

**Riverside Communities: socio-spatial aspects along the Tapajós River**

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## SUMMARY

This essay presents a reflection on the negative consequences that have been affecting riverside communities on the Tapajós River resulting from the transport of commodities on barges. Faced with situations that are as or more harmful to the survival of the riverside population, space was opened to analyze other harmful actions that are substantially affecting the indigenous population, due to the increase in the movement of vessels to meet the demand of agribusiness which, in some way, encourages the criminal transport of wood, resulting from illegal deforestation and contributes to the flow of gold, produced mainly by illegal mining, in addition to the drug trafficking movement, facilitated by streams that disorient control systems and transform the Amazon basin into a transshipment area to give flow to cocaine produced in neighboring countries. The dichotomy that exists today in the context of Amazonian territorial planning justifies the interest in researching how these riverside communities have survived, circumstantially removed from their habitat in socioeconomic conditions that are not favorable to the adaptations imposed by capital. Thus, it is being discussed, objectively, human actions aimed at mitigating the damage that has been caused in the areas covered by Lower Tapajós.

KEYWORDS: Riverside communities; Anthropogenic actions; Lower Tapajós.

## 1. INTRODUCTION

The creation of the new route for the flow of agricultural production across the Pacific Ocean through the integration of modes called "Center North Corridor", was structured in 2003, when work began on the commodity transshipment stations and the demarcation of the route by the river Tapajós, which interconnected the BR-163<sup>1</sup>, BR-230<sup>2</sup> highways with the Tapajós<sup>3</sup> and Amazonas<sup>4</sup> rivers.

The creation of this new mode considerably expanded the export of grains, raising a new question: how will the indigenous population that until then survived from fishing and planting fields for their own sustenance be living? The companies involved in the new modal project are much more interested in saving time and capital than in mitigating difficulties that may directly affect the daily lives of riverside communities. Parallel to this socioeconomic metamorphosis, the real estate sector reacted quickly, overvaluing the spaces of interest for companies that outlined new capital guidelines in the region, causing enormous speculation. The natural consequence was the mass

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<sup>1</sup>BR-163 or Road Cuiabá-Santarém, connects the capital of Mato Grosso, Cuiabá, to Santarém, in Pará. The road crosses one of the country's richest regions in terms of natural resources and economic potential, being marked by the presence of important Brazilian biomes, such as the Amazon Forest and the Cerrado and transition areas between them, in addition to important river basins, such as the Amazon, Xingu and Teles Pires-Tapajós.

<sup>2</sup> Also known as Transamazônica.

<sup>3</sup> The Tapajós River is a river that originates in the state of Mato Grosso, flows through part of the state of Pará and flows into the Amazon River, still in the state of Pará.

<sup>4</sup> The Amazon River originates in southern Peru and runs through northern South America through the Amazon rainforest and empties into the Atlantic Ocean.

reterritorialization of indigenous communities, to make way for new ventures that support the modal.

Thus, a section focused on the area covered by the Central North Corridor was created, Lower Tapajós region, with the intention of showing the relevance of research on anthropogenic actions in an important part of the Legal Amazon, a territory that occupies 5,217,423 km<sup>2</sup>, or the equivalent of 61% of the Brazilian territory. The route begins in the northern mesoregion of Mato Grosso, crosses the state of Pará and ends at the port of Santana, in the municipality of Macapá (AP). Compared to the traditional route, that is, to the ports in the south and southeast regions, it saves more than 5,000 km in commodity transportation. This difference encouraged several agribusiness trading companies to invest millions of dollars in the construction project of ETCs (Transshipment Stations), without paying attention to the changes caused by the project in geography, socioeconomic and ecological changes throughout the region.

Once these changes have been decoded, threats to traditional cultures are also perceived because, as Becker (2009) states:

It is impossible, today, more than ever, to understand what is happening in a place and, consequently, to design and implement appropriate public policies, without considering the conflicting interests and actions of different geographic scales. At a global level, the Amazon is a frontier perceived as a space to be preserved for the survival of the planet. In this perception, legitimate environmental interests coexist as well as economic and geopolitical interests, expressed respectively in a process of commodification of nature and appropriation of States' decision-making power over the use of territory (BECKER, 2009: 21).

Although the Amazon is a frontier perceived as a space to be preserved for the survival of the planet, as stated by Becker (2009), some consolidated cities in the Amazon have witnessed an above-average increase in demographic growth rates in recent decades, giving rise to an enormous increase in impermeable areas. Cities like Itaituba-PA testify the implementation of numerous subdivisions on urban outskirts, with low population growth rates.

In the regional geographic context, it appears that the process of occupation of Lower Tapajós is very similar to the process of occupation that took place in the state of Mato Grosso between the 1960s and 1970s and, apparently, is intertwined with the national policy of occupation of the Amazon region.

Theoretically, the means that justify the ends, as Machiavelli would say, are the same means that developed the cities in Mato Grosso and continue the expansion of agribusiness that has been implemented in Lower Tapajós, where the reterritorialization proposals are very similar to those that pushed the pioneers for the north and northwest regions of the state. The public policies applied to the region, whose “arrangements” put into question the proposals of several projects in the last 60 years, ranged from strategies approved by the Sustainable Regional Development Plan for the Area of Influence of BR-163 (2006), until the Urban Density Regulations Frames, in the different regions and cities of this territory, published by (IPEA, 2009).

In Mato Grosso, the geographic rationalization of the production process depends on market demands in relation to production. This is when, according to Harvey (2006), “the inherent tendency towards the concentration of capital requires technological innovation to sustain it”. Geopolitically, this trend supports the evaluation of this territory as a space that

consolidated the technical capacity for transforming soil and seeds, while reduced the sociopolitical pressure exerted by the lack of land in southern Brazil. From then on, the dynamics that guided the development of the states in the center-west and north of the country began. Parallel to socioeconomic demands, it was a region whose demographic rates grew above the national average. As Joaroni Neto (2007, p.30) states, the population of Amazon increased tenfold in forty years, going from two to twenty million inhabitants, generating a society aggregated into communities that often sought to adapt to the Amazonian world due to lack of resources. to return to the original location.

This context allows to draw an analogy with the theory of Darcy Ribeiro (2001) who classifies them as transplanted societies, when referring to the typologies of sociocultural formations in the Amazon. If we compare the demographic data of the urban network and the regional economy within the scope of the expansion of the Amazon frontier, we will realize that the transplanted societies, the migrants from the center-south, were settled in the Amazon states as victims of the arc of deforestation in Mato Grosso and southern of Pará, areas with enormous deforestation.

## **2 OBJECTIVES**

This research aimed to analyze the socio-environmental metamorphosis of the riverside areas and communities of Lower Tapajós, nearby villages and indigenous villages, seeking to understand the region and the challenges faced, based on works by authors focused on Amazonian themes.

## **3 METHODOLOGY**

The search involved riverside communities and continued the research project of the thesis Migration and Modernization in Medium Cities Legal Amazon: Area of Coverage of BR-163 (RAVACHE, 2013), which analyzed, from the same perspective, the less favored communities that live in the area covered by BR-163, aiming to analyze the socio-environmental metamorphosis of riverside areas and communities, based on works by authors focused on Amazonian themes.

To understand the region and its challenges, it was chosen a section that focused on Lower Tapajós, a stretch between Itaituba, a municipality with 123,312 inhabitants (IBGE 2022) and Miritituba, district of Itaituba, with 15 thousand inhabitants (Google, 2021) in addition to some indigenous villages and villages that spread across the surrounding rivers and streams and worked methodologically with historical and socioeconomic data contained in references from Architecture, Geography, History, Urban Sociology and Urbanism, aiming to dialogue with the policies intertwined in the actions of the public authorities who are not only influenced values and customs, but also have allowed mutations that affect the daily lives of traditional communities.

## **4 RESULTS**

### **4.1 The impacts of demographic growth in the region**

According to data from the CDL, Chamber of Store Managers in the municipality of Itaituba, there was a demographic variation of 2.74% between 2000 and 2010 and 4.31% between 2010 and 2022 (Table 1).

Table 1 - Itaituba demographic indexes between 2000 and 2022

2022	2017	2015	2013	2010	2000
101.541	98.523	98.446	98.363	97.343	94.750

Source: RPS://cndl.org.br/varejosa>cdl-itaituba-apoiando-o-de.

The population increase is already a reality that worries the public authorities, because the municipality's infrastructure is not prepared to deal with the new perspectives, nor does the population have the qualifications to meet the new demands of the local job market. Although some companies located there express the need to qualify the traditional population for functions necessary to serve the ETCs, this task, when carried out, is nothing more than a 3 to 4 days training with poor results. Without the incentive of adequate qualification, the socioeconomic problem tends to worsen, as natives are left with fewer opportunities in the face of demand from companies which, in turn, end up choosing to bring specialized professionals from other locations.

In an interview given by Tatiana Oliveira, political advisor at INESC - Institute of Socioeconomic Studies, states that:

Miritituba, district of Itaituba located on the right margin of the Tapajós, was the location that most felt the impact on the lives of residents of the region with the arrival of the so-called Cargo Transport Stations (ETC), or rather, the ports of Miritituba controlled by large conglomerates foreigners. It is through them that Brazilian agribusiness exports soybeans produced in the Center-West of the country to China, for example (INESC, 2022).

These ports are responsible for almost all jobs available in the region and the main problem for the local population is adapting to new activities.

According to WWF - World Wildlife Fund, dealing with the multiplicity of activities and the scale of economic investments in Lower Tapajós, particularly in regional infrastructure, “demands an assessment of the territory that is capable of strategically supporting public and private decisions, taking into account the cumulative and synergistic impacts of the projects”. Conventional analyzes and mitigation or compensation programs for socio-environmental impacts based on a case-by-case approach have not been enough to face the challenges of preparing/implementing regional projects, nor have they been able to establish the necessary parameters to indicate better alternatives for reconciling economic development of the region and the preservation of terrestrial and aquatic ecosystems.

In preparing/implementing regional projects, as a rule, a lot of time is wasted searching for those responsible for impacts and disastrous decisions, both public and private, although it is public knowledge that those directly responsible for monitoring land use are municipalities. It is also known that the municipal, state and federal authorities have enough knowledge and laws

to allow them to put into practice a wide spectrum of actions, with the purpose of improving existing institutions and still applying measures that contribute to correcting ambiguities.

Faced with the slowness of the actions of those entitled to action, extractivists, rural workers, indigenous communities and several local organizations decided to promote broad action for the forest economy with the `Floresta Ativa` (Active Forest) project, which aims to transform the region into a hub for sustainable activities, with the implementation of nuts processing and vegetable oil extraction plants, among others. This is an initiative, which, among other actions, aims to organize an organic products fair to supply the inns of Alter do Chão and other tourist attractions (SANTILLI, 2021). This is one of the solutions for the socioeconomic reorganization of the native population, since there are practically no alternatives left for the riverside people in the struggle against the difficulties with fishing and basic food.

In restructuring their own space, native communities weakened many historical and cultural aspects, although some managed to maintain a good part of their traditions. The caboclo's<sup>5</sup> own profile and traditions have been exerting less and less influence on riverside communities. When we talk about caboclo people, their origin and their attachment to the land and its customs are implicit.

The construction of the symbolism of the “caboclo” image was decisive in the integration of native populations. Briefly explaining this historical process of domination, in the middle of the 19th century, indigenous ethnicities of Tapajós were considered extinct by the State, and from the end of the 20th century and with the promulgation of the Federal Constitution of 1988, which brought with it guarantees of rights to the people indigenous people, these ethnicities were reorganizing themselves (TAPAJÓS, Ib Sales.; SILVA NETO, N. M, 2019).

The same symbolism of the “caboclo” image, determining the integration of native populations, is today weakening in its roots in consequence of the miscegenation and the lack of perspectives for most of autochthonous communities, distributed in 65 villages/communities belonging to the municipalities of Aveiro, Belterra and Santarém.

Perhaps the weakening of the cultural roots of the “cabocla” population is one of the main causes of distrust among riverside communities, who are living in a time of akrasia, with few life prospects, low income, and social insecurity.

On table 2, it is possible to see, paying more attention to the period before the construction of ETCs, the rise in Gross Domestic Product (GDP) in the last 20 years.

Table 2 - Evolution of Itaituba's Gross GDP

YEAR	GDP (R\$ 1.000)	GDP per capita (R\$)
2020	2 626 138,57	25 900.08
2010	649 261	6 669
2003*	318 335	3 326
2002	244 761	2 564
2001	197 533	2 075

\* Year of start of installation of ETC's

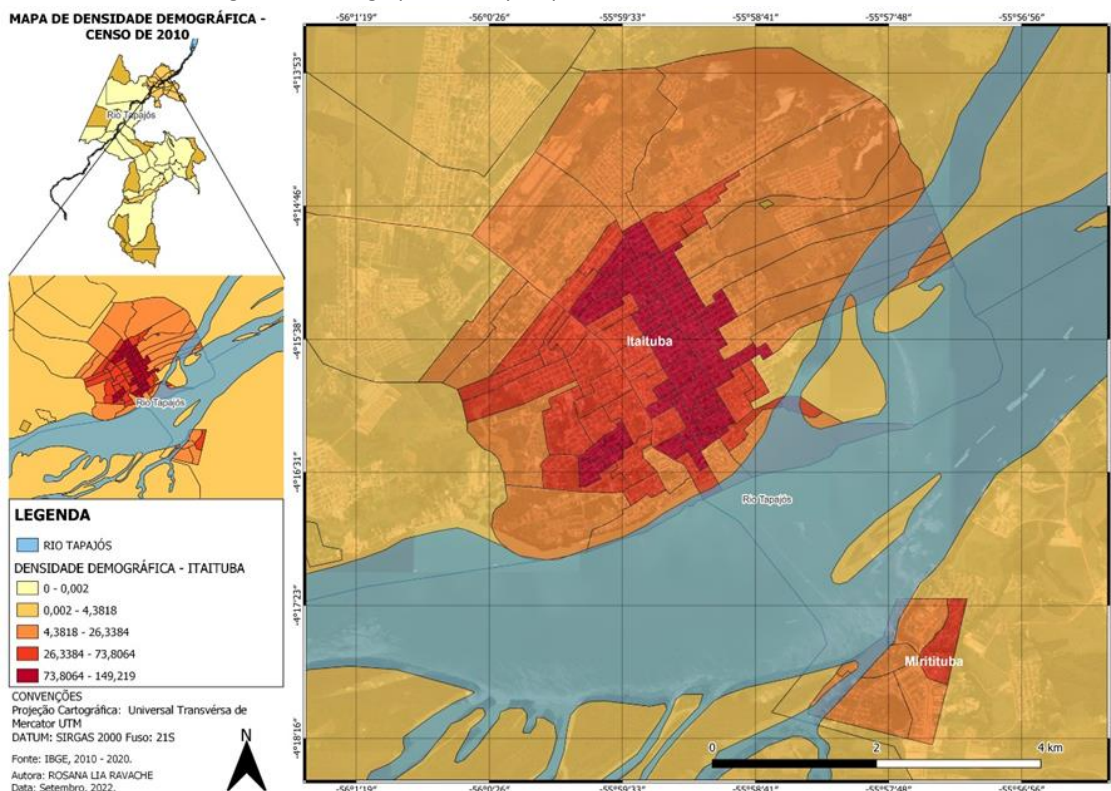
<sup>5</sup> Tupi term that designates the children of indigenous people with white Europeans. Although there are still people in Lower Tapajós who are faithful to their origins. At least 13 indigenous peoples (Tapajós, Tupaiú, Tapuia, Tupinambá, Munduruku-Cara Preta, Munduruku, Maytapu, Kumaruara, Borari, Jaraqui, Arara-Vermelha, Apiaká and Arapium),

Source: <https://pt.wikipedia.org/wiki/Itaituba> e <https://cidades.ibge.gov.br/brasil/pa/itaituba/pesquisa/38/46996>

The current GDP per capita of Itaituba is 25,900.08 and the MHDÍ is 0.640 (IBGE, 2020). Information on the City Hall website shows that residents receive an average of 2.3 MW, with 43.9% of the active population having a nominal monthly income of up to ½ MW (IBGE, 2010).

The map below (Figure 1) presents the local-regional reality;

Figure 1 - Demographic density map of Itaituba/Miritituba – 2010 Census



Source: IBGE 2010/2020 – Production adapted by Fabiana Zili Salmoria, 2022

These data are closely linked to the school enrollment rate of 94.4% (IBGE, 2010), which is distributed in: compulsory education range, based on 20,199 students enrolled in 107 elementary schools and 4,510 students enrolled in secondary education in 15 schools. (IBGE, 2021).

The number of students enrolled in secondary education is no more than 23% of students enrolled in elementary education. This means that the most of teenagers drop out of school soon after the initial years (between 6 and 10 years old). The situation becomes even more serious when one realizes that this number decreases substantially in the final years that cover the age group from eleven to fourteen years of age.

Another very serious problem arises in the public health area when it is found that only 20.3% of homes have adequate sanitation. This leads us to believe that the sinkhole is the Tapajós River. There was a large growth in the population and, as it turned out, nothing was done to improve basic sanitation services. Even when located in the middle of the Amazon, only 37.7% of urban homes have trees on public roads and of these, 2.3% of urban homes have their public roads adequately urbanized, that is, with drains, sidewalks, paving and curbs (IBGE, 2022).

It is also in this region that the main disagreement between the commercial production agents of Lower Tapajós and the native populations, mainly caused by the lack of prior consultations with the autochthonous communities. Such divergences worsened from 2003 onwards, when the infrastructure construction of cargo transshipment stations began to advance, as well as proposals for the construction of hydroelectric plants on the Tapajós River on the Center-North route, largely financed by the private sector.

In the understanding of agribusiness, the hydroroad route for transporting agricultural production from the central-west and northern regions represents savings of between 10% and 15% in commodity freight costs. However, there was no dialogue with traditional communities regarding the radical changes that the projects would bring to the *modus vivendi* of the populations in the area covered by Lower Tapajós. Just as happened along BR-163, between the 1960s and 1990s, capital advanced and took up space in the area covered by the Tapajós River.

As Becker (2009) states:

It is impossible, today, more than ever, to understand what is happening in a place and, consequently, to design and implement appropriate public policies, without considering the conflicting interests and actions of different geographic scales. At a global level, the Amazon is a frontier perceived as a space to be preserved for the survival of the planet. In this perception, legitimate environmental interests coexist, as well as economic and geopolitical interests, expressed respectively in a process of commodification of nature and appropriation of States' decision-making power over the use of territory (BECKER, 2009: 21).

For this author, legitimate environmental interests coexist in this perception of a border recognized as an Amazonian space, as well as economic and geopolitical interests that are not always focused on preservation, on the contrary, the commodification of nature and the misappropriation of territory almost always prevail.

Therefore, it is important to analyze the geographic and socioeconomic characteristics along the waterway to form a structuring nucleus with the different possibilities for reterritorialization.

As Haesbaert suggests:

The implementation of so-called territorial planning policies makes clearer the need to consider two basic characteristics of the territory: firstly, its political character - in the game between institutionalized political "macropowers" and "micropowers", often more symbolic, produced and experienced in the daily lives of populations; secondly, its integrative character - the State in its managerial-redistributive role and individuals and social groups in their concrete experience as "environments" capable of recognizing and treating social space in all its multiple dimensions (HAESBAERT, 2011, p.76).

From this perspective, it is easy to deduce that, in a short time, the tendency is for a restructuring of the territory to occur, as each convoy of barges, scheduled to transfer thousands of tons of commodities through the Tapajós and Amazonas rivers, will implement new territorial planning policies.

As has been established, the game between "macropowers" and "micropowers" of institutionalized policies produced and experienced in the daily lives of riverside populations, even if often more symbolic, as mentioned by Haesbaert (2011), provoked deterritorializations and reterritorializations that gradually redesign the geography of the area covered by the rivers that form the "North Central Corridor". The atypical movement of autochthones, although it is closely linked to the reterritorialization of neighboring areas, ended up affecting indigenous



communities and all the population of Lower Tapajós, due to the pollution caused by mining that affects not only Alter do Chão, near Santarém, but also good part of the aquatic life and everything that is consumed by the riverside population, causing serious health problems in all communities (Figures 2 and 3).

Figure 2 - Aerial photography records muddy waters of the Tapajós in contact with Lake Verde in Alter do Chão



Source: ALTINO, 2022.

Figure 3- Figure 3- PF operation against illegal mining within the Tapajós Environmental Protection Area in 2022.



Source: LADEIRA, 2023.

The free gold trade in Itaituba is very simple and cheap, because the eye of justice has usually turned away from it, considering that the greatest local authorities have direct interests in illegal extraction. The same happens with logging. They “clean” the forest and spread deforestation, at the same time as they open routes for the trafficking of drugs, minerals or illegal timber, structuring the cartel that is organized up to the borders with countries such as Bolivia, Peru and Colombia.

#### **4.2 The occupation model is not new**

For the majority of those who participated in the construction of the “profile” idealized by the military regime for the central-western and northern regions of Brazil between the 1960s and 1980s, land and nature represented only objects of economic appropriation and social

domination. Under the justification that it was a policy of national integration, based on large economic and agricultural infrastructure projects shaped by colonization and immigration, the program deterritorialized Brazilians from the south, with the proposal of low-cost land to be populated in the regions mid-west and north of the country.

With the advantages of land ownership, the marketing of the Federal Government program offered housing, long-term financing with low interest rates to finance planting and harvesting, as well as urban infrastructure, including health services, basic sanitation, schools and roads to flow production. With these offers they guaranteed the confidence of farmers who gave up what they had and what they had imagined having in the south of the country, to move to the north of Mato Grosso and south of Pará, where (according to the Federal Government's marketing) there were anecumene lands that could be occupied to develop crops on their own soil.

With these promises, federal migration policy aimed to solve two problems: on the one hand, to appease the emotions of small farmers in Rio Grande do Sul and Santa Catarina who had been demanding agrarian reform since the beginning of the 1960s; on the other hand, integrate the Amazon with the central-west and southeast regions, under the proposal of "integrate so as not to deliver", which had at its core the intention of expanding agricultural frontiers. The Federal Government believed that by populating the borders, it would maintain the Amazon immanence and the protection of the territory (RAVACHE, 2013).

Faced with the failure to fulfill practically all the promises made, many farmers headed further north, and in Pará they took possession of vacant<sup>6</sup> land to develop their crops. In turn, the autochthonous population that lived in the areas of economic influence of these regions was gradually removed or decimated, giving way to a new conception of property.

As Zart (1998, p.87) states, "the excluded are not a simple mass, but are configured as a group of individuals who become subjects of history, influencing State and market policies". It was thanks to these excluded people that the expansion of borders took place, often disguised as protection strategies for structuring/occupying the Amazon territory.

It is possible to affirm that this process of space production gave rise to the first policies applied to the settlers, centered on mineral and plant extractivism, with pre-capitalist characteristics, the genesis of the development of subsistence agriculture and extensive livestock farming that arrived practically at the same time and endured until the end of the 20th century, extending the influence of this occupation model to developments in Lower Tapajós.

Just as in the 20th century, the migration programs collimated to Mato Grosso and Pará began to produce an alternative flow that, on the one hand, escaped State control and, on the other, sought to circumvent political-economic pressures, with the argument to build a society with an Amazonian profile and focused on local issues. After a long period of socioeconomic reorganization, an environment of socialization is slowly emerging between

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<sup>6</sup> "Devolutas" - Vacant land is public land, or in other words, public properties that never belonged to a private individual even though they are occupied. The term 'devolutas' relates to the decision to return this land to the public domain or not, depending on so-called discriminatory actions. Historically, it involved the return of lands that belonged to the Portuguese crown, during the Brazilian Empire period and which, as they were public, under the terms of the Constitution of the Republic, could not be usucinated. (Source: <http://lfg.jusbrasil.com.br/noticias/>).

immigrants and autochthones communities, thanks to the efforts of both parties, but with little contribution from the State and the private sector.

As in the 1960s and 1970s, traditional communities suffered from invasions, caused by greed and disrespect for property, events that were repeated in the reorganization of space in Lower Tapajós. Social relations between citizens, added to the process of adapting people to the new reality, brought with them the sharing of precariousness, most notably when major highways opened more space for more immigrants.

According to Joanoni Neto (2007), the social relations of the new reality:

[...] took on different characteristics from those imposed at the beginning of local colonization. The protective centripetal force, characteristic of early communities, was replaced by the centrifugal force, characteristic of the economy of modern societies. After the first moment of astonishment and bewilderment, people compose themselves, seek to understand the new reality and reorganize their plans for the future. The surroundings, now intellectualized, reconstruct and are rebuilt. People learn lessons from the unknown and ignorance, little by little, gives way to small fragments of what will become the knowledge of the environment. This process does not occur with impunity, but it brings with it distancing, individualization, the end of many dreams based on that proximity created by the force of need and the sharing of each person's precariousness (JOANONI NETO, 2007:210).

This author's vision is confirmed when, with the construction of the BR-230 and BR-163 highways, more immigrants arrived from the states in the Northeast, expanding the anthropization of the Amazon and causing more disputes over land and more precariousness, in addition to broadening the outlook. differentiated for the daily reality of traditional communities.

Ricardo Gilson da Costa Silva, in his text "The disharmonization of the Amazon: agrarian conflicts, violence and agrobandidry", comments:

What qualifies this sociocultural process as transplanted societies are the formation of a migrant society that does not have as a referential value and does not yet seem to have the Amazonian aesthetics of nature, rivers and forests, original peoples and traditional communities, as a symbolic reference and cultural valorization. The result is a society in the Amazon that does not feel Amazonian, a society built on border expansion whose means of production and work result from the transformation of nature into an agricultural space, that is, from its aesthetic and symbolic destitution; hence the political and cultural estrangements against the Amazonian singularities expressed in caboclo populations, indigenous peoples and traditional communities and in protected territories, conservation units, indigenous lands and quilombola lands (SILVA, 2022).

As a transplanted society, the immigrant does not feel like an Amazonian and the caboclo populations were disoriented. In this impasse, a flank was opened for agribusiness to advance in technocratic decisions, expand its business and elect its representatives to the legislative power, aiming to influence specific public policies that defend the interests of the groups responsible for the production, transport and export of commodities, a business that corresponds to approximately 30% of national GDP.

This same agricultural capitalism has divided the banks of the Tapajós River into commodity transshipment areas that currently rob river dwellers of their limited chances of survival in the midst of so many conflicts caused by greed.

When Lower Tapajós seemed to be able to think about rebuilding its communities, another project regained strength, as of January 24, 2022: Aneel (National Electric Energy Agency) extended the deadline for feasibility studies of three hydroelectric plants along the

Tapajós River for December 2023. Combined, the three planned projects will have an installed capacity of 2,211 MW.

If considered that the first authorization for evaluation was granted by the regulatory agency in 2009 and that, taking into account the acts of protest by NGOs and traditional communities, the analysis of projects has been dragging on for almost 14 years, it is to be expected that the protests will not end in a short time, because the riverside population does not agree with the installation of hydroelectric plants on the Tapajós River.

On the other hand, the resilience of the riverside population has not been able to prevent public authorities in the states of Mato Grosso and Pará from prohibiting the gradual elimination of their Amazon biomes in favor of agribusiness, as they consider them economically crucial to the Brazilian trade balance. One of the strongest arguments for deforestation refers to the Brazilian Forest Code, which considers properties located in the Legal Amazon area as areas obliged to maintain 80% of areas located in forest zones as legal reserves; 35%, in Cerrado areas; and 20% in general field areas. Outside the Legal Amazon, the legal reserve percentage is 20%.

The advance of the agricultural frontier has weakened the argument that placed the area of Mato Grosso, for example, in the Legal Amazon space, to the extent that both the Cerrado and the hileia are being destroyed and putting to rest the argument created during the government military force that made possible the inclusion of Mato Grosso in the block of states benefiting from federal resources for being part of the Legal Amazon space.

According to an article published by Agência Câmara de Notícias, Bill 337/22 authored by deputy Juarez Costa (MDB-MT) intends to exclude the state of Mato Grosso from the Legal Amazon area, with the aim of reducing the legal reserve area maintained by the state, within the rules of the Brazilian Forest Code. The deputy argues that: "Removing Mato Grosso from the Legal Amazon would reduce this requirement to a minimum of 20%, saving Mato Grosso producers the expenses necessary to maintain up to 80% of the land without using it for agriculture."

This political-economic positioning of the deputy would not only put parts of the Amazon forest and Mato Grosso savanna at risk, but also contradict the most recent research carried out by rural producer, Marcelo Vieira, which concluded:

The area currently occupied by agriculture is only 30% of the Brazilian territory, but with the productivity gains that have been occurring, we are able to produce more than double what we produce today in the same area; therefore, Brazilian agriculture does not need to expand (the area used (VIEIRA, 2022).

It is known to most researchers that deforestation and changes in the natural environment resulting from human interventions tend to affect fauna and drastically reduce the number of habitats and ecological niches of animals, causing imbalance in the ecosystem. Each animal species needs a vital space for its survival and, for some species, it becomes impossible to survive with the reduction of their natural environments.

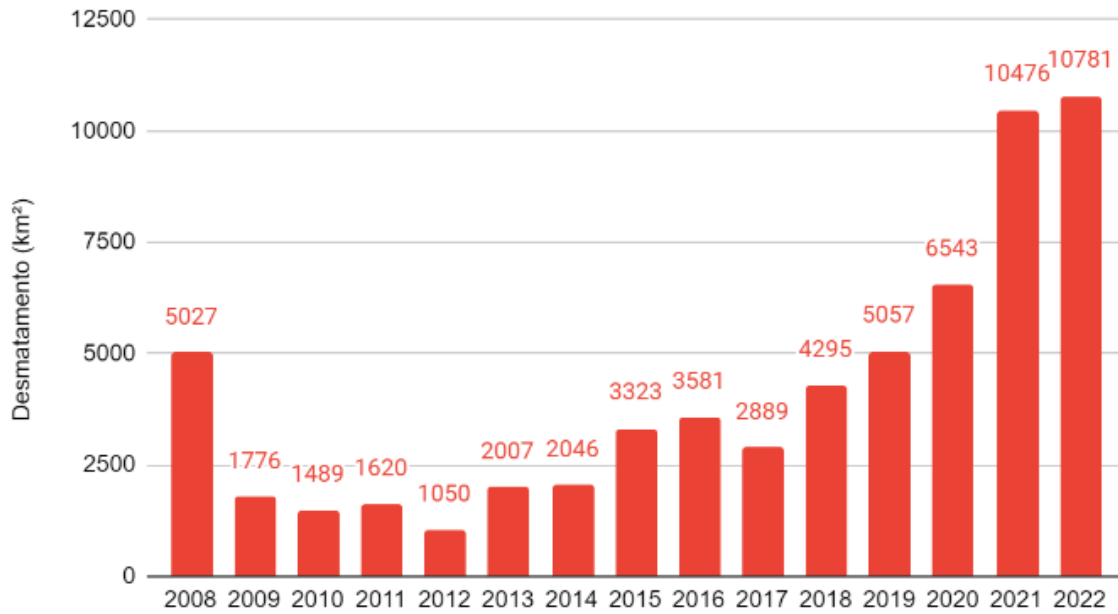
Imazon<sup>7</sup>, in its summary report on Threats and Pressures in Preserved Areas, published in April 2022, stated that, based on deforestation alerts from the SAD (Deforestation Alert

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<sup>7</sup> Institute of Man and Environment of the Amazon - Civil society organization of public interest.

System) (Table 3) “deforestation is, without a shadow of a doubt, undoubtedly one of the biggest threat vectors, but there are other vectors such as logging, mining and hydroelectric plants”.

Table 3 - Deforestation in the Amazon – Historical Series



Source: Imazon (2022).

Pollution caused by mercury, the etiological agent of several pathologies, in addition to other heavy metals from illegal mining activities in the region which, according to an analysis by Fiocruz (Oswaldo Cruz Foundation<sup>8</sup>), should be stopped immediately. The research carried out by Fiocruz, in partnership with WWF-Brazil, presented in 2020 to the Public Ministry of the State of Pará (MPPA) - Santarém, shows 100% mercury contamination in the Munduruku indigenous people, inhabitants of Medium Tapajós, among the municipalities of Itaituba and Trairão. In addition to the Munduruku, other riverside communities are demanding State intervention to contain the criminal management of mining in the region (Figure 4).

<sup>8</sup> Mercury. Available at: [https://www.epsjv.fiocruz.br/sites/default/files/files/LIVRO\\_Mercurio\\_Saude.pdf](https://www.epsjv.fiocruz.br/sites/default/files/files/LIVRO_Mercurio_Saude.pdf). Accessed on 05/20/2022.

Figure 4 - Mining on Kayapo indigenous land - Pará



Source: Photographer - Felipe Werneck / Ibama

Mitigating the use of mercury today includes a leaching project that, in the opinion of André Molina, president of the Poconé Mineral Development Cooperative (CooperPoconé), can be put into practice, with the use of a gold extraction system without use of mercury. The Pelicano System<sup>9</sup> is already being used in the Pantanal, with the aim of eliminating contamination, in cases that include the use of mercury. Reducing the use of mercury in mining is one of the State's major concerns and is in line with the proposals of the Minamata Agreement.

Although this represents a technological advance for the mining sector, it is important to remember that sodium cyanide is also harmful if not used properly. Therefore, the advancement of new technologies will not exempt the State from its duties, specifically controlling to ensure safety and environmental protection during the extraction process. At this moment, the most serious case is, certainly, the proliferation of mercury discarded in the river by illegal mining.

A TV Globo report presented the results of a study carried out by a team made up of scientists and journalists from Rede Ambiental Mídia revealing that, based on public data, 20% of the Amazon Basin, the largest river basin in the world, is already highly impacted for activities such as mining and hydroelectric power generation.

As Cecilia Gontijo Leal, researcher at USP/ Aquazônia Project, states:

Hydroelectric power, mining generates a very drastic changes in water, right? It completely changes the entire flow the entire flow of a river, which is completely altered by these activities, so they had a greater weight in our index calculation (LEAL, 2022).

The study also warns of the most critical regions of the Amazon Basin, those that suffer impacts from more than one activity at the same time, as 21% of the rivers researched by the

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<sup>9</sup> This is a different engineering project, which aims to replace mercury in the leaching phase (separation of mud and gold) with sodium cyanide, used in this process as it is a less toxic agent and capable of dissolving gold and other precious metals. efficiently. During the process, a chemical agent is added to the ore to dissolve the metals and release them into the solution.

team are at risk and the damage caused to traditional communities can be much more serious. The survey also shows the importance of indigenous lands in protecting rivers, especially because in more than 80% of these territories, the impact on the basins was considered medium or low. What is most worrying is the spread of illegal mining, which has exponentially increased degradation and the risk of conflicts. One of the most affected regions is the Kayapó indigenous land, in the south of Pará. As Maial Kayapó, an indigenous leader, states, “They are impacting the river, the fish, our entire way of eating, our entire way of existence, because in my people, in other peoples too, the river, it is part of our culture” (MAIAL KAYAPÓ, 2022).

Added to these adversities are the activities inherent to the transshipment stations along the Lower Tapajós, which have contributed greatly to the deforestation of areas surrounding the river, as in addition to the movement of barges transporting commodities, they have caused an increase in traffic trucks in recent years. Likewise, the construction of maneuvering and product storage yards, in addition to deforestation, scared away fauna and altered the behavior of some species, and may even have caused disappearances in the areas covered by the ETCs.

Another impact related to navigation is the presence of passenger boats and “fast boats” (powerful boats that function as river taxis) between Santarém and Itaituba, passing close to the banks. As there is no navigation plan for the Tapajós and there is a lack of regulation to avoid the impacts of the traffic of these boats, it is difficult to control them so that they do not further harm riverside communities and local biodiversity.

The positive point of transporting commodities using the new mode is the transfer of wealth to other less favored regions, since the route through Tapajós brings technological innovations and opportunities to practically all autochthonous communities.

Regarding this economic turnaround provided by the “Center North Corridor”, Bernardes and Freire Filho (2005) suggest that:

The notion of complete and incomplete circuit helps to understand the rules of the full market and how this market feeds back into different areas. Consequently, the surplus value and value generated in one place are not fully realized where they are reproduced, but are distributed according to economic, financial and political strategies, contributing to the accumulation carried out elsewhere, transferring value from low-income areas. productivity to those with higher productivity, making the mechanisms and trajectories increasingly complex. Technological innovations currently institute this ambiguity and this generalization at a global level, enabling the transfer of value more broadly (BERNARDES E FREIRE FILHO, 2005, p. 25).

Based on the statements of Bernardes and Freire Filho (2005), it is relevant that there is a transfer of value more broadly, to allow other economically less favored communities to achieve better living conditions.

## 5 FINAL CONSIDERATIONS

During the research it was realized that the Amazon is far from finding its socio-economic-environmental balance, not only due to the anthropogenic advance on the forest, but mainly due to the socio-political negligence of the State that has been going on since the 19th

century (between 1850 and 1923<sup>10</sup>), when English magnates, latex explorers, with the support of the Federal Government, built true palaces embedded in the forest, at the expense of multitudes of rubber tappers who lent themselves to true human servitude.

At the beginning of the 20th century, it was tycoon Henry Ford's turn to receive support from the Brazilian State to implement the Fordlândia project in western Pará (1928/1945), with the intention of “civilizing the Amazon” (in his concept) and exploring its own rubber plantation, to support rubber consumption.

What can be seen in the contexts analyzed is that there is tacit acceptance on the part of traditional communities, but the programs proposed by AMPORT (Association of Port Terminals and Cargo Transshipment Stations of the Amazon Basin), in partnership with the CRAS (Social Assistance Reference Center) in the region, for example, do not count, with no riverside dweller who wishes to take any position (neither with the companies nor with the programs they propose), because, basically, they do not trust them. Apparently, they want to remain neutral throughout the process, so as not to compromise themselves or suffer local pressure or threats.

As it turned out, some communities managed to organize themselves and manage their resources with sustainable use of the environment, aiming to perpetuate it for future generations. However, as Renato Azevedo Matias Silvano and Alpina Begossi explained in the article “Ribeirinhos and Caiçaras: life between land and water”, despite “recent studies indicating that management with the participation of local communities can help in the maintenance or recovery of fishing resources, especially in Amazonian lakes”, community management will not always work perfectly. It is very important to constantly monitor the use of resources, to check whether the rules established for this management are being followed by the residents of the communities involved.

Likewise, according to the environmental impact study (EIA) that Ferrogrão presented at the end of 2020, only 2 Indigenous Tribes, Mundurucu and Kayapó, located in the municipality of Itaituba (PA), close to the railway's final station, would be affected by the authorized decommissioning by the Provisional Measure. This would represent around 800 hectares of the Jamanxim National Park (PA), or the equivalent of 0.054% of its total area.

The survey released in July 2022, by InfoAmazonia, with consultancy from the National Institute for Space Research (Inpe), concludes that this area of influence will reach 50 km from the project. Therefore, the work would affect 6 Indigenous Tribes and 17 conservation units.

Therefore, for each of the items analyzed here, there are positive and negative points that basically depend on strategically planned public policies to be put into practice.

Here the issue of drug trafficking needs to be included, which the public power arm seems unable to reach, not only due to the intricate geography of the Amazon but also due to the strong cloud of corruption that most resembles Boitatá, with eyes that look like two headlights and transparent leather that shines on the nights when it appears gliding through the meadows and streams.

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<sup>10</sup> At this time, Manaus and Belém competed for the title of “Tropical Paris. The best example of this is the Manaus Theater inaugurated on December 31, 1896, when the good winds for rubber were still blowing, without the lords of the jungle having realized that shortly afterwards its decline would begin, as 70 thousand rubber tree seeds from the Amazon rainforest, organized by the Englishman Henry Wickham in 1876, these seeds were planted in English Asian colonies and destroyed the Brazilian monopoly on rubber



What can be concluded is that riverside communities, native communities, as well as the Public Power, still have a lot of work to do, until investments and rights go hand in hand both to protect the Amazon and to safeguard the rights of those who live there.

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