPAM (15)

In addition to representing areas of significant ecological importance on their own due to their size and the variety of ecosystems, many indigenous territories border other protected areas and several of them participate in ecological corridors and mosaics of protected areas – endeavors that mutually improve the management and protection of both conservation units and indigenous territories. For now, the only officially recognized mosaic that covers indigenous territories is the “Western Amapá and Northern Pará Mosaic”, also known as the “Eastern Amazon Mosaic”, established in 2013. This mosaic covers 12.4 million hectares and is made up of three indigenous territories (Wajãpi, Parque do Tumucumaque and Rio Paru D’Este) and six conservation units (Mountains of Tumucumaque National Park, Amapá National Forest, Iratapuru River Sustainable Development Reserve, Amapá State Forest, Cancão Municipal Nature Reserve and Beija-Flor Brilho de Fogo Extractive Reserve) (see Fig. 3).

Other mosaics, although not yet officially recognized, are under construction, such as the Gurupi Mosaic in Maranhão and Pará, which covers the Gurupi Biological Reserve and six indigenous territories (Caru, Alto Rio Guamá, Pindaré, Arariboia, Kaapor and Awa-Guajá), and has constituted a council (see Fig. 4). This mosaic represents a crucial initiative to improve land management in this portion of the region known as the “Pre-Amazon of Maranhão”, which has been suffering heavy environmental impacts from agriculture and alarming rates of deforestation, including through the use of forest fires.

Although empirically understood by indigenous peoples, the ecological connectivity of broader landscapes and the relationship of indigenous territories with neighboring protected areas are still little discussed. In this sense, there is a need to deepen discussions and partnerships in the context of corridors and mosaics to improve the effectiveness of biodiversity conservation and territorial protection initiatives, both in indigenous territories and in conservation units.

The protection of large areas of continuous forest, as it has been found in larger indigenous territories and mosaics, is supported by conservation biology, which recognizes the importance of these areas for animals, especially larger ones at the top of the food chain, such as the jaguar (*Panthera onca*) and the harpy eagle (*Harpia harpyja*), which need extensive habitats to maintain genetically viable populations. In the case of the harpy eagle, population densities have been estimated at only 3–6 nests per 100 km² (100,000 hectares) (16) and the quality of the habitat can be negatively affected by selective logging – a reality in many parts of the Amazon – because even if loggers do not clear the forest, they remove large emerging trees that are preferred places for their nests.

In addition to animals that can be considered emblematic or symbols of conservation, such as the harpy eagle and the jaguar, other animals play equal or even more important roles in the maintenance and ecological functioning of tropical forests, such as the countless species that disperse seeds: from larger animals, such as the tapir, to birds, bats and even tortoises.

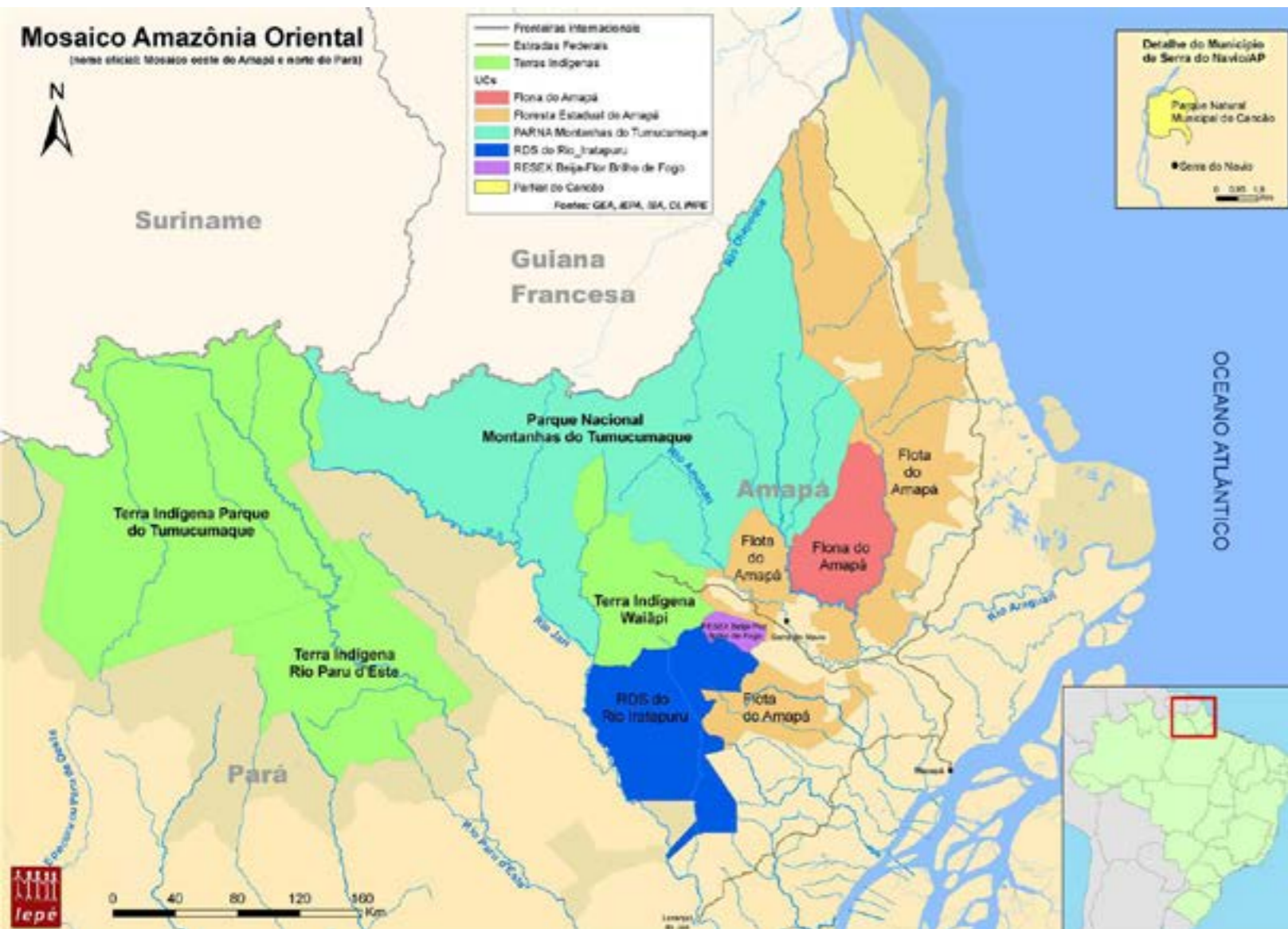


Figura 3 | Eastern Amazon Mosaic, in northern Pará and western Amapá.

Source: lepé Institute.

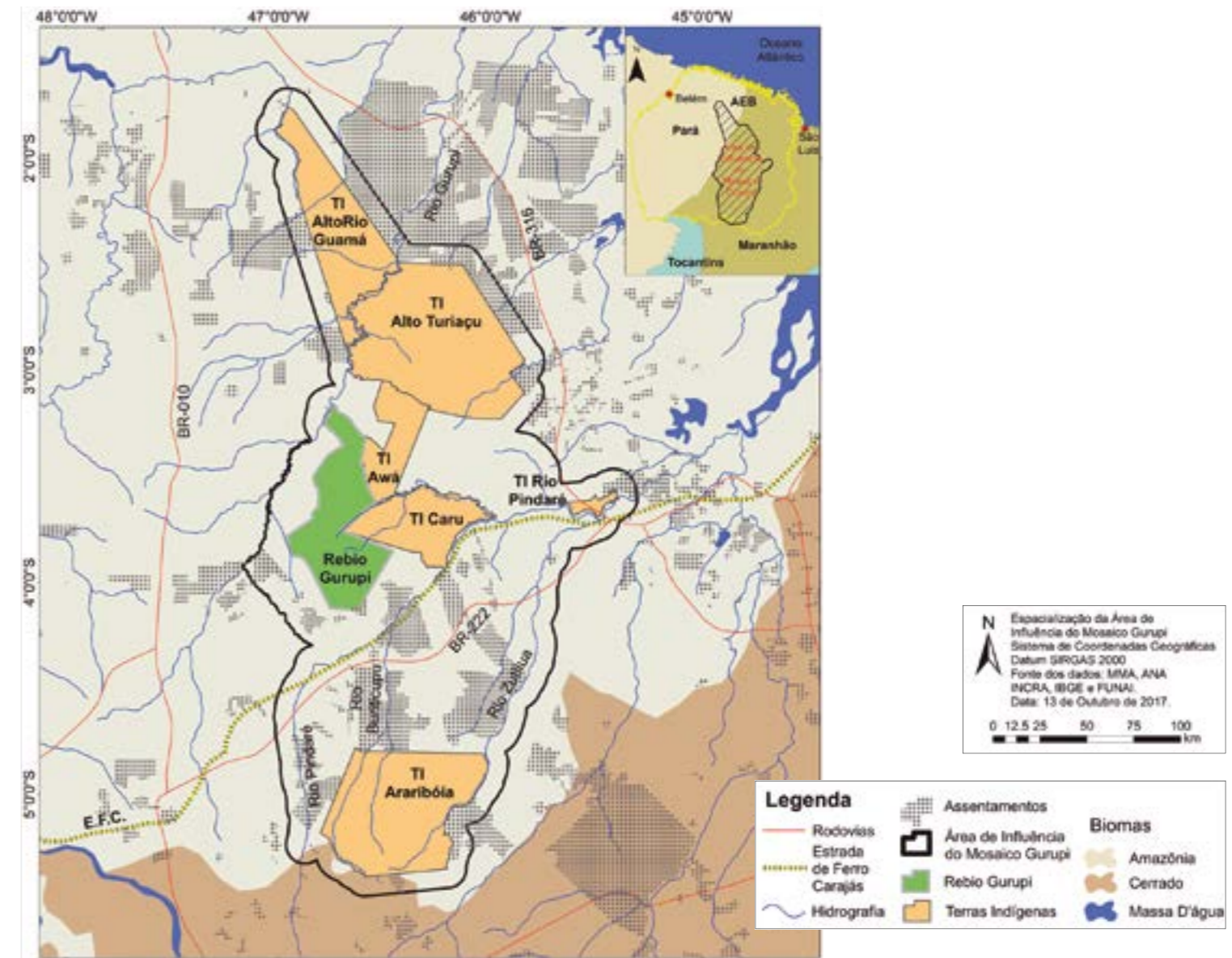


Figure 4 | Gurupi Mosaic, located between eastern Pará and western Maranhão.

Source: Adapted from Celentano et al., 2018 (17)

Large areas of continuous forests are also critical factors in upholding water cycles on a regional, national and even continental scale. The “rivers in the sky”, masses of humid air generated by evapotranspiration by the plants of the Amazon rainforest, are responsible for much of the rainfall in the Center-West and Southeast region of Brazil, as well as influencing rainfall in Bolivia, Paraguay, Argentina, Uruguay and even the extreme South of Chile. Deforestation in the Amazon reduces evapotranspiration by the forest and, consequently, can affect the route of these “rivers in the sky”, influencing the rainfall regime in the rest of the country and harming the water supply of urban areas, the operation of hydroelectric plants and agriculture, irrigated or not (18).

In the context of climate change and its effects on ecosystems, indigenous territories located in transition areas between the Cerrado and Amazon biomes represent especially important habitats for future shifts in vegetation and species distribution.

From the point of view of indigenous peoples, in addition to the spiritual and cosmological values attached to the forest and landscape, the conservation of biodiversity and habitats has a pragmatic side, too. Namely to ensure the protection of populations of animals considered food, both aquatic or terrestrial.

This type of conservation biology, based on in-depth knowledge about the behavior of animals and the functioning of ecosystems, can be documented in PGTAs, which often identify specific zones or portions of indigenous territories that are protected for different purposes and that are associated, directly or not, with the objectives of conserving resources or landscapes. These areas are defined by agreements and social consensus and enjoy more or less restrictive

degrees of protection, depending on their classification, including permanent restriction, restrictions for a determined or undetermined period, or restrictions based on activity or specific species/sets of species (see Fig. 5).

In an analysis of 60 PGTAs located in the Amazon and the transition area to the Cerrado, 27 examples of specific zones or portions of the landscape or territory that receive special attention in relation to their management have been found (19). These examples have been grouped into the following seven general categories:

Zones for the conservation and management of natural resources and landscapes found in a sample of 60 PGTAs:

- Forests that protect bodies of water (springs, banks of water courses, among others)
- Religiously relevant, sacred areas (certain landscapes or geographic features)
- Permanent refuge areas for the protection and reproduction of prey or other fauna
- Areas in which hunting is prohibited for a determined period of time
- Water bodies reserved for fish reproduction (lakes and/or streams), with bans on fishing activities
- Water bodies temporarily restricted during the fish's reproduction period
- Beaches and sand banks where turtles lay their eggs

Figure 5 | Elaboration of an “Ethno-Map”, laying out the landscape and the natural resources around a village in Roraima.



Photo: Robert Miller

Compared to the control and sanction mechanisms applied to the use of and access to natural resources in conservation units, there are major differences in the way in which customs, consensus and rules on the use of natural resources operate within indigenous territories. This fact has to be taken into consideration in the PGTAs. However, there are also several convergences between the indigenous categories of environmental/territorial units

and the National System of Conservation Units – SNUC, the Brazilian government's conservation planning system. This means that there are lots of points where an approximation between indigenous practices and national and global demands regarding the conservation of biodiversity and ecosystems is possible – resulting in the PGTAs' great importance in this context.

2.2. Brazil's Indigenous Peoples: threats to their territories and culture

Threats to and uncertainties regarding the territorial rights of indigenous peoples today represent one of the greatest obstacles to their well-being – right at a time when their contributions to the conservation of natural landscapes through traditional management – including their biodiversity and ecosystem services – is starting to become more recognized. This vulnerability to attacks of their land rights generates uncertainties and conflicts around questions of ownership and access to natural resources, greatly affecting communities that depend on land for agricultural production and on intact landscapes for hunting, fishing and gathering of extractive resources.

Indigenous peoples are also being heavily affected by assimilation pressure from mainstream society, resulting in the loss of cultures and languages, along with the traditional knowledge encoded therein. It is estimated that around 200 indigenous languages can be found in Brazil, each with its own unique way of encoding, transmitting and organizing information and relationships between people and their environment. Many of these languages are at risk of extinction. A single generation not speaking a given language is enough to erase a vast part of the traditional knowledge associated with this language.

The loss of indigenous languages, therefore, poses a significant threat to the well-being of indigenous peoples and their cultural and spiritual relationship to has so far protected the animals, plants and ecosystems on their lands.

Cultural losses associated with the infringement of indigenous peoples' autonomy also include the loss of agrobiodiversity. The ancestors of the current indigenous peoples of Brazil not only domesticated several plants which today are of great economic importance, including cassava, peanuts and pineapples – among others more – but also managed to adapt plants from other regions of the Americas to local conditions, including corn, beans and pumpkins.

The joint work of indigenous and non-indigenous farmers is very relevant in the development of new varieties that arise from cross-pollination between existing varieties. According to Embrapa, the existence of most cassava varieties is the result of the selection and conservation work carried out by farmers in their fields for many years (20) (see Fig. 6).

Regarding food and nutrition security, the preservation of agrobiodiversity is a central strategy to increase the resilience and capacity to mitigate climate change effects or adapt to them, both of indigenous communities and mainstream society. The great variety of crop variations, as well as the different techniques and associated agricultural systems, reduces the risk of losses in cases of climatic instability.

Figure 6 | Propagation material of cassava, sugarcane, banana and pineapple prepared for planting a swidden in Amazonas state.



Photo: Robert Miller

2.3. Actions for biodiversity conservation in indigenous territories and ecosystem restoration

Several ecosystem restoration initiatives have been carried out by Brazil's indigenous peoples as a strategic action for the well-being of their communities, rooted in a holistic view of the environment and the use of natural resources (see Fig. 7). These initiatives tend to focus on the recovery of springs and riparian forests, pragmatically directing efforts to areas that are important for the protection and maintenance of water sources for community use, but also in line with the cosmological values that identify these places as the dwellings of supernatural beings.

These observations are in line with international initiatives and programs such as the Bonn Challenge, a global effort to recover 150 million hectares of the world's degraded and deforested lands by 2020 and 350 million hectares by 2030; and with the United Nations General Assembly statement, which instituted the UN Decade on Ecosystem Restoration from 2021 to 2030.

At the national level, there are parallels in the goals established by the Brazilian government in the National Plan for the Recovery

of Native Vegetation - PLANAVEG regarding the recovery of 12 million hectares of degraded areas.

In this context of initiatives working on ecological restoration, the indigenous territories of Brazil represent a significant opportunity, as they not only present demands for environmental recovery, but also provide a series of successful experiences in this area.

The potential to more broadly incorporate the traditional ecological knowledge of indigenous peoples in the restoration of environments and in the monitoring of natural resources and endangered species, is still little explored in the context of the practical implementation of biodiversity conservation policies and programs.

In this context, PGTAs may be an important instrument for dialogue and a starting point for the search for common goals, as well as for indicating, at the local level, priority areas for recovery efforts.

Figure 7 | Forest resources are essential for the construction of indigenous housing in the Amazon.



Photo: Robert Miller



3. A brief historical overview of Territorial and Environmental Management Plans (PGTAs) in Brazil

The Brazilian Federal Constitution of 1988 recognizes the existence of a special relationship between indigenous peoples and the land, as the basis of their cultural and economic survival. Many other initiatives were developed on top of this conceptual basis in the 1990s and were catalyzed by international movements that emerged after the United Nations Conference on Environment and Development, known as Eco-92, held in Rio de Janeiro in 1992. One of the most representative initiatives took place within the scope of the Ministry of the Environment: the implementation of the Pilot Program for the Protection of Brazilian Tropical Forests (PPG7), financed with resources from the G7 countries, the Netherlands and the European Union and complemented with contributions from the Brazilian government, state governments and civil society, including the support of German technical cooperation known as GTZ, at the time (today's GIZ).

Based on this collaboration and the investments, the foundations that eventually resulted in public policies

specifically aimed at territorial and environmental management of indigenous territories began to be built. In the next paragraphs, we present a brief historic overview of this process and the recognition of PGTAs as an instrument of great relevance in this context.

PGTAs have their roots in the encounter of research with various tools and methodologies – one of them being the Rapid Participatory Diagnosis (RPD) – a methodology developed in the mid-1980s, mainly for agricultural research and expansion.

RPD incorporated elements from diverse areas, such as activist participatory research, agroecosystem analysis, applied anthropology, field research in agricultural systems and rapid rural diagnostics (21). Its success is largely due to the consolidation of a “toolbox”, which allows for a direct dialogue with members of rural communities, and, more importantly, for them to record their knowledge and views on landscapes and natural resources through diagrams that represent four dimensions of reality: space, time, flows and relationships (22).

Since 1996, when Brazilian legislation began to require the inclusion of an environmental component in the process of identifying and demarcating indigenous areas (23), several of these tools – such as participatory mapping – the seasonal calendar, transect walks and others, started to be more applied in work with indigenous peoples.

In this context, the Project for the Protection of Indigenous Populations and Lands in the Legal Amazon (PPTAL) – a result of a partnership between Funai, the Ministry of the Environment and the Pilot Program for the Conservation of Tropical Forests in Brazil (PPG7) – elaborated in 1998 a guide to conduct ethnoecological surveys in indigenous territories, recommending the use of participatory tools to record indigenous knowledge about the use and management of their territories and natural resources (24). At that time, in the context of the Law of Directives and Bases (1996), which established the right to a differentiated indigenous education, there was also a discussion of an “Indigenous Geography”, with co-designed maps being appropriated as an instrument for training indigenous teachers and in the production of teaching material for indigenous schools (25) (see Fig. 8).

It is important to note that the connection between traditional peoples and biodiversity was already being explored in academic circles, with the publication of the series *Suma Etnológica Brasileira* in 1987, whose first volume was dedicated to Ethnobiology (26). The following year, the first International Congress of Ethnobiology was held in Belém, Pará, organized by the Goeldi Museum. At the same time, the concept of “Ethnodevelopment” as a guideline for indigenist actions began to gain strength, although it was only consolidated within Funai from the second half of the 2000s onwards, with the publication of the Manual for the

Promotion of Ethnodevelopment in Indigenous territories in 2007, based on workshops held in 2006 with methodological support from German technical cooperation (GTZ)/PPTAL (27).

From the 2000s onwards, there was a more expressive combination of maps drawn freely with maps based on remote sensing techniques, through the encounter of Geographic Information Systems - GIS with the indigenous enthusiasm of incorporating satellite images as a new tool to expand the look at territories and natural resources (see Fig. 9).

Although “mind maps” continued to be developed, satellite images were increasingly used as a basis for participatory mapping, either with annotations directly on printed images or on acetate sheets or tracing paper put on top of the images. With this, it became easier to georeference different categories of information and indigenous knowledge as layers in GIS, allowing the generation of ethno-maps, and finally, ethno-zoning based on cartography. In this way, a wide range of possibilities was opened in terms of patterns of use of space and resources, although they are still little explored.

Initiatives such as those revolving around PGTAs in Brazil have convergence and similarities with other movements and dynamics carried out in neighboring countries, such as Colombia, where the initiative “Planes de Vida” (Life Plans) are understood as autonomous planning instruments for communities with collective property titles, with emphasis on the need to establish an exchange of knowledge between the territorial management carried out simultaneously by indigenous communities and the Colombian State (28). Data sets on this initiative are available on the official website of the Colombian Ministry of the Interior (29).

Figure 8 | Cover of the textbook Indigenous Geography, with texts and drawings produced by indigenous teachers from the Xingu Indigenous Park and the Kapôô/Jarina, Kaiabi and Mekragotire indigenous territories.

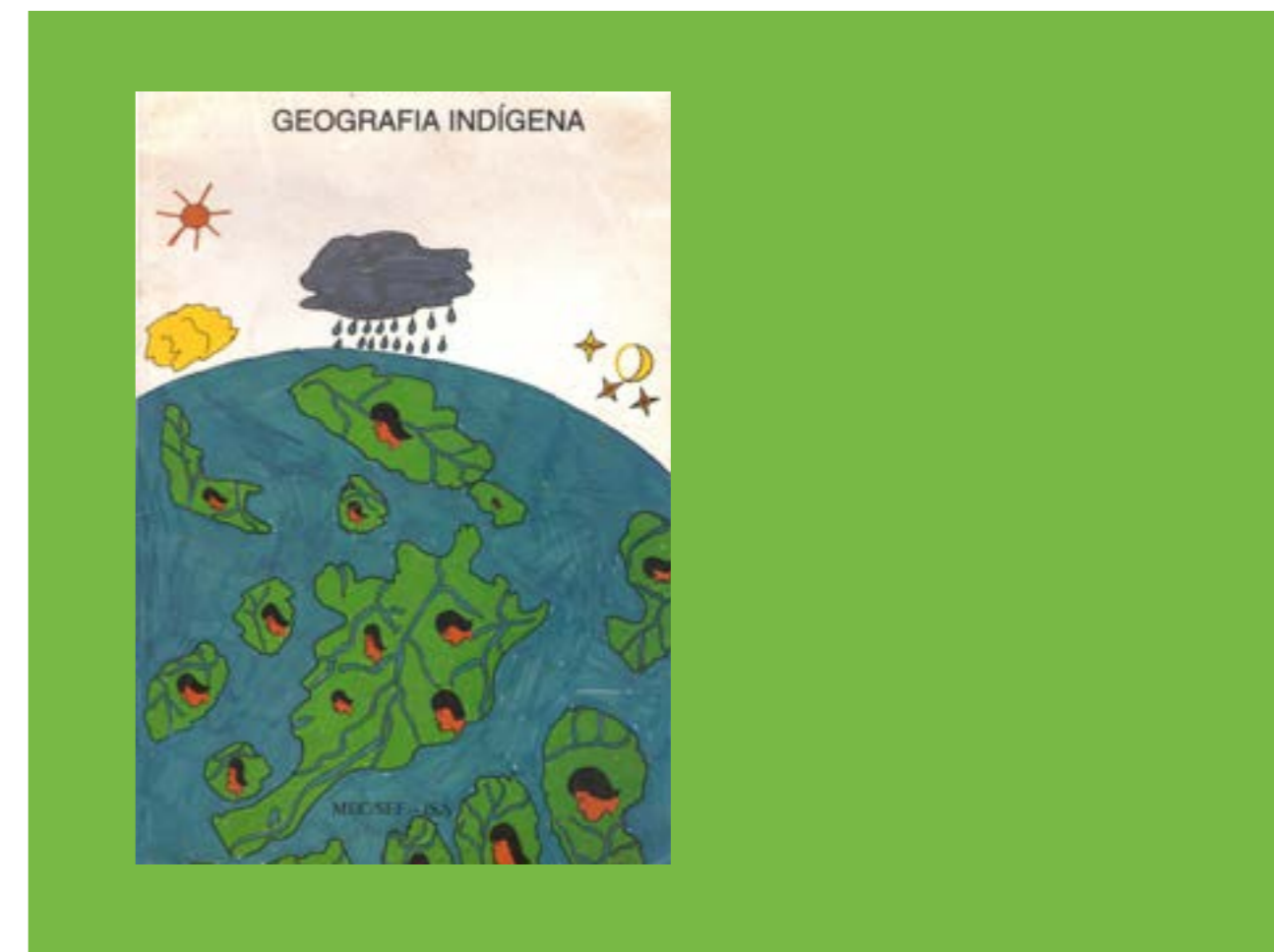




Figure 9 | Use of satellite images during the ethnoenvironmental survey of indigenous territories in the Macuxi-Wapixana Complex, Roraima, 2006.

Photo: Robert Miller/PPTAL

Referencing the Colombian experience, the instrument was adapted in other countries, too. In Peru, the Life Plan is considered an instrument of collective, differential and integral strategic planning from the government's viewpoint, which starts from the world view and history of an indigenous people, to determine what the group wants to achieve and how to reach it (30). They are known under different names, such as Full Life Plan, Quality of Life Plan or Well-being Plan, among others.

In 2016, the government of Bolivia established regulations through the Ministry of Planning and Development to guide the preparation of Community Territorial Management Plans for buen vivir (good living) (PGTC) as components of the National System of Integrated State Planning, with the expectation of their incorporation into Territorial Comprehensive Development Plans, based on the various experiences previously carried out in the country (31).

The consolidation of PGTAs as an instrument in Brazil comes at a time when public policies aimed at indigenous peoples begin to recognize in a more incisive way, worldviews and forms of social organization that are based on territories and resources of common use, with the understanding that the demarcation of indigenous territories is a fundamental necessity to allow these systems to continue to exist.

The creation of the National Policy for Sustainable Development of Traditional Peoples and Communities (PNPCT) in 2007, and the National Policy for Territorial and Environmental Management of Indigenous territories (PNGATI), in 2012 (32), represent important steps taken by the Brazilian government in relation to recognition, respect and integration of traditional knowledge and practices of indigenous peoples and their contribution to sustainable landscapes.

Although the National Policy for Territorial and Environmental Management of Indigenous territories (PNGATI) does not explicitly address PGTAs, it deals with two fundamental components of PGTAs, ethno-mapping and ethno-zoning, providing the following definitions: ethno-mapping is the participatory mapping of areas of environmental, sociocultural and productive relevance for indigenous peoples, based on the combination of Western scientific knowledge and indigenous knowledge, while ethno-zoning is a participatory planning instrument that aims at categorizing areas of environmental, sociocultural and productive relevance for indigenous peoples, based on the dataset established through ethno-mapping.

The publication of a manual from FUNAI in 2013, entitled Territorial and Environmental Management Plans for indigenous territories: guidelines for their elaboration, may be considered as an official milestone in the recognition of PGTAs by the government. This manual condensed the methodologies used under the PGTA conceptual framework in a single publication and consolidated the role of this instrument in public policies, facilitating its acceptance by other government institutions, taking on particular relevance since FUNAI and the Ministry of the Environment had jointly made the implementation of 51 PGTAs in indigenous territories as an institutional goal in the Federal Government's Pluriannual Plan (PPA) 2012-2015. The 2016-2019 PPA, too, foresaw support for the preparation and review of 20 PGTAs and support for the implementation of 40 PGTAs, including monitoring and evaluation.

In addition to being instruments for indigenous peoples to reflect and plan the present and future of their territories, PGTAs are also strategic instruments for the articulation and coordination of the various public policies aimed at indigenous peoples at the federal,

state, and municipal levels.

In fact, the incorporation and approval of PGTAs by FUNAI and the Federal Government was an important step to open doors to other sources of financing for the elaboration and/or implementation of PGTAs, such as the Climate Fund, the Amazon Fund/BNDES, the Demonstrative Project of Indigenous Peoples (PDPI/MMA) and the United States Agency for International Development (USAID), among others.

The Climate Fund's support for PGTAs in the Cerrado and Caatinga biomes represented an important novelty, since until then most of the resources for financing actions of this type were limited to indigenous territories in the Amazon.

PGTAs are part of a wider variety of "management tools", which range from Life Plans (which don't necessarily including ethno-mapping) to mapping in the context of the New Social Cartographies Project (33), where making maps has the objective of supporting the struggle for rights, allowing local populations (indigenous, quilombolas, traditional populations) to use technologies to assert their rights over the lands they occupy.

This set of management tools also includes other components of PGTAs, such as ethno-mapping and ethno-zoning, sometimes published separately. However, the focus today is on complete PGTAs uniting these different approaches, since they are present in at least 129 indigenous territories, according to a survey conducted by FUNAI in 2018 (see Fig. 10).

The timeline below summarizes the main events or events that are part of this history of consolidation of PGTAs as an instrument, both for strengthening indigenous protagonism and public policies (see Fig. 11).

Figure 10 | Survey of Territorial and Environmental Management Instruments in indigenous territories.

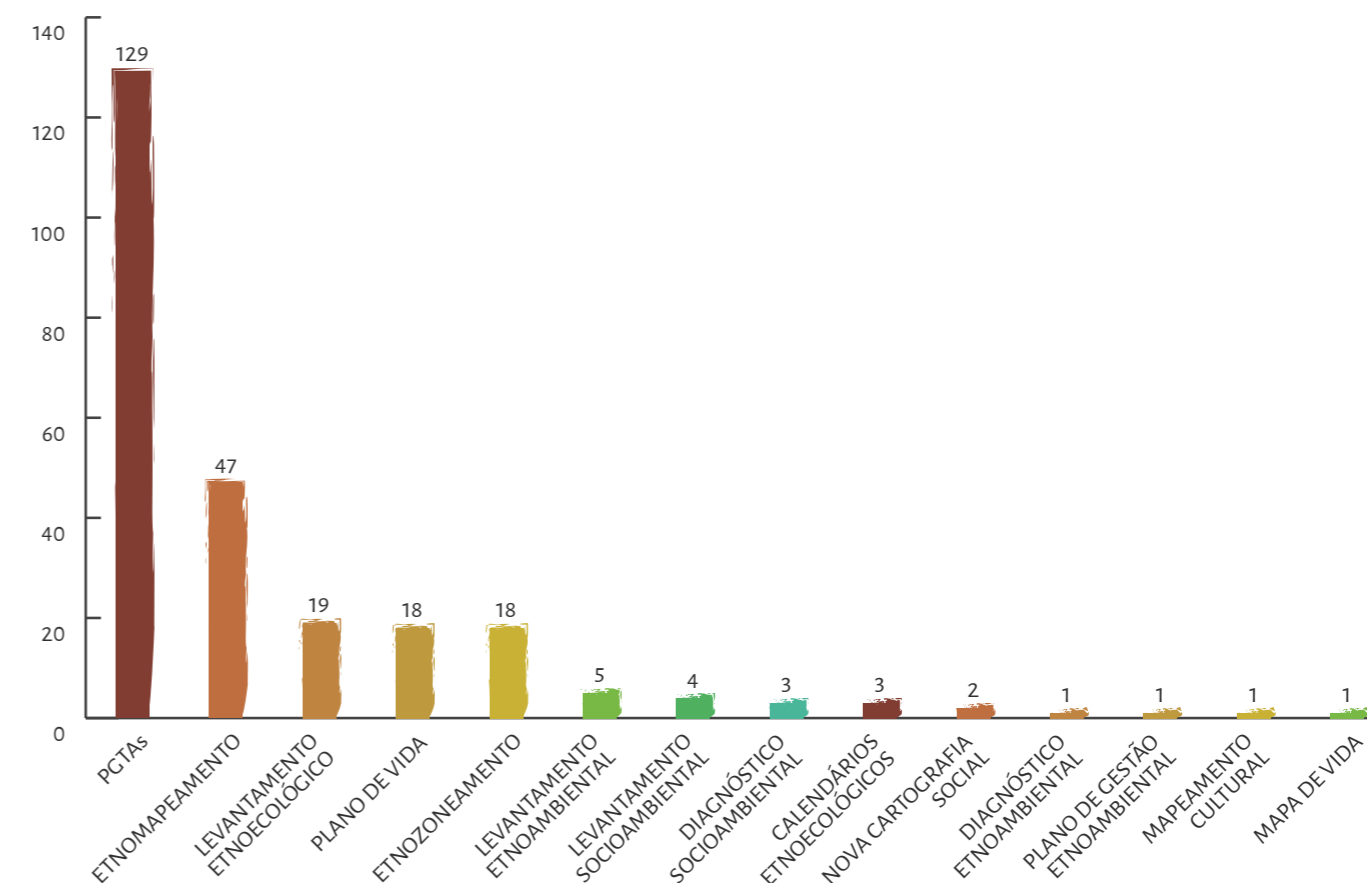
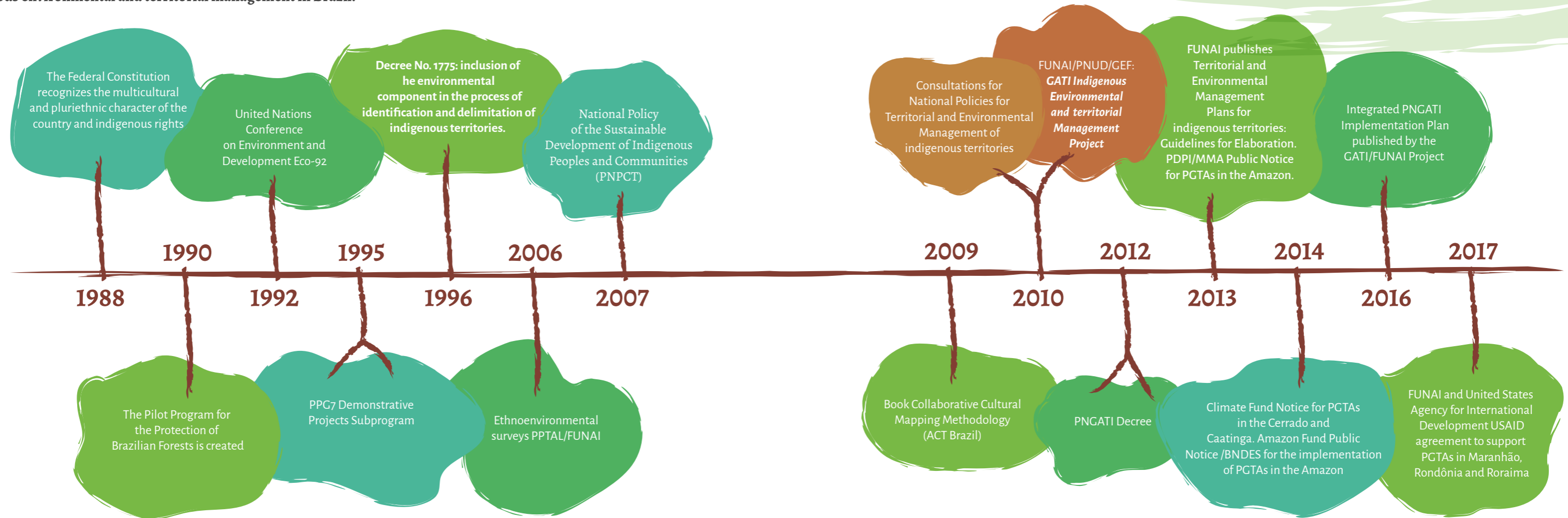


Photo: General Coordination of Environmental Management - CGGAM/FUNAI, 2018.

Figure 11 | Timeline of events, policies and other events related to the development of concepts and instruments for indigenous environmental and territorial management in Brazil.



MANAGEMENT PLANS FOR INDIGENOUS TERRITORIES: STARTING POINTS FOR THE IMPLEMENTATION OF PUBLIC POLICIES IN THE STATE OF ACRE

The State of Acre hosts a total of 36 indigenous territories stretching over 2,436,581 hectares or 14.5% of its territory. Thanks to a continuous effort by state institutions along with cooperation of partners that started in 2003, PGTAs have become not only instruments for diagnosis and strategic planning of the communities, but also serve as guidelines for the implementation of projects, actions and activities in these territories.

Based on these plans, indigenous territories were provided with differentiated educational services and programs to promote sustainable production, diversification of productive activities and food security combined with income generation, paying attention to the recognition and strengthening of indigenous cultures and organizations.

From 2003 to 2006, the State-Secretariat for the Environment (SEMA) supported the participatory elaboration of PGTAs in eight indigenous territories strategically located in areas with plans for infrastructure development (opening the BR-317 and BR-364 highways, in particular). Simultaneously, the NGO Comissão Pro-Índio do Acre (CPI/AC) carried out a similar process in other indigenous territories located in the border region between Brazil and Peru.

Since 2018 another 13 PGTAs have been elaborated with the help of the Program for Social Inclusion and Sustainable Economic Development of Acre (PROACRE). The elaboration of the remaining PGTAs, and updating of others, has been

supported by SEMA and partners such as FUNAI, Chico Mendes Institute of Biodiversity (ICMBio) and CPI/AC. On this basis, the Government of Acre has been investing in 26 indigenous territories, supporting measures to improve sustainable production, cultural appreciation and strengthening of associations.

The aforementioned actions continued with resources of the World Bank (WB), in a second phase, entitled Environmental Sanitation and Socio-Economic Inclusion Program of Acre (PROSER), with the aim of improving access to and promotion of basic services such as health, education and productive community development in rural areas located in settlement projects, riverside communities and especially in Indigenous territories.

Currently, the promotion of subprojects focusing on more economic notions included in PGTAs is being made possible. Thus, with a series of steps to be followed during the execution, the work will consist of the elaboration, updating and monitoring of management plans, followed by the technical follow-up and the implementation of these subprojects.

The ethno-zoning workshops aimed at the elaboration, updating, and monitoring of PGTAs are participatory moments in which the villages that constitute the indigenous territories are represented through leaders, teachers, health agents, agroforestry agents, women's associations and students, discussing and signing internal agreements and territorial management strategies.

This initiative is also aimed at strengthening indigenous community organizations and empowering families' socioeconomic development, improving food security, increasing income generation and reducing rural poverty. It is expected that these actions raise the indicators of socioeconomic conditions of communities and municipalities in the State of Acre, by strengthening indigenous cultures.

Based on the demands presented in the plans, between 2013 and 2017, the forest protection activities were carried out in indigenous territories in the context of the Acre State Environmental Asset Valorization Project, supported with resources from the Amazon Fund/BNDES. The 36 indigenous territories in the state of Acre were provided with training and equipment for territorial protection and surveillance.

Additional resources for the implementation of management plans have been raised through the Institute for Climate Change and Regulation of Ecosystem Services (IMC), a state agency supervised by the SEMA but with financial autonomy and administrative independence.

The IMC coordinates the Incentive Program for Carbon-related Ecosystem Services (ISA Carbono), a component of the System of Incentives for Ecosystem Services (SISA), financed by the REDD Early Movers Program (REM), in the context of the initiative for Reducing Emissions from Deforestation and Forest Degradation (REDD). The REM is financed with resources from the Energy and Climate Fund of the Federal Government of Germany, also counting with a partnership with the United Kingdom in its second phase.

Figure 12 | *Vida Nuke Kuí Project Cover.*



The Indigenous Subprogram of SISA is part of the ISA-Carbon Program, which aims at promoting the recognition of indigenous peoples for their preservation of their culture and livelihoods. The subprogram supports the management plans, internal components are implemented by the communities themselves, through the following measures:

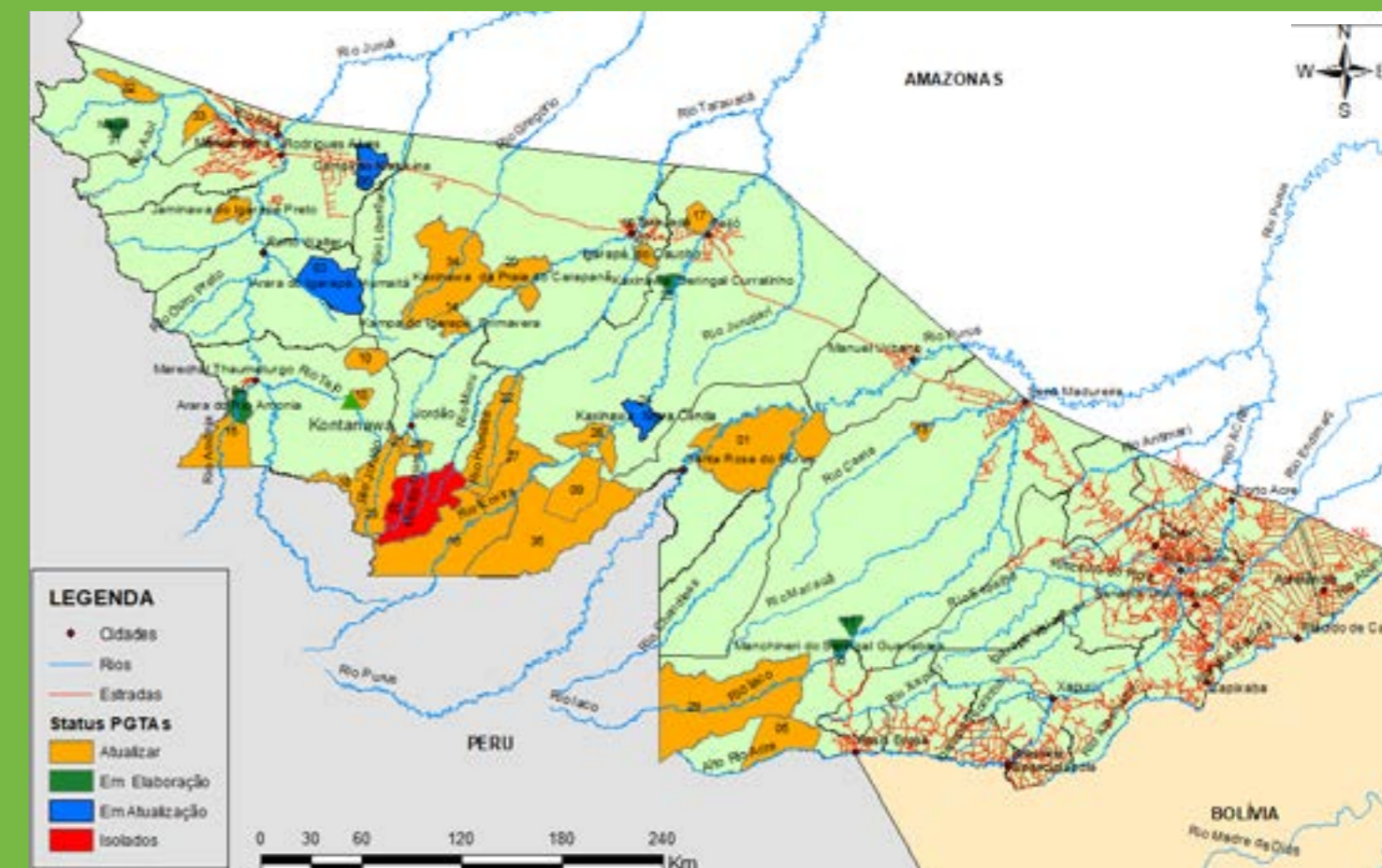
- Subsidies for 149 indigenous agroforestry agents who implement actions to protect the territories of their people and promote sustainable management activities in their territories
- Training of 50 new indigenous agroforestry agents
- Subsidies for organizations for the implementation of management plans on indigenous territories and cultural heritage activities
- Trainings for submission of proposals from indigenous organizations, based on their management plans
- Support for 25 of the 36 indigenous territories in Acre
- Agreements signed with 59 indigenous associations.

As of 2019, the State of Acre, as per its guidelines, started to manage the programs in a synergistic way (credit operations such as the BIRD itself, the IDB and non-reimbursable funds such as the Amazon Fund/BNDES, KfW, BEIS /United Kingdom and other sources working on the issue), aligning the different investments and considering the needs to exercise the basic principles of sustainable development.

In this way, the indigenous family producers expand their activities to increase their productivity, to minimize deforestation and forest burning practices, reducing negative impacts on the soil and water, but also preserving the culture that characterizes them as inhabitants of Acre's forests and river banks.

With these actions, the state of Acre has tried to promote respect and autonomy for its indigenous peoples, incorporating management plans as planning tools that reconcile sustainable development with the improvement of living conditions and cultural valorization in the indigenous territories.

Figure 13 | Indigenous territories in Acre with Management Plans, Ethno-zoning or Ethno-mapping prepared and in the process of being prepared, along with their respective supporting institutions (situation in March/2021).



Source: Secretaria de Estado de Meio Ambiente do Governo do Estado do Acre

THE IMPORTANCE OF UPDATING PGTAS IN ACRE: AN INDIGENOUS PERSPECTIVE

...Nowadays, the new generations already grow up understanding the management plan. It is a knowledge that today is passed on by indigenous schools, within the bilingual system. Putting this knowledge on paper brought recognition to the fact that indigenous peoples have their own management, they know how to take care of their environment and their ways of life...

Updating the PGTIs (Indigenous Land Management Plans) is important because this is considered as accountability for the communities themselves, where they can evaluate and monitor their projects, to visualize where they came from and where they arrived, without leaving their communities. The update will allow the community to perceive positive and negative changes, what should

continue and what should not continue, and what should be removed or added.

So, we need to take care of the land, treat the land well, please the land and talk to the land so that it helps us to continue the progress of each indigenous people.

That's what we always say: a healthy life exists when the land and the environment are well cared for with dedication and joy; and that is what makes the land beautiful and the environment pleasant.

The update of the PGTIs will show this path very clearly for each community because it is their thought, the thought of how the future will be lived...

MANOEL GOMES KAXINAWA,

Pinuya Village, Kaxinawa Indigenous Land of Colony 27,
Indigenous Advisor to the Secretary of State for the Environment,
Government of Acre (March, 2021)



Photo: Diego Gurgel / Secom AC.



Raposa-Serra do Sol, Indigenous Land, Roraima | Picture: Robert Miller /PPTAL

4. PGTAs: methodology e techniques

Of course, each indigenous tribe has its specific forms of social organization, worldview and awareness about its territory and natural resources. However, the practical experiences of elaborating PGTAs have been consolidating a basic methodology, even though its application must be sensitive to the particularities of each people and a wide diversity of contexts, which determine the most appropriate approaches.

4.1. Stages of the elaboration of PGTAs

Evaluating previous experiences in the elaboration of PGTAs, a basic methodology can be summarized in five steps. These steps are parts of an ongoing process, as shown in the diagram and explanations below:



4.2. Description of the stages

1. MOBILIZATION OR SENSIBILIZATION

The idea of the first stage (the mobilization or sensibilization phase) is to present to the communities and other entities involved in the process what the process involves, including an explanation of the objectives and the commitments and inputs necessary from the communities, and which are the benefits of PGTA. In this phase, the actors or key figures who will have more decisive roles in the organization of workshops and field trips are identified and the intervention logic is determined, including an assessment of the materials and equipment, transport and food, needed. Preferably, it is also at this stage that a preliminary schedule is established for carrying out the following steps and activities.

2. DIAGNOSIS

The duration of this phase and depth it can go into largely depend on the quality and availability of information about the indigenous territory, including demographic and health data, number of villages and their geographic location, land tenure, projects and public policies in action, among others. This information – which should be collected before or during the mobilization stage – must be compiled in order to support the following stages, especially aspects related to logistics and planning of activities.

3. ETHNO-MAPPING

Although initially considered a part of the Diagnosis phase in the publication “Territorial and Environmental Management Plans for Indigenous territories: Guidelines for the Elaboration, from FUNAI” (2013), due to the importance of ethno-mapping as an activity not only for recording information but also for the exchange of knowledge between generations and the expansion of that knowledge, it is crucial to treat this activity as a distinct phase (see Fig. 14). In fact, ethno-mapping itself generates products and maps that may be appropriated by communities in various ways, including as teaching materials in indigenous schools. In some cases, the publication of a volume of ethno-maps, a kind of indigenous “atlas”, configures an important intermediate milestone along the process of elaborating a PGTA (see Fig. 15). Ethno-mapping is usually done during workshops, the duration of which depends on the availability of the people participating and other factors, such as the sometimes complicated logistics of reuniting people from around vast and remote territories.

4. ETHNO-ZONING

Ethno-zoning can be considered a phase of organization and consolidation of the information that was registered in the ethno-maps. Although the concept of “zoning” refers to non-indigenous categories of organizing urban and rural spaces, indigenous territories also have a clear internal organization of their spaces that is developed and noted down during ethno-zoning. In addition to recording current uses of territorial spaces and environments, ethno-zoning can also have an indicative role, in the sense of identifying and prioritizing places where greater interventions or attention are needed (e.g. demands for monitoring and surveillance, for the protection of riparian forests, recovery of native vegetation and habitats of local fauna, among others).

5. ELABORATION OF THE PGTA

The elaboration of the PGTA as a written document seeks to consolidate and synthesize the information and demands raised in previous stages, but is not limited to issues of territories and natural resources, as it may also indicate needs related to the provision of public policies, such as those related to health and education, which are an integral part of the communities’ well-being. As for natural resources, according to the demands indicated in the ethno-mapping and ethno-zoning stages, the discussions around the Plan can be the starting point to establish consensus or agreements about the management of certain species or ecosystems and, if necessary, what protection measures should be adopted to promote their recovery or maintain their sustainable use. Whether these agreements will be made explicit in the PGTA is a decision that is made by each ethnic group, according to their culture and customs. Whether explicit or not, the effectiveness of these agreements depends largely on the quality of the previous stages: whether they were participatory processes, broad, transparent, and carried out within “indigenous time”, that is, with respect for the forms of social organization and decision-making, as well as the demands of the daily tasks of productive activities (agricultural and extractive) and the calendar of ritual activities. As in the two previous steps, workshops are the most common way to build the final document that is the written form of the PGTA.

Figure 14 | Presentation of ethno-mapping of environments of the Bakairi Indigenous Land, Mato Grosso.



Photo: Robert Miller / GATI Project

Figure 15 | Publication of the results of ethno-mapping in “atlas” format - Entre Serras de Pankararu Indigenous Land, Pernambuco (with resources from the Climate Fund).



In essence, the process of developing a PGTA promotes internal indigenous reflections on three basic questions:

- What was our land like in the old days?
- How is our land today?
- How do we want our land in the future?

The answers to these questions emerge as the ethno-mapping exercises deepen the view of the territory and its resources and reveal the current state of the indigenous land, while reconstructing, through the memories of the elders, its situation in the past. This temporal contrast can be revealed both through the analysis of satellite images and through field expeditions, where the borders of the indigenous land are surveyed and the impacts of surrounding economic activities are evaluated, as well as the presence of natural resources of special importance, among other features of interest.

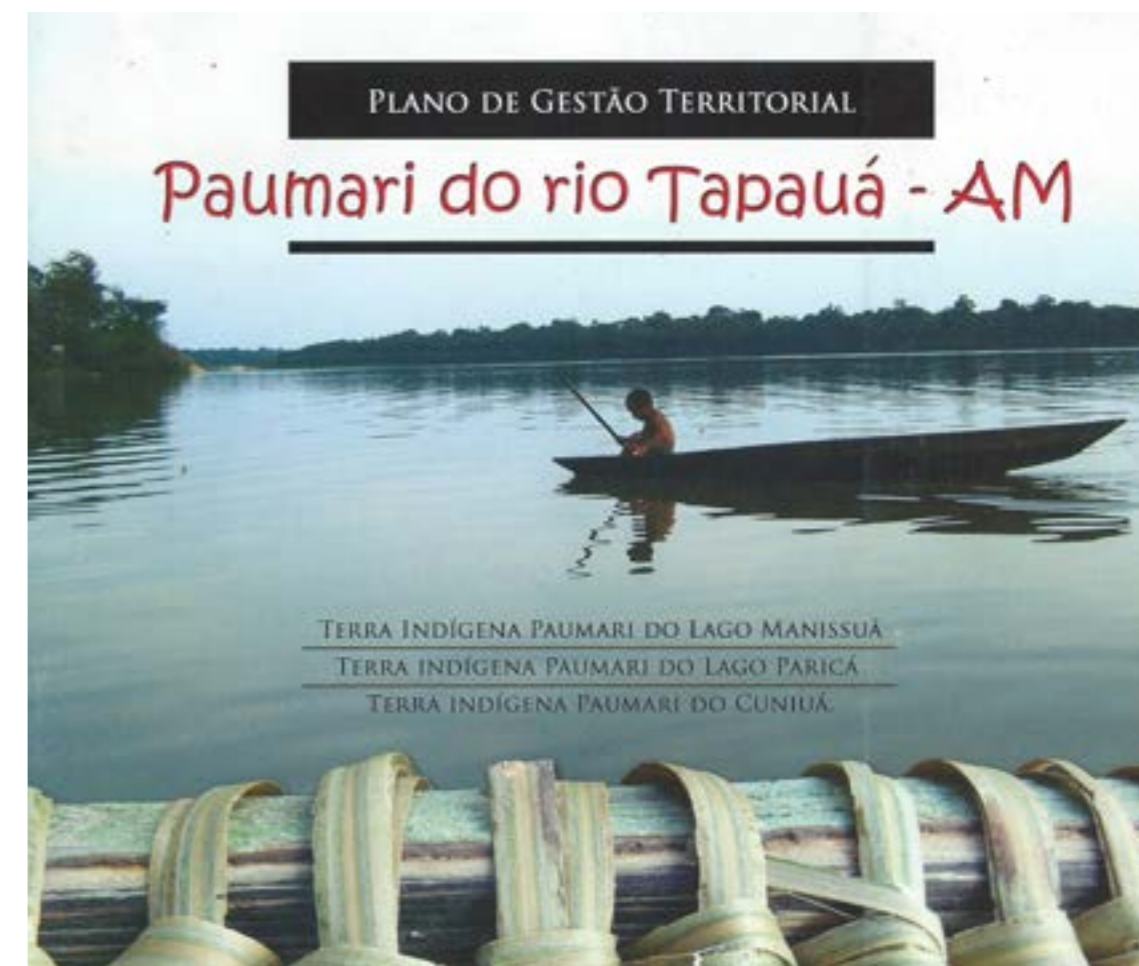
This gathering of information about the state of the territory and its resources, along with reflection about the changes that have already occurred or are underway, opens the path that leads to the third question, which precisely involves

the discussion around what represents a better future. In this exercise, the ethno-zoning and the PGTA are tools that consolidate and record the thoughts and desires about the future and how to define strategies to achieve it (see Fig. 16).

The process of building a PGTA has a number of positive spin-offs in terms of strengthening indigenous organizations and the internal governance of the indigenous land, the acquisition of new skills and knowledge and dialogues within and outside the indigenous land. In addition, the materials generated, such as ethno-maps and the PGTA itself, can also be used as materials in the school.

One of the demands that appears throughout the process of elaborating the PGTAs is the need to have indigenous people with specific training, both in the elaboration of activities and later in their implementation. Therefore, an important component that emerges with PGTAs, is the figure of the “indigenous environmental agent” (or related categories), discussed below.

Figure 16 | Cover of the Territorial Management Plan of the Paumari People of the Tapauá River, Amazonas.



Source: Villages-OPAN Project / World Vision / USAID



Traditional basketry | Picture: Robert Miller

5. Indigenous Environmental Agents and the implementation of PGTAs

As a parallel and subsidiary action to the elaboration and implementation of PGTAs in indigenous territories, the formation of a category of “indigenous environmental agents” or the like represents an essential strategy to support the management of indigenous territories and strengthen indigenous protagonism.

Training programmes for environmental and territorial management has been developed in several regions, ranging from quick initiatives to professional technical high school courses. The National Seminar on Indigenous Training for Territorial and Environmental Management, held in May 2016 in Brasília, brought together 26 experiences with these initiatives (34). That seminar, however, did not cover all the experiences of this type, and since 2016 several other initiatives have been carried out or are currently in progress.

Some examples of training courses for environmental and territorial management include the initiative of the Indigenous

Council of Roraima (CIR) to train “Indigenous Environmental and Territorial Management Agents”, and the training course for Indigenous Agroforestry Agents (AAFI), developed by the Pro-Indigenous Commission of Acre (CPI/AC), at high school level, and recognized by the Acre State Council of Education since 2009. Currently there are 179 AAIFs in Acre, from 14 peoples and 30 indigenous territories, who have been helping the state government implement state policies for Reducing Emissions from Deforestation and Forest Degradation (REDD) (35).

In the Xingu Indigenous Park, the Socio-Environmental Institute (ISA) trained 32 young people in territorial and environmental management through biannual meetings, with face-to-face modules of 15 to 20 days each. In 2018, 22 books and booklets were published in order to bring the students’ work on various topics to their local realities (see Fig. 17).

Figure 17 | Books produced from the work of the students of the course on territorial and environmental management in the Xingu Indigenous Park, promoted by the Socio-environmental Institute (ISA).



Depending on the demands and socio-environmental reality of each region and situation, the training of these agents can focus on several issues, including surveillance and territorial monitoring, good management practices of extractive products, the implementation of agroforestry systems, the recovery of degraded areas, agro-ecological production, eco- and ethno-tourism and biodiversity monitoring.

It is also important to highlight the role of indigenous brigades in fire management and control. As a result of the Technical Cooperation

Agreement between FUNAI and Prev-Fogo/IBAMA there were 40 indigenous brigades operating in 39 indigenous territories in 2018, with a total of 726 brigade members (see Fig. 18).

With the set of initiatives to train indigenous environmental agents and related categories, the dependence on external technicians to conduct workshops and other activities related to the elaboration of PGTAs is slowly being reduced. However, indigenous participation

Figure 18 | Meeting of Indigenous Territorial and Environmental Agents formed by the Indigenous Council of Roraima (CIR) and indigenous brigade members, Raposa Serra do Sol Indigenous Land, Roraima.



Photo: Robert Miller

and protagonism in the analysis of the collected data and the use of geographic information systems (GISs) is still very small, with the exception of the Remote Sensing Laboratory of the Indigenous Council of Roraima (CIR), which is operated by indigenous technicians who assist the communities in the production of maps.

At the same time, several initiatives have emerged with the aim of making georeferenced information on deforestation, forest fires and climate available to indigenous peoples, such as the Indigenous

Amazon Observation and Monitoring System platform (SOMAI), created by the Amazon Environmental Research Institute (IPAM) (36).

IPAM is currently testing an application called Alerta SOMAI, to allow the georeferenced recording of information regarding environmental crimes affecting indigenous territories (37). However, there remains a need for support for greater appropriation of these tools by indigenous peoples, including training to familiarize indigenous peoples with their use.

THE EXPERIENCE OF THE INTERNATIONAL INSTITUTE OF EDUCATION OF BRAZIL (IIEB) IN SUPPORTING THE DEVELOPMENT AND IMPLEMENTATION OF PGTAS

For about 15 years, the IIEB has been building partnerships with indigenous organizations in two priority regions - Southern Amazonas and Roraima - helping to expand the logistical, administrative and technical capacity of these organizations, so that they can access and execute, at the local level, projects related to indigenous and environmental public policies for territorial and environmental management.

This union of efforts between organized civil society and indigenous organizations has strengthened the protagonism, autonomy and self-determination of indigenous peoples in environmental protection, territorial control and the search for economic autonomy.

In this process, Territorial and Environmental Management Plans (PGTAs) have proven to be fundamental instruments, supported by broad institutional arrangements, such as the construction of partnerships between civil society organizations, government organizations, and local and regional indigenous organizations.

IIEB is helping to execute the Bem-Viver Project in Roraima, working with the Indigenous Council of Roraima (CIR) and with support from the United States Agency for International Development (USAID). The objective of this project is to implement PGTAs in six indigenous territories. These indigenous territories, inhabited by the Wapixana, Macuxi, Ingarikó,

Taurepang and Patamona ethnic groups, are: Serra da Moça, Aningal, Boqueirão/Mangueira, Jacamim, Manoá-Pium and sub-regions of the Raposa Serra do Sol Indigenous Land: Santa Cruz Base Pole, Maturuca Center and Lower Cotingo Region.

Also, IIEB supports the implementation of the Liga da Floresta and SulAm Indígena projects in Southern Amazonas, both financed by the Amazon Fund/BNDES and implemented in cooperation with the local grassroots organizations OPIAM, OPIPAM, FOCIMP, OPIAJ, OPIAJBAM, APIJ, APITIPRE and APITEM. These projects focus on the implementation of PGTAs of indigenous territories occupied mainly by the Parintintin, Jiahui, Tenharim and Apurinã tribes, namely: Camicuã, Apurinã of km 124, Boca do Acre, Água Preta Inari, Seruini/Mariênê, Nove de Janeiro, Jiahui, Ipixuna, Tenharim of Igarapé Preto and Tenharim Marmelos.

Some of the activities implemented, included institutional strengthening, the training of Indigenous Environmental Agents, food security associated with hunting, fishing, gathering/extractivism and farming activities, the issue of health and sanitation, integral attention, promotion, prevention, cure, strengthening/rescue of indigenous medicine, cultural revitalization, village infrastructure issues and issues related to territorial protection and surveillance.

Figure 19 | Pupingary Indigenous Environmental Agents course in Rondonia, 2018.



Picture: IIEB Collection

The implementation of these activities is supported by indigenous environmental agents (AAI), in Southern Amazonas, and by indigenous territorial and environmental agents (ATAI), in Roraima. These agents dedicate their work and creativity to carrying out activities in their villages and communities, especially the management and conservation of natural resources, political articulation with the communities, surveillance and inspection actions, research, ethno-mapping and the production of digital maps, surveys, diagnoses, including inventories of natural and/or agroforestry resources.

This experience of IIEB with the indigenous peoples of Roraima and Southern Amazonas, carried out in local, direct and 'on the ground' actions, has shown that the implementation of PGTAs - combined with the actions of environmental agents - is central to improving effectiveness. In the same way, the creation of alliances and pacts between organized civil society and indigenous organizations, whether traditional or formalized, is also fundamental.

Figure 20 | Train PNGATI course, in Rondônia, 2013.



Picture: IIEB Collection

THE EXPERIENCE OF THE INDIGENOUS COUNCIL OF RORAIMA (CIR) WITH PGTAS

The Indigenous Council of Roraima began working with PGTAs in 2011, starting with the Maturuca Center in the indigenous territories Raposa-Serra do Sol and Jacamin. Subsequently, it supported the preparation of the PGTA in the region of Serra da Lua, on the Manoá-Pium territory. This process initially relied on the participation of external consultants, but, over time, the indigenous protagonism increased until becoming a process executed 100% by indigenous agents, with the CIR itself providing advice to the communities.

The communities understand PGTAs as an opportunity to put down on paper the plans they have always had in their heads, along with the mental maps they already have of their territory. They see PGTAs as an opportunity for discussion inside and outside the indigenous territory and during the elaboration phase of the plan they raise issues with public

policies, such as monitoring and surveillance, agriculture and, especially, water – not only for consumption, but also for irrigating crops.

The PGTA becomes a tool to express these demands and take them in the form of a document to the main external actors, such as the municipal and state governments and organs such as SESAI (Indigenous Health Secretariat) and the Agricultural Secretariats.

Women have a key role in the preparation and implementation of PGTAs, because a strong aspect of these Plans is that they work with a vision of the future. Women, as well as young people, are able to collaborate in the elaboration of the plan providing their perspective regarding the management of the territory. In this aspect, the CIR has been working on the importance of including the perception of women in relation to climate change.

In relation to the monitoring and surveillance of indigenous territories, there are currently four categories of very important actors, which are the Indigenous Territorial and Environmental Agents (ATAI), the brigadistas, the rights operators and a new category, the AGPVIT, who act directly in monitoring and surveillance. These four categories are directly involved in the implementation of actions established in our PGTAs.

It is important to highlight that today, 90% of PGTAs in Roraima are being implemented and the communities are managing to implement the planned actions, at least partially.

The CIR is now celebrating its 50th anniversary, and its participation and advice in the construction of these plans, now 100% indigenous, seeking to ensure rights and improve access to public policies, is very important.

SINEIA BEZERRA DO VALE,

Wapixana Indian, Environmental Manager and Coordinator of the Department of Territorial and Environmental Management of the Indigenous Council of Roraima - CIR



Photo: Jessica Maria/CIR



House under construction, Xingu Indigenous Park, Mato Grosso | Photo: Robert Miller

6. PGTAs and indigenous peoples: challenges and perspectives

Overall, PGTAs have had a very positive outcome, allowing indigenous peoples, with the help of new tools and an in-depth look at their territories and natural resources, to materialize proposals for a better quality of life. They also proved to be instruments for more concrete dialogues between indigenous peoples and municipal, state and federal government bodies responsible for the execution of a range of public policies that affect indigenous peoples' lives. Beyond this, PGTAs represent the visible result of a broader process that generates a great many other benefits, including a greater mobilization and internal organization of the community, the exchange of information between generations and the strengthening of the protagonism and capabilities of those involved. However, there are several issues that need to be discussed to better understand the scope and effectiveness of PGTAs in the current reality of indigenous territories in Brazil.

The main point concerns the implementation of PGTAs, which list a series of actions and activities to improve the management of indigenous territories, many of which require external funding and/or greater investment by the government. Because of this, the difficulties of implementation - especially the lack of specific resources for environmental and territorial management - have resulted in frustrated expectations.

It is important to note that several actions on indigenous territories that used to be the responsibility of the federal government, such as health and education, have been transferred to municipal and state governments. The budget and staff cuts at FUNAI - accelerated in recent years - also indicate that other actions, such as support for agriculture, are following the same path, with a greater presence of municipal and state agricultural secretariats.

Even so, there remains a large gap in support for activities that can be placed in the category of “territorial and environmental management” and that go far beyond the areas of health, education, and agriculture. Even where it is possible to say that the implementation of a particular PGTA is progressing, information about the effectiveness of this implementation is scarce. In this regard, there is no clear set of indicators that can be used to evaluate the implementation of the PGTA.

As a planning instrument, it is recommended that PGTA undergo periodic review, as they need to be flexible, including the incorporation of new information, learnings and desires. The review should also be a time to evaluate the effectiveness of implementation. However, currently there is no readily available information as to the number of PGTA reviews or of evaluation processes that have been carried out.

Another aspect of PGTA that needs more reflection is the way in which they deal with possible conflicts regarding the predatory and unsustainable use of natural resources and the actors involved, both internally and externally. The way this is being handled in PGTA and

in their implementation is a subject that has been little studied and deserves more attention.

Some PGTA are being developed in large indigenous territories, which present specific challenges, such as the logistics of working and transporting in remote locations and organizing workshops with adequate representation. The reality of designing and implementing PGTA in these situations certainly implies adjustments in approaches, timeframe and costs, among other factors. A comparative analysis of these situations could provide useful information to subsidize initiatives that support the design and implementation of PGTA.

In recent times, PGTA are being elaborated with isolated and/or recently contacted indigenous peoples, with specificities and peculiar characteristics compared to other PGTA. The reality and challenges of these contexts have also been little discussed.



Araçá Indigenous Land, Roraima | Photo: Robert Miller

7. Outlook

In situations where indigenous peoples have greater interaction with the surrounding society and local economies, the creation of opportunities for income generation may be an important factor for their well-being and, consequently, for sustainable landscapes and territories. In many cases, the lack of opportunities for income generation, generates a growing exodus of indigenous people, especially youth, to urban centers, making their lands even more vulnerable to external threats and pressures.

One of the strategies to develop economic alternatives consists in supporting sociobiodiversity chains or bioeconomy products. This is particularly important for communities that already have a history of participation in extractive activities but can also include new products or value chains. By adding value to natural landscapes and their resources and generating income, extractivism also represents an alternative economic land use, counteracting the expansion of monocultures and pastures into new agricultural frontiers.

Income-generating activities linked to agro-extractivism are also more in tune with the ways in which family groups allocate their time and labor, exercise social ties, and participate in kinship networks.

For these reasons, indigenous peoples consider that is necessary to create a range of mechanisms to support initiatives at various scales, that can reinforce multiple dimensions of the conservation of their territories and the improvement of their well-being, whether in territorial protection and surveillance, in the value chains of agro-extractivist products and/or in forest recovery, among other issues.

It is also necessary to consider new demands that are placed on indigenous peoples in relation to the management of their territories, such as the recovery of ecosystems and integration with articulations that seek ecological connectivity at the landscape scale.

PGTAs have proven to be essential instruments for mobilizing indigenous peoples and their organizations to discuss, evaluate and plan around the various questions currently posed in relation to indigenous well-being. However, in addition to PGTAs, some general lines or strategies that need greater support are:

- Training young people to implement public policies related to the conservation of biodiversity and the management and monitoring of their territories, also aiming to strengthen their governance at the local level
- Encouraging mosaics, corridors and similar strategies within a larger perspective of supporting the management of territories and the conservation of biodiversity, strengthening consortiums and other articulations for the protection of territories and their contribution to sustainable rural landscapes

- Encouraging agro-ecological and agro-forestry production, together with local purchasing mechanisms, to strengthen both food security and income generation
- Promoting capacity building for community organizations, such as associations and cooperatives, so that they can access funding sources for productive activities and the sustainable use of biodiversity
- To encourage and support environmental recovery through productive systems, like agro-forests, which provide food and other materials to the communities such as fibers, firewood, medicines and raw materials for handicrafts and construction, among others.

Additionally, networking is a fundamental strategy for the exchange of information and experiences among the various initiatives underway, expanding their scope and the dissemination of methodologies, practices and action mechanisms that have proven successful.

**DEDICATED TO THE MEMORY OF THE INDIGENOUS LEADERS AND ELDERS
WHO WERE TAKEN FROM US IN 2020-2021**



Rock Art, Roraima | Photo: Robert Miller

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