THE AMAZON BIOECONOMY:

insights from the Pará experience

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GOVERNO DO BRASIL
DO LADO DO POVO BRASILEIRO
DIEESE
DEPARTAMENTO INTERSINDICAL DE ESTATÍSTICA E ESTUDOS SOCIOECONÔMICOS

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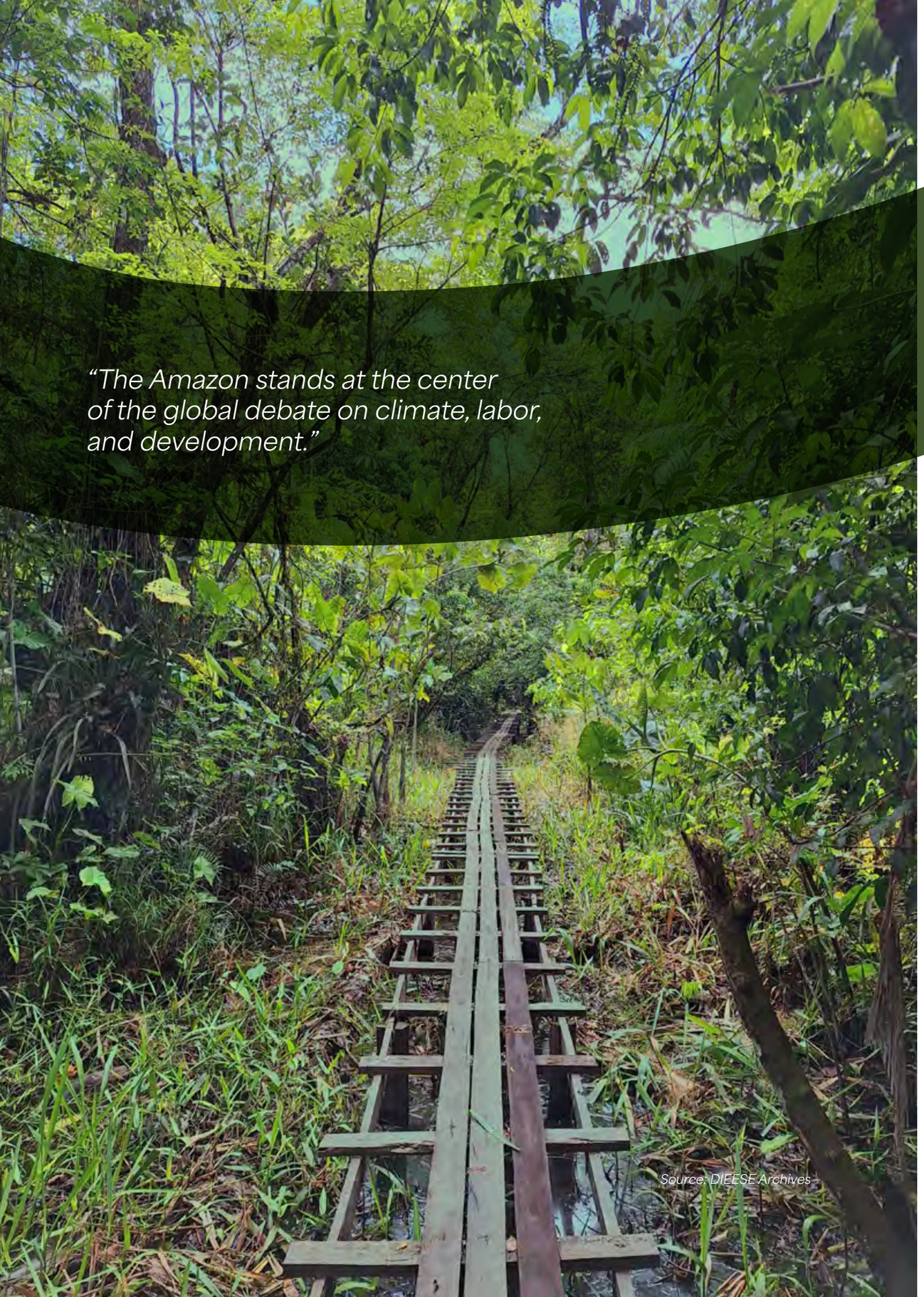
SUMMARY



“The Amazon stands at the center of the global debate on climate, labor, and development.”

Source: DIEESE Archives

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INTRODUCTION

“Thinking about the bioeconomy means thinking about those who work and how those who keep the forest standing live.”

The theme of this study is vast, encompassing a wide range of possibilities: the bioeconomy in the Amazon and everything that can be framed within this topic in relation to labor and income generation. In light of the urgency posed by climate change, however, the study was delimited to the state of Pará, the host of the 30th edition of the United Nations Climate Change Conference (COP 30). Among other reasons, this choice is justified by the fact that Pará has the largest population in the Northern Region (8,120,131 inhabitants, or 46.8% of the total, according to the 2022 IBGE Census) and the largest Gross Domestic Product (GDP), which in 2021 accounted for 46.6% of the region’s total GDP. Moreover, Pará was the first state to develop a specific public policy to promote the bioeconomy, with the launch, in 2022, of the Pará State Bioeconomy Plan, the PlanBio[1]).

As this study addresses an emerging topic in contemporary debate, its proposal is to provide an initial, systematic approach to the disputes surrounding the concept and its various interpretations, with the aim of offering a comprehensive perspective for the working class. In this sense, the study is organized into two parts: the first discusses the main debates around the theme, while the second focuses on the analysis based on the life stories of workers from different regions of the Pará Amazon - most of them informal workers, paid on a daily basis, unprotected, non-salaried, or engaged in family labor. They include quilombola communities, riverine populations, residents of environmental protection areas, rural settlements, and Indigenous lands, all engaged in traditional forms of work.

Given the broad and exploratory nature of this research, the study sought to encompass the widest possible range of types of work and production carried out by people living in the visited areas, under equally diverse conditions and territories. Accordingly, the Marajó Archipelago was chosen as the first region of focus, as it embodies such diversity - beginning with the distinct characteristics of its two subregions: the *Campo*, dominated mainly by buffalo ranching, cheese production, abundant açaí, natural grasslands (some flooded), forest islands, artisanal fishing, manioc flour, and the traditional culture and festivities of Cachoeira do Arari; and the *Floresta* region, farther inland, also rich in açaí, but with stronger economic activity based on fishing, timber extraction, and the production from its extractive reserves and rural settlements.

Despite the wide variety of livelihoods and productive means - traditional and otherwise - found in Marajó, the Indigenous presence was missing. And it would be impossible to address the world of labor in the complex Amazonian forest without considering its original inhabitants, whose practices influence nearly all others in the region, and who have long faced structural difficulties in sustaining themselves through the sale of their own products. Recognizing Indigenous peoples as part of the broader, heterogeneous composition of today’s working class was a challenge this study deliberately set out to address.

For the second field, two territories were chosen: the Médio Tapajós region, encompassing the Sawre Muybu and Sawre Ba’pim Indigenous Lands (TIs) and the urban villages of the Munduruku people in Itaituba; and the Baixo Arapiuns region, known for its beautiful beaches suitable for community-based tourism (TBC). Climate change was evident–and increasingly aggressive and visible - in the accounts of all interviewees, across all the places visited, regardless of their occupation, production activities, or life stories.

The climate emergency is a transversal theme throughout this report. If the current crisis is what prompts the deepening of the bioeconomy debate in Brazil and worldwide, it is in the everyday lives of forest peoples and research participants that the effects of these environmental changes on Amazonian workers can be most clearly observed - effects that become even more harmful when combined with invasion, deforestation, contamination, and other impacts recorded in areas of conflict.

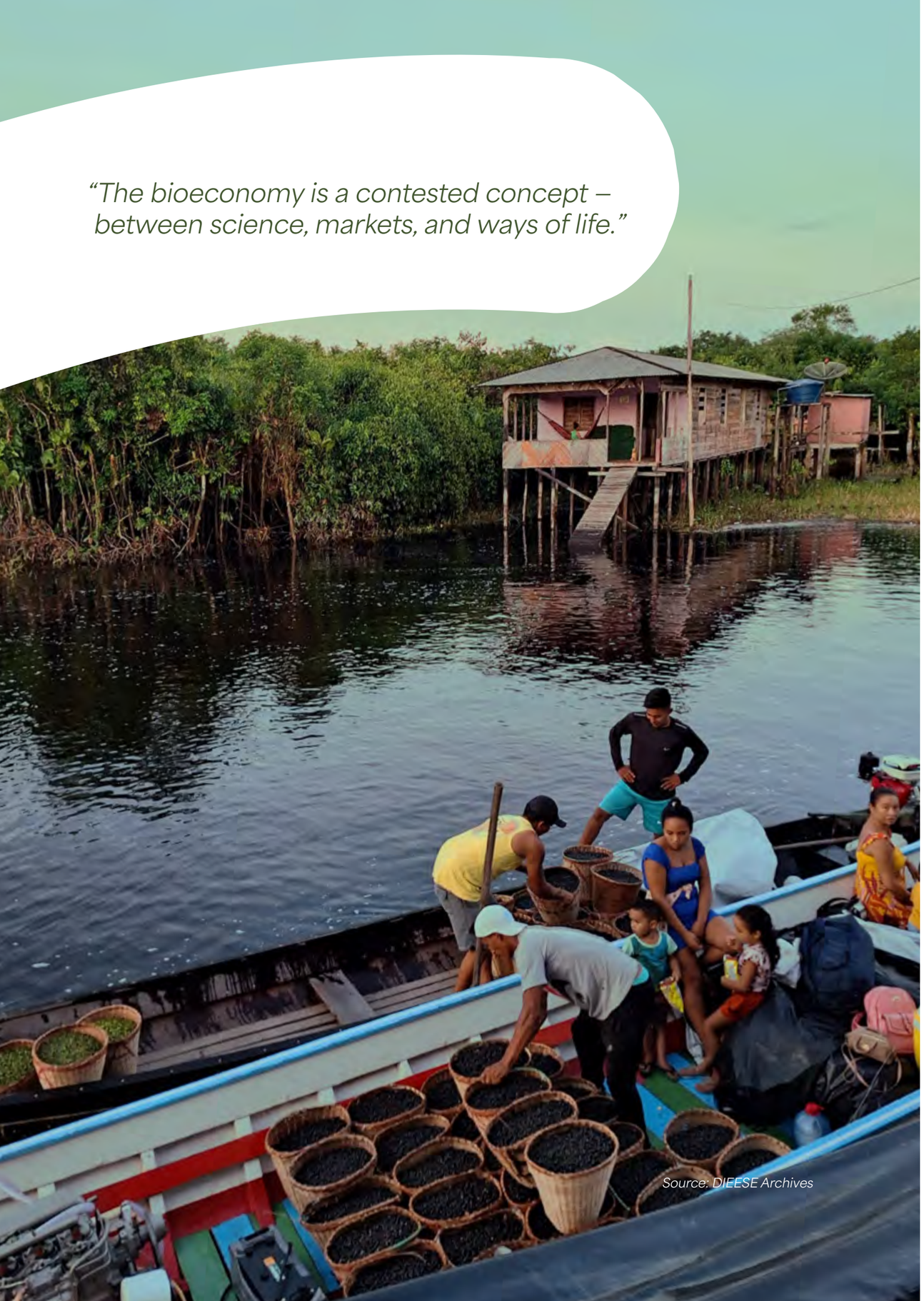
The struggles of residents in the territories visited, the invasions, threats, and aggressions that affect production and interfere with work, are another theme addressed here, focusing on the workers themselves, their perspectives on daily labor, their forms of remuneration, and their modes of organization and regulation.

The challenge undertaken by DIEESE was to envision a bioeconomy that could take into account the complexity of these populations’ lives, encompassing issues related to various forms of violence and inequality, such as those stemming from structural sexism and racism, as well as debates around access to land, credit, and technical assistance to improve their professional activities, among other topics.

Finally, this study seeks to organize and systematize the territorial demands in a list of recommendations developed from fieldwork, bibliographic review, and close monitoring of the current debate.

1. The National Bioeconomy Strategy, of which the PNDBio is a part, was established by Presidential Decree No. 12,044 of June 5, 2024. DIEESE holds a seat on the Commission, representing workers (https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/decreto/d12044.htm).

“The bioeconomy is a contested concept – between science, markets, and ways of life.”



Source: DIEESE Archives

CONCEPTUAL ASPECTS AND DISPUTES AROUND THE BIOECONOMY

The climate crisis and the depletion of natural resources have called into question the prevailing development model, giving rise to terms such as energy transition, sustainable development, and green capitalism. These concepts express different visions of how to reorganize the economy and redefine the relationship between society and nature.

For DIEESE, understanding the bioeconomy requires starting from the perspective of workers - wage earners, family farmers, traditional peoples and communities, self-employed and informal workers - who are the main ones affected by ecological and productive transformations. The goal is to analyze the bioeconomy as a contested concept, situating its interpretations in Brazil and in the Amazon, particularly in Pará, the host state of COP30.

The term *bioeconomy*, first proposed by Nicholas Georgescu-Roegen in the 1970s, gained prominence in policies of the Global North, associated with biotechnology and the replacement of fossil fuels, often disregarding local social and ecological realities. In Latin America, Costa Rica was a pioneer, and in 2022 the state of Pará launched its State Bioeconomy Plan (PlanBio), followed by the National Strategy (2024) and the drafting of the National Bioeconomy Policy (2025).

According to WRI Brazil (2022), there are three main approaches:

1. Biotechnological - centered on scientific and technological innovation;
2. Bioresource-based - focused on the use of renewable biomass;
3. Bioecological - oriented toward biodiversity conservation and social justice, the most appropriate for the Amazon.

“Just transition, green capitalism, sociobioeconomy: expressions of the same clash of worldviews.”

The latter aligns with local expressions such as *sociobioeconomy* or *bioeconomy of sociobiodiversity*, which value community practices and traditional ways of life. In academic discussions, authors such as Abramovay (2022) define bioeconomy as an "economy of life," while Marcovitch and Val (2024) describe it as a set of interdependent dimensions.

Thus, more than a productive sector, the bioeconomy constitutes a field of political and economic contestation, whose meaning will depend on who defines its priorities–and on how it can integrate environmental conservation, social inclusion, and decent work.

The very construction of the National Bioeconomy Development Plan (PNDBio)[2] reflects these three types of bioeconomies, as the plan's development is based on a thematic division into three main areas: one centered on economic activities linked to biomass - that is, the universe of energy generation; another focused on bioindustry and/or biomanufacturing activities; and finally, one concerning terrestrial and aquatic ecosystems and their sociobioeconomy. Each of these thematic areas constitutes a Working Group responsible for drafting the general guidelines for the national plan, which will still be validated by the National Bioeconomy Commission and by the public through a consultation process. In this sense, it can be inferred that the Brazilian policy currently under development has a concerted nature, aiming to bring together diverse interests within a single project.

"The sociobioeconomy envisions a bioeconomy with an Amazonian face and the voice of its territories."

2. Available at (https://www.gov.br/funai/pt-br/assuntos/noticias/2024/ministerio-justica-declara-posse-da-terra-indigena-sawre-muybu-pa-ao-povo-munduruku)

Source: DIEESE Archives

“The forest peoples reinvent work every day, balancing tradition and survival.”

Airplane flying over a rice field in the Marajó Archipelago, spraying crops.
Source: DIEESE Archives

VOICES OF THE FOREST: LIFE, WORK, AND INCOME IN THE AMAZON

THE CLIMATE

“We know that they–the nature and the river–are crying out for help.”

Three of the four crew members of the boat belonging to the Pariri Indigenous Association (AIP) had to step out and pull the vessel over the rocks, wading through the murky waters of the Tapajós River up to their shins, in order to reach the Indigenous village of the Munduruku people on the outskirts of the municipality of Trairão, on the sunny afternoon of Monday, September 16, 2024. The village chief and founder, aged 70, said he could not remember ever having seen the river so dry - and feared that the situation would worsen.

“The river wasn’t like this before, when we first came here. The channel right there - you came through it - that never dried up. Today no one can sail through it carrying a load anymore. I keep saying that in October it will dry up, and it does. Today we depend on nature, and nature depends on us too. We know that they - the nature and the river - are crying out for help. The river is our freezer, right? When we want fish, we go there and get it fresh. Now it’s hard. There’s little. And this year, even more - we’re suffering. The drought. You’ve seen the drought and the strong winds?”

With 105 residents forming 16 families, according to the chief, the community lies within the Sawre Muybu Indigenous Land (TI), inhabited by the Munduruku people - whose demarcation decree would be signed nine days later by the Minister of Justice and Public Security, Ricardo Lewandowski, two decades after the beginning of the process[3]. Now delimited and demarcated, covering 168,000 hectares across the municipalities of Itaituba and Trairão, in the Médio Tapajós region, the Sawre Muybu Indigenous Land (TI) has been suffering the consequences of mining and logging activities in the area, as well as the advance of agribusiness - particularly soybean cultivation.

3.Governed by Decree No. 1,775 of January 8, 1996, the process of regularizing an Indigenous land comprises five stages. The first is the identification and delimitation of the territory. Next comes the declaration stage. The third stage is demarcation; the fourth is ratification by the President of the Republic; and the fifth and final stage is the registration of the Indigenous land by the National Foundation of Indigenous Peoples (Funai) with the Secretariat of Federal Assets (SPU) and in property registries, as public land designated for the exclusive use of Indigenous peoples. (available at https://www.gov.br/funai/pt-br/assuntos/noticias/2024/abril-indigena-entenda-as-etapas-de-demarcacao-de-terras-indigenas)

In less than a decade, the village saw its landscape, climate, and the habits of its animals change, according to the account of the village chief, given under the scorching heat that forced the interviewers to move from leaning against the side wall to the dining table in the center of the communal hut, where the shade was larger and the space between the ground and the roof was wider. The chief, however, remained on the side of the hut, leaning against the wall.

"We've been here for ten years. In the past, this was paradise - more breeze, everything was easy. Today, we're living almost in the water like fish, but even we can't manage in the river anymore. The river's getting really hot. And the wind, the nature isn't getting any better - it's making us sick. Not just us; the animals of the forest are also suffering. They need water. There's no more water in the streams - they've all dried up. In the river, we see those pigs on the shore, wild pigs we eat. It's sad - poor creatures, all white and gray, and there's no rain to bathe them".

About three months earlier, in the Campo do Marajó region, in the municipality of Cachoeira do Arari, a small cattle rancher, 57 years old, described that the suffering of the game animals under the heat observed by the chief in the Médio Tapajós had also affected the newborn calves in Marajó.

"Last summer, so many cattle died - so many - that some small ranchers almost lost everything. Everyone had losses. There were so many dead cattle that you could cross a stream from one side to the other - no exaggeration - stepping on the backs of dead animals, others nearly dying. To avoid sinking into the mud, you'd step on their backs to cross, there were so many, because everything had dried up, completely."

Source: DIEESE Archives

THE STRUGGLES

"We risk having our fishing gear taken away, or even being shot."

In the same region of Cachoeira do Arari, the endless rice plantation visible from the state highway PA-154, just outside the city, with the forest far off on the horizon, stands today as the most striking example of the conflicts that affect not only the productive capacity of local populations but also, and increasingly visibly, the environment itself.

A rice producer from the Raposa Serra do Sol Indigenous Land, in the state of Roraima, purchased vast areas in the region, taking over traditional and declining farms amid the surge in grain prices and the broader boom of agribusiness and globally traded commodities. To expand this producer's rice fields, which line the PA-154, the so-called "forest islands" - patches of trees that once provided shade for cattle and habitat for countless species - were cut down in just a few days using the brutal *correntão* method: two tractors connected by a massive chain that drags through the land, destroying everything in its path.

By June 2024, the rice plantation occupied a large stretch of the route leading to the rural areas visited in Cachoeira do Arari, and almost every time the road was traveled, an airplane - or sometimes a large drone - could be seen flying back and forth, spraying the crops.

In the quilombola community visited in the region, residents directly associate the vast rice fields with the disappearance of shrimp. *"When the rice grower uses poison to produce his rice, that poison goes back into the river, and the water comes here. We used to have a shrimp harvest in April and May - there was plenty of shrimp. Today, there's none left. Our fish population is decreasing too, all because of the pesticides that are used and end up back in the river,"* said a 27-year-old resident during a group discussion with seven representatives of the quilombola community on June 21.

At least three of those representatives - the current and former presidents of the local association - had received death threats in the past, during land conflicts with farmers who even set fire to houses in the quilombola community. These same types of conflicts, in the neighborhood of Choque - one of the pockets of poverty in the urban area of Cachoeira do Arari, where most residents depend on artisanal fishing - have also restricted the scope of these workers' activities. To secure water for their cattle, local farmers have been damming the river, which has been steadily reducing the productivity of the fishers, explained a 53-year-old man who had lived in the Choque neighborhood since he was 14, interviewed on June 18.

"Almost the entire area is off-limits now. We risk having our fishing gear taken away, or even being shot. It's the guards that the ranchers hire. There's a spot nearby where everyone used to fish - it was never restricted. But now we can't go there anymore; since last year, it's been forbidden".

On Saturday, September 14, the first of all the Munduruku villages visited was also the most remote, reached after a three-hour trip up the Tapajós River from a locality known as Buburé, located 80 kilometers from downtown Itaituba, along a dusty stretch of the Trans-Amazonian Highway (BR-230). Known as the country's illegal gold mining capital, Itaituba has also become part of the agribusiness logistics corridor with the port of Miritituba, a district of the city on the opposite bank of the Tapajós River, from where soy and other grains - transported by trucks from Brazil's Central-West region - are shipped to Santarém and then exported to markets around the world.

Riverbank in the Médio Tapajós region, within the Sawre Muybu Indigenous Land: "sand burps" created by mining - sandbanks that accumulate in parts of the river - September 2024
Source: DIEESE Archives

After the conversation in the first community visited, the next destination was the nearest village downstream, led by a woman - the *cacica* (female chief) - who offered the communal shelter attached to her home for DIEESE's team to spend their first night. That evening, in the hut where much of the community had gathered, the *cacica*, estimated to be around 68 years old according to her interpreter and daughter, aged 40, recounted both recent and past invasions. She spoke standing, in her own language, accompanied by expressive gestures and imitations of gunshots, engines, chainsaws, and trees falling, which punctuated her narrative. Interspersed in her speech in Munduruku were a few Portuguese words - *madeira* (wood), *madeireiro* (logger), and *garimpo* (gold mining).

"She's saying that when she first came here, things weren't like this, although mining was already happening. The mining has been going on for a long time. But logging and that sort of thing started more recently. As she said, her husband, when he was alive, used to hear the loggers at night, back here behind the village, cutting wood with chainsaws. She said you could even hear the cars - the sound of the vehicles speeding back there. That's what she said," translated her daughter.

WORK, PRODUCTS, AND SERVICES

Amid all the invasions, aggressions, hardships, and threats, there is still production, work, and income-generating potential in the areas visited - always with a focus on environmental preservation and the quality of life of local populations. In this sense, the categorization of activities proposed here follows the purpose of this study: to offer the broadest and most diverse possible overview of livelihoods and productive practices that coexist non-destructively with the Amazon forest, always from the perspective of the working class, which in this case includes the population of the territories - Indigenous, riverside, extractivist, or quilombola - engaged mostly in informal labor, paid by the day, and increasingly represented by self-employed extractivist workers. This group, whose trajectory has begun to intersect with contemporary discussions about entrepreneurship, reflects a growing segment of "self-employed entrepreneurs" in a society ever more rooted in the *theology of prosperity* - a belief system strongly reinforced by the spread of neo-Pentecostal churches, which have multiplied even in the most remote riverside communities visited.

From the abundance of açaí to a solitary attempt at more diverse production in harmony with the forest. From the excellence of local cheese to the struggles of small cattle ranchers increasingly squeezed by agribusiness. From the success of a collective flour production initiative to the efforts to implement and develop sustainable timber extraction amid widespread lawlessness and vulnerability surrounding illegal logging operations. Alongside these, there is also fishing - both in open waters and in small streams - and fish farming. All of these activities were observed in Marajó, whereas in the Médio Tapajós region, where illegal gold mining dominates and expands and where the logistics chain for soy and other grains exerts constant pressure, everything is considerably more difficult.

In the Baixo Arapiuns region, in the three communities visited, the main economic activity is community-based tourism, collectively organized and complemented by local handicrafts and other community productions. In Marajó, by contrast, tourism is seasonal, driven by traditional festivities - such as the Feast of Saint Sebastian–which boosts the local economy of Cachoeira do Arari, but only for about ten days each January.

Source: DIEESE Archives

TIMBER

“This carbon will stay trapped there in a better way. That’s what management is about”.

The first natural resource from Brazilian soil to be exploited following the arrival of the Portuguese, timber is discussed in this report from the perspective of the sustainable forest management project at the Arióca Pruanã Extractive Reserve (Resex), located in the municipality of Oeiras, in Marajó.

Following strict safety and environmental preservation standards, as explained by the project coordinator, the initiative aims to generate planned income without unnecessary environmental degradation. It therefore operates in direct contrast to the historical timber trade in this forested region of the archipelago, which dates back to the 1950s - when deforestation was unrestricted, with no concern for the future, and labor conditions were hazardous and unprotected, as they still are today in Marajó and in the other two areas visited in this fieldwork: Baixo Arapiuns and Médio Tapajós.

Beyond the long history of logging operations, the arrival of outsiders seeking to claim the land - often through deceit and manipulation - was another reason for the initial mistrust shown by the coordinator of the Arióca Pruanã Resex forest management project when first approached by the DIEESE team. He had become wary, too, of the impression that might be given by the timber yard, where a few logs lay piled here and there between the main workshop shed and a smaller one that housed the kitchen, its dirt floor shaded by the roof. It was there that the conversation took place, with two project coordinators, the president of the Resex’s parent association, a former president, and the team’s local guide in Curralinho, all to the background calls of the *japu* birds nesting in a nearby chestnut tree.

“They’re not looking at things from our side - they’re judging us from theirs. ‘Oh, don’t cut down trees,’ they say. But then someone sees a log being taken out and goes, ‘Ah, they’ve cut a tree down!’ But when this person goes to a store to buy something for his home -because he says he’s against the destruction of nature - what does he buy? A plastic chair, a metal one. Yet the same tree that was cut to make a wooden chair for him - within ten or fifteen years, that tree will grow back and they could make another piece of furniture. Now take that plastic chair - after a year or two it breaks. Can you turn it back into oil? Or that metal chair, when it rusts - can you send it back to the mine it came from? There comes a time when a tree stops growing. So what we do is remove a tree that’s already past its productive stage, one that’s capturing very little carbon, and we turn it

into a piece of furniture. In that way, the carbon stays trapped for longer and in a better form. That's what management is. You take one tree here, open a clearing, and come back the following year. The vegetation is already higher, and many new specimens of the same species have grown. They'll absorb carbon, they'll pull it back here again. But if you leave that tree to fall and rot in the forest, in two or three years it will have released all its carbon back into the atmosphere".

LIVESTOCK

"Some animals go five or six years before they see you again."

The cradle of cattle ranching in Brazil, Marajó - particularly in the Campo region - continues to rely on livestock as one of the main pillars of its economy, despite the advance of monocultures that, in Cachoeira do Arari, are clearly and extensively represented by rice plantations increasingly encroaching on pastureland. Much of the land in the municipality, however, remains in the hands of large cattle ranchers - primarily buffalo breeders. According to the 2023 Municipal Livestock Survey conducted by the IBGE, three of the five Brazilian municipalities with the largest buffalo herds are located in Marajó. Chaves and Soure rank first and second, with 237,000 and 105,000 head of cattle, respectively. Cachoeira do Arari, with 55,800 head, holds the fifth-largest buffalo herd in the country[4]. A herd raised in the traditional style of extensive cattle ranching, on large farms that may have a few formal employees - but very few, usually six or seven at most - even on the largest properties, where workers typically earn the minimum wage.

The livestock work observed during this field research was family-based, carried out by small producers who have no permanent employees and work alongside temporary helpers, paid by the day. Like small ranchers, large landowners also hire day laborers when extra hands are needed for branding or vaccinating cattle. Another time when these small producers hire workers is when they invest in improving their operations - such as planting pasture grass, as one of the interviewees in Cachoeira do Arari was doing. In June 2024, these producers were paying R$70 per day, plus meals, for a typical 10-hour workday, with a one- or two-hour break for lunch.

All these investments aimed to reduce dependence on the so-called "no man's lands," the pastures belonging to large ranchers who rent out portions of their estates to smaller producers, like the small cattleman interviewed in rural Cachoeira do Arari on June 18. Owner of 17 hectares of land, he, like nearly all producers of his size in the region, relied on the pastures of large ranchers to feed his herd of about 80 head of cattle.

4. DIEESE. *Family Farming in Açaí Production in Igarapé-Miri: Living and Working Conditions, Production, Marketing, and Cooperativism.* DIEESE-MTE Cooperation Agreement No. 2/2023, October 2024.

"Only the white cattle stay here, and the horses. Most of the buffalo go; only a few remain. There are maybe three breeding cows left, and two uncastrated males. It's practically a year without seeing them, because I leave them there in January and sometimes only get them back at the end of December. When the dry season comes, no one takes responsibility for anything. If you have 50 head, you might come back with 30 - because 20 die; and some that didn't die still haven't been returned, because they've wandered into other farms, looking for food, and it's hard to get them back. Some you recover, others you don't. Some animals go five or six years before they see you again - and by then they already have a whole family, because the others don't even bother branding them. And that's another thing - they claim the calves as payment for the pasture the animal's been grazing on."

CHEESE

"The small farmer's income comes from cheese, because cheese is highly valued."

At the end of the day spent talking with two small cattle ranchers in Cachoeira do Arari - when the sun had already set and streaks of pink colored the horizon of the flat plains with their sparse vegetation, typical of the Marajó grasslands, where the rice fields had not yet reached - there finally came the opportunity to taste, for the first time, the main product driving all local milk production: the geographically indicated and officially recognized Marajó buffalo cheese. While large ranchers focus on beef cattle, small producers make their living from dairy herds, catering to the growing demand for cheese production.

"*The small farmer can't rely on selling animals all the time, so his income comes from cheese - because cheese is highly valued, and every day it brings in something*," explained a researcher from Embrapa in a video interview. The head of Emater in Cachoeira do Arari confirmed this on the same morning of June 18, during the visits with the small ranchers and the cheese tasting: "*The price of milk here is around R$ 4.20 to R$ 4.50 per liter. The milk market here is excellent because Cachoeira cheese is among the highest-quality cheeses in the region. Wherever this cheese arrives, it stands out—it's extremely flavorful*."

The texture, taste, and mouthfeel of the Marajó buffalo cheese truly met - or even surpassed - all expectations. Served fresh, right after being made by the only local producer holding the Geographical Indication (GI) seal from Brazil's National Institute of Industrial Property (INPI), the cheese also benefited from its still-warm freshness. Later that evening,

after some time in the refrigerator, it remained just as delicious. On the porch of his house, next to his new 4x4 pickup truck, the producer - who had started years earlier selling cheese by bicycle, then by motorcycle, gradually expanding - explained that, in addition to raising an average of 300 pigs per year, he kept 40 buffalo cows, which supplied 40% of the milk needed for his production.

Despite his success and ownership of land and livestock, he continues to follow the same daily routine of artisanal cheesemaking, which requires starting work at 9 or 10 p.m. and continuing until 3 or 4 a.m. - after which he sleeps only until 6 a.m. That is the time needed to produce Marajó buffalo cheese - not necessarily working through the entire night, but always keeping watch over the right moment for curdling, skimming, and salting, among other steps. This producer, however, is an exception among local cheesemakers - most work informally, producing cheese seasonally and in tune with the rhythms of nature. This dependence on natural cycles, where each season brings a different activity, also contributes to the informal nature of cheese production in the region.

MANIOC FLOUR

"We plant maniva and make flour just for our own consumption - we don't sell it."

The landscape had shifted from the monotonous, deforested rice fields to the vast flooded plains typical of the Campo do Marajó region, with its scattered forest islands, by the time the team reached the first of two *farinha* (manioc flour) houses belonging to the workers' collective interviewed on the morning of June 21. The group, which once had 25 members and was now down to 13, still had a guaranteed market for its entire production - without having to leave the region. This had already been mentioned two days earlier by the Secretary of Agriculture and Food Supply of Cachoeira do Arari.

"The local markets around here pay in advance. They buy before the flour is even ready. They do that because they know that between flour coming from Belém and ours, which they call fresh flour made right here, ours is much better quality."

The quality of the flour from the first Munduruku village visited in September in the Médio Tapajós region, within the municipality of Itaituba, was also guaranteed by its chief: *"The flour we make has no mixture. The white man's flour at the market looks nice because it's mixed. Ours isn't - it's pure."*

Despite this, and even with the support of the Pariri Indigenous Association (AIP), which had equipped the community's *farinha* house with

Source: DIEESE Archives

two well-built circular ovens, steel trays, and all the necessary tools, the Indigenous community was unable to sell its production. All the flour was consumed locally, as there was no external market for it in the region.

"We plant maniva and make flour just for our own consumption - we don't sell it. The miners might buy one or two cans, but we don't make enough to sell much. There are riverside dwellers here; sometimes we try to trade the flour with them, but they often don't buy it. That's why we don't have larger-scale production - we don't have any support."

With a steady clientele, the collective in the Campo do Marajó region stood apart from those who worked individually, especially in the *roçado* (manioc fields). One of the members compared the results: "*To clear a roçado the size of ours, someone working alone would take two to three weeks. These 13 of us can clear two fields that size in a single day."* In this collective, the workers head out to clear the fields together around 7 a.m., all wearing boots and long pants to avoid snake bites - the most common accident. The workday lasts until about 5 p.m., with two breaks for meals: a shorter one in the morning and a longer lunch break, usually from 11 or 11:30 a.m. to 2 p.m., due to the strong midday sun.

From preparing the field to planting and then harvesting the cassava - to be grated and toasted into flour - the process is arduous and time-consuming. It involves long and varied workdays, but, as seen in the community visited in Marajó, it can be more effective when carried out collectively. In the Indigenous communities of the Middle Tapajós, where

most of everyone's daily labor involves flour production, collective work is also organized in task forces (mutirões) for clearing, planting, and construction, such as the building of flour houses.

In the community visited in the Sawre Ba'pim Indigenous Land (TI), near the Trans-Amazonian Highway and accessible by road from Itaituba, all residents move together for a month to another area, about three hours away, in search of more space and more fertile soil for planting maniva (cassava cuttings).

PERMACULTURE

"It's about planting all kinds of fruits, trees - everything that provides nourishment."

The forest was dense, pierced here and there by shafts of sunlight that, around 9 a.m., covered far less ground than the shade and hinted at patches of mud or water along the narrow trail - obstacles best avoided, since the less sun, the easier the walk after eight or ten minutes from the banks of the Pracuúba Grande River. Compared to the symphonies of dawn and dusk, the forest's sounds at that hour were nearly silent - perhaps a distant rustling of insects, maybe birds, but nothing louder than the crunch of footsteps on the dry leaves carpeting the trail. After about 18 or 19 minutes of walking, the site appeared where the former leader of the Rural Workers' Union of São Sebastião da Boa Vista worked almost entirely on his own.

"Permaculture means permanent agriculture. You cultivate and work. They came up with this because they saw how fake food has become. The project is about planting all kinds of fruits and trees - everything that nourishes. It's what we call healthy food," he explained, summarizing in his own words the socio-environmental science that integrates scientific and traditional knowledge for the planning of self-sustaining territories, with diversified production in harmony with nature - exactly what he was practicing on the land inherited from his father, a man from Ceará who had migrated to the Amazon in the 1930s during the rubber boom.

For Indigenous peoples, cultivating as many edible species as possible is a way of life. An example of this is the transplantation of plants and trees described by the chief of the first village visited, who had moved with his family from the Upper to the Middle Tapajós, bringing with them seedlings and seeds of mango, *murici*, *ingá*, and orange trees. "All the plants here, we brought from our old village. There was nothing here - only *babaçu* palms and bush."

This type of diversified cultivation is often hidden in daily household routines, and the same holds true for the quilombola community in the Campo do Marajó region, where income comes mainly from fishing and, above all, from açaí. The wide variety of subsistence crops, because they are not sold and are grown for daily use near the home, often go unaccounted for as income - even though the savings from not having to buy food effectively represent a form of income, as one of the community leaders explained:

"On my plot I have a mix - a bit of everything: cacao, lemon, pupunha. If we add it all up - say, a bunch of bananas we cut here - how much would a dozen cost at the market? How much does a liter of açaí sell for? Do the math. How much did your lunch cost? If you didn't have it here, wouldn't you have to spend that money? So that's income too".

AÇAÍ

"Working with açaí is more profitable than being a teacher."

Upon arriving at the community where the DIEESE team would spend the night - located within the Terra Grande Pracuúba Extractive Reserve, in the forested area of Marajó, late in the afternoon of June 26 - in the section of the reserve that lies within São Sebastião da Boa Vista, a former president of the reserve's parent association received them at his home. His house stood at the far end of a wooden walkway of planks joined together over stilts above a narrow stretch of river, partly shaded by the forest canopy.

A History graduate from the Federal University of Pará (UFPA), he explained why he had left teaching. He had taught for 12 years at the elementary school inside the reserve, not far from his home, but eventually decided to give up his position and career for the sake of açaí.

"I have a degree in History from UFPA. The school is right nearby, but I gave up my job for socioeconomic reasons. I realized that working with açaí is more profitable than being a teacher. It's been two years since I left the school and started working with açaí - and it's been going well, thank God."

As shown in the study conducted by DIEESE and submitted to the Ministry of Labor and Employment (MTE) in October 2024[5], the process by which açaí evolved "from a traditional food in Indigenous cuisine to a product within a global value chain, with the commercial dynamics of a commodity (even if not strictly one), involving multiple social actors (producers, intermediaries, middlemen, industry, cooperatives, local trade, exporters, among others)" was "relatively rapid." This shift, driven by the rising market value of the fruit, has reshaped labor relations at every stage of the value chain, which, according to the same study, can be divided

5. *Working Conditions, Production, Marketing, and Cooperativism. DIEESE-MTE Cooperation Agreement No. 2/2023, October 2024*

The Amazon's "black gold," ready to be transported from the Terra Grande Pracuúba Extractive Reserve community to middlemen who resell the product.
Source: DIEESE Archives

into four main components: (1) agro-extractive production of the fruit; (2) distribution and commercialization; (3) processing; and (4) commercialization of the final product, usually as frozen pulp or juice.

At the base of this chain is the *peconheiro* - the worker who harvests the fruit high up in the açaí palms. To do this, the worker uses a *peconha*, a looped strap tied around the feet and made from different materials (such as palm leaves, raffia sacks, or rope), which provides traction for climbing the smooth trunk. The rest relies entirely on physical strength—constant stretching and bending of arms and legs to climb, harvest, descend, and climb again throughout the day. For this reason, it is predominantly male work. It is rare to find women among these workers, who perform this labor without any protective equipment.

In Marajó, the physical demands of the work are among the main reasons why the *meia* system - common in small-scale family agriculture - has become widespread, especially during harvest seasons. In this arrangement, the worker keeps half of what he collects, while the landowner receives the other half. Working hours are generally shorter than in most other activities, not only because the labor is more intense, but also because of the complex logistics required to preserve the quality of the fruit until it reaches buyers. In the quilombola community of Marajó, for example, the collection boat passes around 11 a.m., marking the end of the workday. In the Terra Grande Pracuúba Extractive Reserve, working hours are similar, usually from 7 a.m. to noon.

Within the *meia* system, income is individualized and depends on each worker's skill and speed. The more a worker collects, the more he earns. According to the estimates provided by *peconheiros* and former *peconheiros* interviewed, an experienced and highly efficient worker collecting açaí from 7 a.m. to 1 p.m. can earn around R$600 per day. Another reported figure, also among the most efficient workers, was an income of roughly R$2,000 per week.

FISHING

“The trade is aging - and disappearing.”

Whether due to natural causes or to invasion and contamination, fishing in the area visited in the Médio Tapajós is minimal - practiced mainly for subsistence. In contrast, in the Marajó Archipelago, even with the steady expansion of açaí cultivation in every direction, fishing remains the main economic activity in municipalities such as Cachoeira do Arari. Here, artisanal fishing is divided into two types: open-sea fishing, which is more costly but more profitable, and inland fishing in rivers and lagoons, which is riskier and mainly carried out by poorer populations living in pockets of poverty. Among all the occupational groups discussed in this report, those at the very bottom of the social pyramid in the areas visited are the river and lake fishers - who, in practice, often fish in flooded, shallow, forest-covered areas, in small streams (*igarapés*) that are sometimes dammed by ranches. They face the risk of electric shocks or stingray injuries, earning the equivalent of less than one minimum wage per month.

These fishers typically begin their workday around 2 p.m. and return at 7 a.m. the following morning. They go out in pairs or trios, usually from the same family, and may take up to two hours to reach the fishing site. Their schedule includes a short rest of one or two hours midway through the night before resuming fishing around 11 p.m. until 1 or 2 a.m. They rest again for about two hours before hauling in the nets around 4 a.m. Fishing in flooded areas forces them to leave the boat and wade through the water, exposing themselves to the risk of electric eel shocks (*poraquê*) or stingray stings.

The monthly income of these artisanal fishers working in flooded areas is around R$1,100, and their catch is too small to compete for customers at the market. Their fish are sold on the streets or purchased by *geleiras* - intermediary boats equipped with iceboxes that serve as both buyers and resellers. These *geleiras* are often run by middlemen but sometimes by the fishers themselves, who spend two to three days at sea, fishing and storing their own catch along with fish bought from other boats, returning as soon as the vessel’s storage capacity is full.

Deep-sea artisanal fishers spend even longer at sea - around 15 days per trip. Their fish are more valuable, but the harshness of the work, under relentless sun and rain, has discouraged younger generations from joining the trade. As a result, the fishing workforce is aging, with many suffering from health issues, mostly skin diseases and back pain, according to the Secretary of Fisheries and Aquaculture of Cachoeira do Arari, himself a former deep-sea fisherman.

Fisherman from the Choque neighborhood carrying his gear after another day of work. Source: DIEESE Archives

“The younger generation - they don’t want to go out to sea, or to the lakes and rivers, to fish. Some still go because their fathers take them, but it’s not out of their own desire. They look at their fathers - men of 40 or 50 - already looking old from all the sun and rain, with health problems everywhere, aches and pains from exposure and hard labor. All that takes a toll on a person’s health. So today’s youth don’t want to be tomorrow’s fishermen, and because of that, the trade is aging - and disappearing.”

AQUACULTURE

“We realized that fish farming was feasible – and it ensured food security.”

Given the lack of prospects, he himself pointed out for the fishing sector, the Secretary of Fisheries and Aquaculture of Cachoeira do Arari spoke about the project the Secretariat had been carrying out, though still in its early stages. “We are changing our focus. It’s not about abandoning fishing but about working with fish farming. Today, the Fisheries Secretariat has more than 30 producers engaged in fish farming, looking at it on a large scale. It’s already a necessity.”

With its fine, white sand beaches that attract tourists, the Arapiuns River - located on the border of the municipality of Santarém - has never had an abundance of fish. One of the managers of a community-based tourism enterprise in the second community visited in the Tapajós-Arapiuns Extractive Reserve (Resex) explained the reason: *“Our river has beautiful beaches and very clear water, but it doesn’t have much fish. And now, with the riverbanks inhabited, there’s even less fish for the local population. That’s when Ceplac* (the Executive Commission of the Cocoa Farming Plan, linked to the Ministry of Agriculture and Fisheries[6]*), which is the National Cocoa Assistance Commission, commis-*

6. Available at: https://www.gov.br/agricultura/pt-br/assuntos/ceplac

sioned a study to answer the question: why doesn't the Arapiuns River have fish? The results showed that the river, as it is, with its wide beaches, has its natural riverbed much deeper. There is no plankton, no mud - it's all sand. And without that, there's nothing for the fish to eat."

Encouraged by a project from Ceplac itself, she helped introduce fish farming, which is now part of the community's tourism initiative. *"The whole community got involved and worked on the project, and we found that fish management was feasible and could ensure food security."* Despite such initiatives, which have achieved some success, fish farming in the areas visited is still at an early stage, where those who venture into the activity must rely on other sources of income to sustain their investment.

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PAINTING AND HANDICRAFT

"It's all natural. The colors come from the leaves, fruits, and roots we use."

Beyond the beach - hardly inviting for swimming due to the shallow, plant-filled water and the high risk of stingray stings - the community in the Lower Arapiuns region that works with tucumã fiber crafts within the Lago Grande Agroextractive Settlement Project (PAE) appeared remarkably well-organized, with houses not only painted but adorned with artistic style and signed walls. It was the result of an initiative by a visual artist who gathered other artists to spend some time painting the houses, as later explained during a conversation under the thatched roof of the open-air workshop, the main space where the group *Tucumarte* produces its baskets, lamps, and other crafts.

Actions like this one, led by these visual artists, are yet another outcome of the community's integration into the network of community-based tourism in the Lower Arapiuns, coordinated by the cooperative *Turiarte* with the support of *Projeto Saúde e Alegria* (PSA), an established institution active in western Pará since its creation in 1987[7]. This involvement has, in some ways, transformed the community's way of life. Farming, hunting, and fishing continue as they were practiced by the elders, but handicrafts have become the community's main source of income, according to the project's local coordinator. "*We live here from the fields, from fishing, but our main source of income is handicrafts. We, the women who are part of this movement, I'm sure we're all happy, because from this work we support our families - we buy clothes, shoes, food, and pay our expenses. It's all natural. The colors come from the leaves, fruits, and roots we use, and that makes all the difference in our craftwork.*"

7. The Projeto Saúde e Alegria (PSA) is a non-profit civil initiative that began with a focus on public health and sanitation projects and today, as described on its website (https://saudeealegria.org.br/), aims to "promote and support participatory processes of integrated and sustainable community development that contribute demonstrably to improving public policies, quality of life, and the exercise of citizenship among the populations it serves."

The manual work of painting and crafting can be carried out almost mechanically - produced by the dozens to meet orders and follow work schedules, as in this community within the Lago Grande Settlement Project - but it can also take on a different character, with the pace set by personal motivation or inspiration, as seen in the individual work of a painter and craftsman from São Sebastião da Boa Vista, in Marajó. In the same town, women from another handicraft collective still had to combine their art with fishing - an activity they had always practiced and continued to do, as the group's founder explained: "*I'm a fisherwoman. I say that when I can depend solely on the crafts, I'll leave fishing. And the other women too - I see the difficulty, because they're all fisherwomen, they still go fishing. The fiber is just a complement to help out. If we had proper infrastructure, funding, a store, we wouldn't need to keep fishing. But the girls there are still at it.*"

Source: DIEESE Archives

COMMUNITY-BASED TOURISM

“The attraction is the community, the culture, the way of life.”

It didn’t take long between lying down in the hammock after lunch - grilled tucunaré fish - and falling asleep. A brief, refreshing, and much-needed nap under the thatched roof of the redário (hammock shelter), closer to the river breeze than the larger dining and meeting hall, where the plenary discussion had taken place that morning, on September 12, in the first community visited within the Tapajós-Arapiuns Extractive Reserve (Resex).

That short experience - just over three hours there - combined with the purchase of two types of honey from the first stall seen upon arriving from the beach, one made by canudo-amarela bees and the other from an unidentified species (both later tasted and highly approved), was enough to understand the community’s tourism potential. With the stunning beauty of the beaches, it was easy to see why the community chose to invest heavily in tourism - an activity that, in the Turiarte cooperative, began alongside handicrafts, as explained by a leader of the Arapium People who accompanied the DIEESE team in the Lower Arapiuns region.“*They came together, both of them, because we had this discussion about combining tourism with handicrafts, to make them complement each other. Today, the cooperative has these two products as its main strengths – tourism and handicrafts – and the two are interconnected*”.

Community-based tourism is the term used to describe a collective tourism initiative integrated into the daily life of an entire community. In a video interview, a coordinator from *Projeto Saúde e Alegria* who helped create some of the projects visited explained the terminology most commonly used and the differences between community-based and individual tourism.

“*The term that caught on a few years ago is community-based tourism (TBC), which is now even included in public policies and has been gaining traction at the federal and interstate levels. I don’t particularly like the acronym, because TBC reminds me of tuberculosis (in Portuguese),*” he joked, “*but what we defend today is that there are many tourism experiences in communities that are individual initiatives. Community-based tourism is the one that has collective organization and collective benefits for the community. There are individual roles - the cook who works at the communal lodge, the guide - but the tourism activity as a whole is managed by the community. When tourists arrive, they walk around the whole community - into the forest, the lake, the beach - and interact with the community’s way of life as a whole. It can’t be a benefit isolated to one person. The attraction is the community itself; it’s about sharing a col-*

Kiosks for receiving tourists during the famous Piracaia feast, on a beach along the Arapiuns River
Source: DIEESE Archives

lective resource - the culture, the community's way of life. A community where everyone works only for themselves, without a collective management strategy or dynamic, is no longer doing community-based tourism."

The *pleasure of working* was even mentioned as one of the advantages of community-based tourism in the first community visited within the Tapajós-Arapiuns Extractive Reserve (Resex). That pleasure is easily justified by recalling the physically demanding and less profitable work carried out before tourism - much harder than the cooperative work within TBC - as explained by the president of the local residents' association:

"*Today we can do an activity here for an hour and earn 50 or 100 reais. Manual labor used to mean an entire day of heavy work for a daily wage of 40 reais. Nowadays, a lot of people suffer from herniated discs, rheumatism, all sorts of illnesses caused by that kind of hard labor. (Tourism) is lighter work, and even more enjoyable - showing visitors our culture, how we make flour, taking them on tours.*"

FESTIVALS, HISTORY, FOOD, AND DRINKS

"If we don't value our culture, others may take it away from us."

In Cachoeira do Arari, there is no more important celebration than the Feast of Saint Sebastian, which fills the city from January 10 to 20, the saint's day. During the rest of the year, the 20th of each month is marked by a *ladainha* (a sung litany) at the Brotherhood of the Devotees of the Glorious Saint Sebastian (*Irmandade Devotos do Glorioso São Sebastião*, IDGSS). On the afternoon of June 20, in the Brotherhood's meeting room before the saint's image, the last of these sung prayers was to take place before the group began preparing for their six-month pilgrimage through the municipality's rural areas, just 23 days away. "We're leaving on July 13. Normally it's on the 10th, but this year it'll be on the 13th," said one of the *foliões* (devotees), a 31-year-old general coordinator of the IDGSS and *viola* player who began joining the pilgrimages at age 17.

Five *foliões* set out on horseback carrying the image of Saint Sebastian, spending about six months traveling through the rural areas of Cachoeira do Arari. They are cultural workers - guardians of Brazil's intangible heritage - following a very specific work routine: daily travel and performance, earning a modest monthly stipend equivalent to one minimum wage, without any formal protection, solely to preserve a tradition that has endured for three centuries.

According to estimates, the Feast of Saint Sebastian brings about 30,000 additional people to Cachoeira do Arari each January, generating income for workers such as the cook who makes the traditional *frito do vaqueiro*, one of the foods directly linked to the celebration. In the Brotherhood's meeting room, standing before the saint's image and preparing to play his *viola* for the final June *ladainha* before the *foliões*' departure, the general coordinator reflected on the traditional shirts with *Marajoara* designs, invoking the example of Father Giovanni Gallo - the Italian priest, museologist, archaeologist, and photographer who founded what would become the Marajó Museum in Cachoeira do Arari, today a reference in *Marajoara* civilization artifacts dating back to around 400 A.D. He used the example to stress the importance of valuing and preserving one's own culture as the surest way never to lose it.

"The Marajoara design was practically rooted here in the municipality by Father Giovanni Gallo. We need to take inspiration from that because sometimes we don't value our own culture, but others do. We have to be careful not to let people take our culture away - because if we don't give it value, others may take it, and we'll be left with nothing".

When the preservation of the Amazon - spanning Brazil, eight other countries, and one French overseas territory - is being discussed worldwide as one of the essential conditions for the planet's survival, a principle expressed by several interviewees for this report[8], whether in the Fields or Forests of Marajó, in the Lower Arapiuns, or in the Middle Tapajós, was that protecting the environment first requires ensuring fair working and living conditions for its people. In the case of the Amazon, that means the Indigenous, *quilombola*, riverside, and extractive populations who live and work in the region – in artisanal fishing, family farming, extractive activities, or even in highly specific forms of labor, such as the *ladainha* pilgrims, guardians of cultural preservation and Brazil's intangible heritage.

8. The Amazon rainforest extends across Brazil, Bolivia, Peru, Colombia, Ecuador, Guyana, Suriname, Venezuela, and French Guiana.

"Climate crisis, invasion, and deforestation converge in the same cycle of threat to labor."

“The voices of the forest call for public policies, credit, technical assistance, and recognition.”

Source: DIEESE Archives

TERRITORIAL DEMANDS AND POLICY RECOMMENDATIONS

The most frequently mentioned and considered essential demand – the one upon which all others depend – was land regularization. The demarcation of Indigenous lands, titling of *quilombola* territories, and definitive regularization of reserves and settlements constitute the primary demand of the populations living in these territories, but this must be accompanied by protection. There is no point in demarcating or legalizing land if it continues to be invaded. Demands for technical assistance, financial support, and access to credit were also nearly universal, present in almost every interview. Based on these conversations and supported by bibliographic review, it was possible to systematize some additional suggestions - beyond those already cited - to help guide public policy. The following recommendations are highlighted here because they emerged directly from the interlocutors themselves, from those who were born, live, and work in these territories:

Respect and appreciation for Indigenous peoples, local communities, and family farming - Traditional cultures and knowledge contribute to the sustainable use of biological resources. Such knowledge should guide science and technological innovation.

Debureaucratization - Greater efficiency from the entities responsible for protecting territories regarding authorizations and regulations, to allow residents more freedom to use their lands, work, and generate income, often in harmony with nature’s rhythms. An example of what could improve was observed in the *Resex Terra Grande Pracuúba*, in Marajó, where large quantities of fallen wood are lost each year due to flooding. Residents must request authorization from ICMBio to saw wood beyond subsistence levels, but according to one interviewee, such authorization never arrives before the floods - only after the logs have already been carried away by the rivers.

Basic services - Health and education as top priorities, with investment in basic sanitation and ensuring schools within communities. These were

universal demands across all surveyed regions, voiced by everyone interviewed for this report, in all accessed territories.

Vertical integration – Support for investments in machinery and infrastructure to add value to products. This was a recurring demand across multiple sectors, such as the timber industry (to increase gains across all stages up to furniture sales), cassava flour (to expand and diversify production by making cookies, for example), and *açaí* (to process and sell the fruit as pulp).

More attractive economic opportunities – Creation of economic alternatives capable of competing with illegal activities that destroy ecosystems and increase violence, especially land grabbing and illegal logging and gold mining.

Sustainable infrastructure for transport, energy, and telecommunications – The Amazon region still lacks basic infrastructure. It must be developed compatibly with the conservation of terrestrial and aquatic ecosystems, respecting territorial specificities and meeting the priority needs of the Indigenous, *quilombola*, and family-farming economies.

Aid and benefits – Maintenance and expansion of social programs such as *Bolsa Família* and insurance schemes like the fishing off-season (*defeso*), to guarantee a minimum income in areas where challenges are many and income generation is difficult. It would be advisable to design rules that avoid imbalances between professional categories and do not discourage formal employment, as well as to encourage Payment for Environmental Services (PSA) programs - such as *Bolsa Verde* - provided they do not restrict the practices and livelihoods of forest-dwelling populations.

Central role of women – All bioeconomy projects and plans - and all aspects of life and work - should take into account the central role played by women. It is crucial to recognize their voice, participation, and influence within families, politics, culture, and across every sector of society.

Agrarian reform in livestock farming – Acquisition of idle farms by the federal government to provide small cattle ranchers with pastures they currently rent, thereby preventing deforestation driven by the expansion of grain cultivation over natural grasslands.

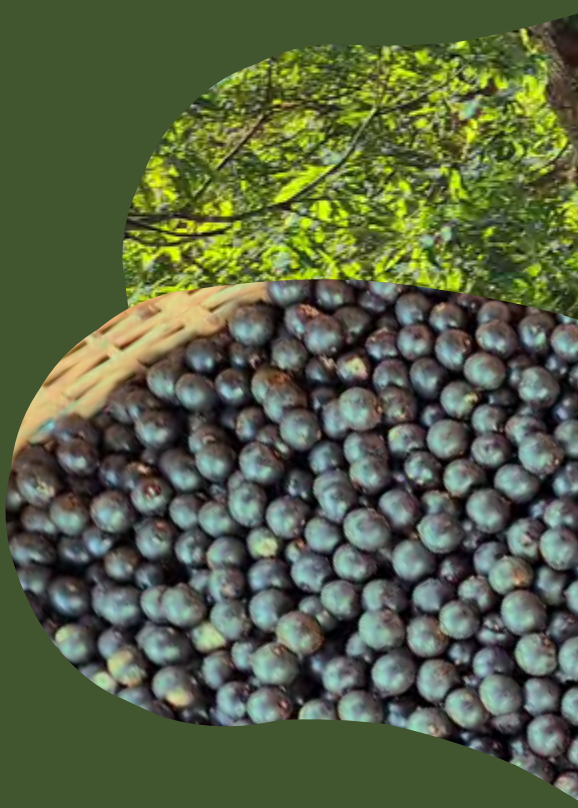
Listening to peoples and communities – Mandatory, comprehensive, and transparent consultation with local peoples and communities before any construction or exploitation project, whether public or private. Full and unconditional respect must be given to ILO Convention 169, whose Article 6 states that governments must conduct free, prior, and informed consultation whenever any policy, project, or program - public or private - may affect traditional peoples.

Public policies must prioritize workers – The climate emergency - with excess or lack of rainfall, floods or droughts, wildfires or rising temperatures - directly affects workers the most, as it increases the cost of living. The basic food basket becomes more expensive, making it harder for workers to afford it.

“A fair bioeconomy is born from the dialogue between labor, territory, and nature.”

“The Amazon is not merely a backdrop –
it is a subject of the future we must build.”

Source: DIEESE Archives



MINISTÉRIO DO TRABALHO E EMPREGO

GOVERNO DO BRASIL
DO LADO DO POVO BRASILEIRO

DIEESE
DEPARTAMENTO INTERSINDICAL DE ESTATÍSTICA E ESTUDOS SOCIOECONÔMICOS