


## RISK MANAGEMENT AND ECONOMIC AND SOCIAL DEVELOPMENT: PUBLIC SECURITY PERFORMANCE IN THE MARAJÓ-PA REGION

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### ABSTRACT

Objective: This study aims to discuss the concepts of risk management, governance, and innovation in public safety, focusing on the performance of the Antônio Lemos river base, located in the western portion of Marajó-PA. Methodology: The research is descriptive and exploratory in nature, addressing the analysis of authors in the field of governance in public safety and innovation. Data from the SISP2 system were used and analyzed based on the documentary research technique (Kripka et al., 2015; Perovano, 2014), with specific authorization (PAE 2024/732795). The study area is the western portion of the Marajó

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archipelago, and factors such as crime, river transport, and the impact of the Antônio Lemos river base were observed. Results: The installation of the river base provided greater coverage and efficiency in river policing, reducing crime rates in nearby areas, especially in Breves-PA. Despite this, issues such as under-reporting of crimes and limitations in scope remain challenges. The study reaffirms the need to implement more river bases, highlighting their relevance for public safety and local socioeconomic development. It is noted that the integration of public policies with social innovation initiatives can transform regional dynamics, increasing security and stimulating economic progress.

**Keywords:** Risk Management. Governance. Public Safety. Social Innovation. Amazon.

## INTRODUCTION

When addressing the issue of public safety, it is common to associate it exclusively with police organizations and repressive actions aimed at crime. In the context of violence that characterizes Brazil, it is essential to think of public safety beyond specific repressive actions, generally initiated after a crime has occurred. Villa (2020) argues that the current level of crime organization demands more integrated action among police forces, requiring the implementation of public policies capable of systematically preventing the occurrence of crimes. In this sense, he introduces the idea of governance, promoting an objective process of management and evaluation of public policies, in which control is not limited to the hands of those responsible for implementing them. For Giddens (2008), one of the fundamental premises of the State is to ensure the right to public safety, the protection of life and property, as well as other fundamental rights, allowing citizens to fully exercise them. This guarantee is essential to enable strategies aimed at economic and social development. On the other hand, the lack of basic services, such as health, education employment, and income opportunities, intensifies urban segregation, makes the social fabric vulnerable, and negatively impacts the Human Development Index (HDI). This reinforces the need for cross-cutting public policies that address issues such as violence and crimes in an integrated manner, which cannot be resolved exclusively through repressive actions by public security agencies.

Crime is a multifaceted phenomenon, encompassing territorial, socioeconomic, and political aspects, among others. Therefore, when dealing with this problem, it is essential to consider its various nuances, especially risk mitigation and threat management. Thus, risk analysis becomes a central tool, allowing us to anticipate the occurrence of crimes and act in a preventive and effective manner (Cerqueira, 2017).

In this context, considering the complexity of the topic and the need for interdisciplinary approaches to address crime and violence, this article aims to discuss the concepts of risk management, governance, and innovation in public security, focusing on the performance of public security in the Marajó Region of Western Pará, highlighting the phenomenon and the role of river bases in Pará.

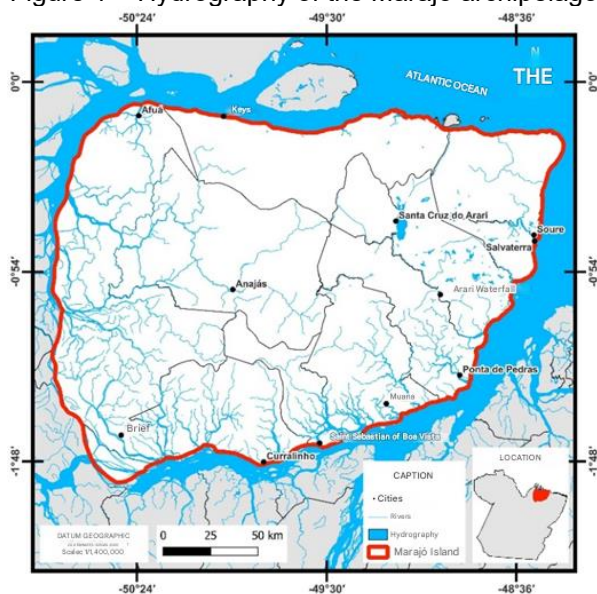
The relevance of the topic arises from the challenge inherent in implementing policies to combat crime, especially in a territory marked by the integration of Pará rivers with Brazil's international borders. Many of these areas operate without sufficient intelligence or integration, which limits repression to actions such as combating robberies,

homicides, and drug trafficking, without, however, addressing the criminogenic causes that lead individuals to participate in these illicit practices.

## RESEARCH METHODOLOGY AND GEOGRAPHICAL SPACE OF REFERENCE

Regarding the methodological aspects, the work adopted a descriptive nature – aimed at presenting problems inherent to the geographic space of reference analyzed – and exploratory, seeking a conformation between theoretical aspects and real data. The work was based on an analysis of authors in the field of Public Security Governance and Innovation, from which ideas, data, indicators, and news were compared, demonstrating possibilities regarding governance over the geographic space of reference of the study: the western portion of the Marajó Archipelago, in the State of Pará. The documentary research analysis technique (Kripka et al., 2015; Perovano, 2014) of data from the Secretariat of Intelligence and Criminal Analysis – SIAC, originating from the SISP2 system, duly authorized by PAE 2024/732795, was also used to analyze the potential results of governance measures in the region. Figure 1 shows the large number of water bodies that make up the western portion – much larger, in fact, than that existing in the eastern portion. These rivers are almost all full-flowing and are directly related to flows inherent to the Amazon River, to the north, and the Pará River, to the south and east of the archipelago.

Figure 1 – Hydrography of the Marajó archipelago



Source: Authors

The ten municipalities on the western side are accessible only by air, in small aircraft, or by river, using a wide variety of vessels. In this context, the Itamaraty-Tajapurú-

Buiúçu river waterway, known as Estreitos, stands out. It is a river corridor that connects the Amazon and Pará rivers, making it one of the most important waterways in the country for the transportation of cargo and passengers.

The decades of State absence – not only in the area of public security, but also, and mainly, in the areas of social assistance, employment and income, and public health – have transformed Marajó into fertile ground for the activities of various criminal territorial agents. Among these, those responsible for crimes against children and adolescents stand out, as well as the so-called pirates – criminals who operate in clandestine vessels, committing various crimes against riverside dwellers and, mainly, against other vessels. The problem is aggravated by the precariousness of passenger transportation, which is often marked by shipwrecks, almost always due to excess passengers.

The great challenge of combating crime, and irregular passenger and cargo transportation, among other problems, involves the extensive river network, the shortage of police officers – especially the civil police – and the lack of participation of the local population. Often, due to a lack of knowledge or fear of reprisals, the population fails to report criminal incidents and collaborate with the work of security agencies.

As explained, Marajó is characterized by deficiencies that generate serious social problems, which, in turn, result in significant challenges for public safety. Thus, it is possible to affirm the essential need to consider this context as a prerequisite for an action of social innovation that allows for the guarantee of security in a macro sense, ensuring, above all, access to other rights (Cloutier, 2003; Tardif; Harrisson, 2005).

As shown in Table 1 below, the data show the results of years of neglect by governments about basic public policies, systematically denied to the Marajoara caboclo.

Table 1 – 2010 HDI-M of the 10 Municipalities in Western Marajó – Pará – Brazil

Ranking	Municipality	HDI-M 2010	HDI-M Income 2010	HDI-M Longevity 2010	HDI-M Education 2010
5081st	São Sebastião da Boa Vista	0.588	0.520	0.760	0.439
5502nd	Gurupá	0.509	0.510	0.777	0.333
5520th	Breves	0.503	0.524	0.778	0.312
5524th	Curralinho	0.502	0.508	0.769	0.323
5543rd	Afuá	0.489	0.485	0.774	0.311
5550th	Anajás	0.484	0.506	0.774	0.290
5553rd	Portel	0.483	0.513	0.767	0.286
5558th	Bagre	0.471	0.481	0.777	0.280
5560th	Chaves	0.453	0.516	0.769	0.234
5565th	Melgaço	0.418	0.454	0.776	0.207

Source: UNDP, 2023.

The numbers clearly show that, out of the ten municipalities in Western Marajó, four have a low Municipal Human Development Index (HDI-M), while the other six are classified as very low (UNDP, 2023). The municipality of Melgaço ranks last in the reference space, occupying the 5565th position in the ranking of Brazilian municipalities concerning this index (UNDP, 2023).

## **RESULTS AND DISCUSSION**

### **MARAJÓ AND THE NEED FOR A GOVERNANCE AND INNOVATION VIEW**

According to Crises (2018), the concept of social innovation involves institutional and organizational arrangements aimed at meeting social demands. In this sense, river bases fit into this concept by implementing integrated activities and services, with the participation of police officers, both civil and military, firefighters, and social workers. From this perspective, the bases emerge as a technological tool and a social innovation.

In the context of the problems faced by the Marajó population, it becomes relevant to promote adequate management of the risks associated with crime, and to establish decision-making processes inherent to the most viable measures to be implemented, the results of which will strengthen the region, including from an economic perspective.

This is a process that requires an understanding of the economic, social, and political conditions. Thus, given the problems of violence in the region, it is urgent to adopt measures inspired by the social innovation model, which operates as focal forces, working side by side with development on several fronts.

When talking about risk management policies, authors such as Machado (2014) and Brasiliano (2016) argue that, when dealing with a biopolitical strategy to contain the increase in crime, the focus should no longer be on the criminal event itself, but rather on the complexity of the socioeconomic factors involved in the issue.

In this context, the idea of governance applied to public policies in the sphere of public security emerges, which presupposes constant dialogue with other public and private sectors to achieve effective results.

Risk is uncertainty, something that is not always under human influence regarding the possibility of preventing its effective realization. When there is no health, education, employment, and income, the risk of increased crime is significant. In situations such as poorly lit streets, the risk of crimes occurring increases exponentially. When crimes occur, public lighting is rarely questioned – which, by the way, citizens pay for – and the debate



almost always focuses on potential police failures. The consequences of these omissions end up falling on public security, which, in turn, becomes socially responsible for mitigating problems often caused by multifaceted variables (Galante, 2015). In a scenario of uncertainty, risk management, covering internal and external aspects, enables the preventive identification of factors that may harm citizens. In the context of public security, this management represents the preservation of lives and the maintenance of public order (Galante, 2015).

### 3.2 GOVERNANCE AND PUBLIC SECURITY

Society encompasses several social processes. For Oliveira et al. (2016) and Sinhoretto (2014), social processes precede the occurrence of the criminal event and refer not to the criminal, but to citizens, who have fundamental rights guaranteed by the Constitution, such as freedom of movement, health, education and their security. In this sense, it is understood that security, although it is a guarantee for the full exercise of other rights, constitutes just one more of the rights enshrined in the constitutional text, and not the only one to be guaranteed.

When we talk about public governance, we are talking precisely about transversality: addressing the fight against crime in a broad way, with the adoption of policies aimed at realizing basic rights, the absence of which can contribute to the increase in violence.

Risk measurement, from this perspective, allows us to identify and anticipate deficient factors, to enable the adoption of broad and effective public policies. Buta and Teixeira (2020) point out that the identification of risks and vulnerabilities makes it possible to establish priorities.

This process involves a comprehensive study that, according to Giddens (2008), must consider structural elements of organizations, values, behavioral aspects, and adopted processes, among other factors, allowing socioeconomic development and the full enjoyment of rights by citizens. It is essential, therefore, to go beyond the operational and tactical scope, focusing mainly on the strategic scope, where the decision-making process occurs, and risk management functions as a strategic policy tool. In this context, the concept of social and technological innovation emerges as a direct consequence of the idea of governance. This concept can be exemplified by the advent of the Public Security River and Air Groups (GFLU and GRAESP), created in 2011, through which SEGUP unified material, human, and operational resources for joint actions, integrating the civil and military police and the military firefighters in the GFLU, which began to carry out numerous integrated river missions throughout Marajó. The agency's missions increased the fight

against crime in the region to another level of strategy, planning, and results. The objectives achieved were so significant that they soon attracted the attention of other public security forces in neighboring states – Amazonas and Amapá – as a model of integration to be followed.

However, river operations departing from the base in Belém have always generated high operating costs for the budget allocated to Public Security, especially regarding fuel consumption for river vehicles (boats and boats). Here, any comparison with land vehicles (cars) is inappropriate, since, with a 50-liter tank of gasoline, a car can travel more than 500 km. However, an EAT-type boat, equipped with a 300 HP (horsepower) engine, consumes around 70 liters per hour at cruising speed, considering normal tide conditions.

For example, a land vehicle could travel the route between the UFPA coastline and the Outeiro coastline in approximately 40 minutes. However, a boat with a 300 HP engine, which consumes 50 liters of diesel per hour, would have difficulty traveling the same distance, especially when considering the tide conditions (high or low tide), strong winds, and large waves, which directly affect fuel consumption.

At the beginning of 2014, the idea was to set up seven river bases throughout the state, to make river operations to combat crime more effective and at a lower operating cost for the state. In this same context, the modernization of the fleet of riverboats was considered. The river base project was presented to SEGUP in 2014, with the proposal to install the first base in Vila de Antônio Lemos, a location widely used as a support point by tax agents for years, located in the Western Marajó Strait. This is a strategic point because it is an obligatory route for all modes of cargo and passenger transportation between the three capitals: Belém (Pará), Manaus (Amazonas) and Macapá (Amapá).

For the same strategic reason, it was suggested that the second base be installed in Óbidos-PA, where there was already a Federal Police and Federal Revenue inspection base, focused on combating drug trafficking and customs control. However, this base did not adequately meet the demands of riverside populations, such as combating river robberies in the Lower Amazon.

In mid-2022, the State Secretariat for Public Security and Social Defense (SEGUP) opened the first river base in Vila de Antônio Lemos, which began to directly impact the dynamics of crime in the Marajó region. Despite the great tourism potential of the area, before the launch and presentation of this technological tool to the Marajó population and



sailors, there was a strong fear of criminal attacks. This scenario began to change with the integrated actions of several agencies, promoting a growing sense of security.

The State of Pará – with over 1.245 million km<sup>2</sup> – and the island of Marajó – with over 104 thousand km<sup>2</sup> and a network of over 5,500 km of navigable rivers, in addition to a natural vocation for river transportation – represent challenging spaces for the implementation of public policies on security. As can be seen in Figure 2, a multimodal map prepared by the National Transportation System (SNV) – established by Law No. 12,379/2011 (Brazil, 2011) –, the number of rivers, most of which are fully navigable, in the State and on Marajó is evident. This factor, relevant to river transportation, is fundamental for waterway transportation activities of cargo and passengers...

Figure 2 – Multimodal Map – PARÁ 2023.

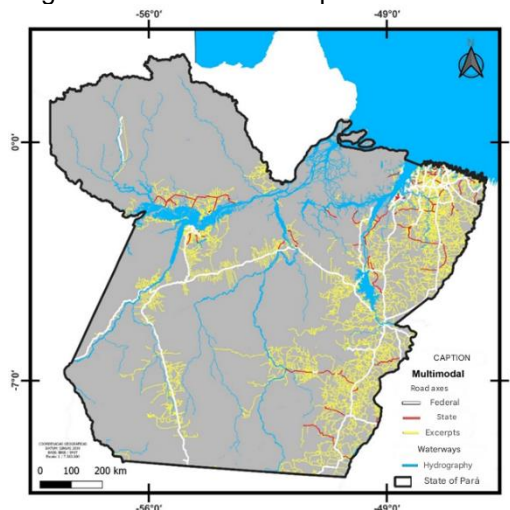


Image: IBGE / DNIT 2023.

Likewise, the river corridor that extends from the municipality of Óbidos-PA to Ponta do Capim, near Barcarena – that is, from the Lower Amazon to the south of Marajó – represents one of the most sensitive areas from the point of view of risks to public safety. This corridor is a point of special attention for this work and public policies in Pará, as discussed below.

## INSECURITY AND RISK IN NAVIGATION

There are several obstacles faced by the public safety system, especially in the region where the Amazon River connects to the Pará River, through the Breves Straits (Itamaraty-Tajapuru-Buiucu and Parauaú rivers), exiting at Baía das Bocas until crossing the Capim Island (Reis Netto, 2023). Due to the extensive river network and restricted

navigability conditions, such as the need to navigate at night at controlled speeds, on-board policing must be agile to be successful in its missions. However, obstacles such as logs or floating vegetation in the rivers represent direct risks faced by the pilot and his team during the day. At night, these risks increase exponentially, including the risk to the lives of the few public agents assigned to cover this vast stretch of navigable rivers.

It is therefore necessary to have personnel trained in boat driving and with a specific vocation for working on board. It is important to emphasize that piloting is not simply driving; it is necessary to know how to pilot, especially in adverse situations. For example, in unfavorable weather conditions, it is essential to have practical knowledge of navigability – such as navigation channels and the relief of the river bottom – to reduce the risk of accidents, such as the boat running aground on submerged sandbanks or colliding with equally submerged rocks, which can compromise navigation due to the limited draft.

These factors make on-board policing a highly specialized activity. In addition to knowledge about crime and how to combat it, expertise in another field is required: navigation. It is common for inexperienced pilots to collide with the bottom of the vessel with submerged sticks or rocks, with failure of the propulsion system being the least of their problems. If the collision occurs at high speed, there may be serious damage to the hull, making sinking inevitable. This type of incident jeopardizes the mission and puts the lives of the crew at direct risk of death.

The creation of the Public Security River Group (GFLU) by Law No. 7,584/2011 (State of Pará, 2011), composed of the River Police Station (DPFLU), Independent River Company (CIPFLU), and Maritime and River Fire Department (GMAF), the State became more present, especially through integrated river operations, carried out both with its personnel and in interagency partnerships. These actions took the State to the most remote corners of Marajó, the Lower Amazon, and the areas surrounding Belém.

After several successful missions, initiated from Belém in 2014, it was proposed to install a GFLU base in Vila de Antônio Lemos, a strategic point for cargo and passenger navigation between Belém-Manaus and Belém-Macapá.

The extensive river network, with thousands of kilometers of navigable rivers, the unfavorable navigability conditions, the adverse weather conditions, and the restrictions on navigation at specific points in the bays of Gurupá, Vieira Grande, Buçutuba (Amazon River), and Marajó (Pará River) are factors that further increase the risks for river policing, making the operation a high-risk activity.

With the start of operations of the Antônio Lemos base, starting in 2022, there was a paradigm shift. The Civil Police, together with the Military Police and other state agents, began to work in shifts at the base. As a result, part of the river network in the region under study began to be covered without the need to remove police officers from the city. This change reduced one of the main risks faced by officers: crossing the Marajó Bay (Pará River) to combat crimes in the Straits and adjacent rivers. The region now has more trained agents who are adapted to river operations.

The effect of reducing the crime hotspot – georeferenced points of occurrences of certain types of crimes, concentrated in specific locations – within a radius close to the base was immediate. In this context, the social innovation addressed by Crises (2018), as well as the idea of public governance and risk management, began to be directly related to on-board policing, reflecting transversal and optimized public policies.

According to Ulrich Beck (2011), the concept of a risk society involves several factors that generate social burdens: ecological, financial, military, terrorist, biochemical, and informational. Beck points out that risk is experienced as something omnipresent, unfolding into three areas:

Table 2 – Comparison of Crime Incidents Related to River Piracy in Western Marajó, from 2019 to 2023

**Analyzed Period:** 01/01/2019 - 31/12/2023

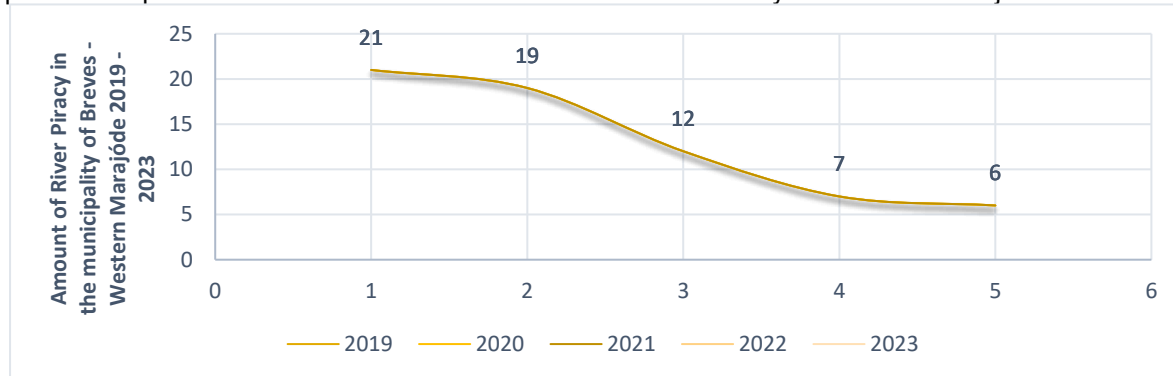
**Data Collection Date:** 16/06/2024

**Source:** Public Security Information System 2.0 – SISP2

Municipality	2019	2020	2021	2022	2023	Total
<b>Afuá</b>	6	4	1	0	4	15
<b>Anajás</b>	1	1	2	1	3	8
<b>Bagre</b>	0	2	0	0	0	2
<b>Breves</b>	21	19	12	7	6	65
<b>Chaves</b>	0	1	0	1	0	2
<b>Curralinho</b>	2	5	1	0	0	8
<b>Gurupá</b>	1	1	3	0	4	9
<b>Melgaço</b>	1	0	1	0	0	2
<b>Portel</b>	4	1	6	1	0	12
<b>São Sebastião da Boa Vista</b>	2	7	2	0	1	12
<b>Total</b>	38	41	28	10	18	135

**Source:** SEGUP/SIAC, 2024, with highlights by the authors.

Graph 1 – Comparison of occurrences of crimes linked to River Piracy in Breves – Marajó from 2019 to 2023



Source: SEGUP/SIAC, 2024.

As mentioned, the figures presented may be biased by under-registration. With the start of the database's operations, these difficulties were mitigated, generating more consistent numbers of criminal records, which also positively reflects the impacts of this social innovation tool.

It is expected that this study will contribute to the identification of risks and threats present in the socioeconomic context of the western portion of Marajó Island, in Pará, in a more efficient manner. After all, reliable records have a direct impact on public safety and, consequently, on combating crime in the region.

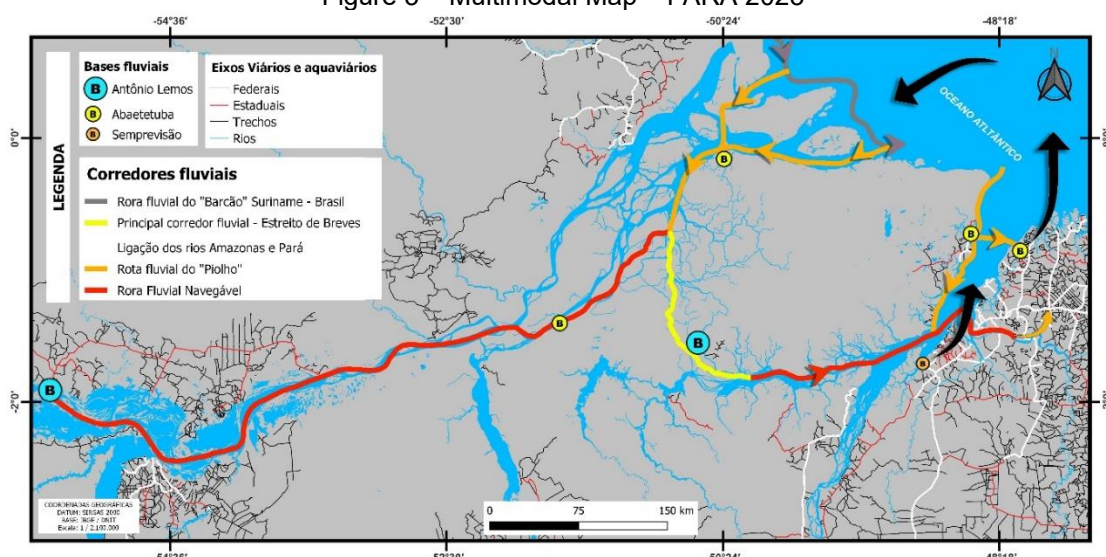
Therefore, it is urgent to implement other databases to eliminate the gray areas of data that still exist in the Pará River courses, which result from under-registration. In terms of governance, it is essential that the database in Vila de Antônio Lemos be permanent and established on its land. In this sense, the process of transferring the area from the Union to the State, with georeferenced points described in process 2017/61287, in a total area of 5,948.340 m<sup>2</sup>, has already been concluded – a strategic decision for the government.

It is also important to note a concern regarding the original project for the Antônio Lemos base, which proposed its construction in Vila de Antônio Lemos itself, on its land and not in the form of a ferry boat (i.e., a mobile structure). Although the idea of mobility is interesting as a seasonal strategic policy, it offers less security for future private sector investments in the region, considering the possibility of moving the base to other locations, according to the convenience of managers or political changes. The permanent presence of this innovation can certainly generate continuous progress in the region over the years. Expanding on this reflection, it is worth mentioning the study carried out by the Board of the River Group in 2014, presented to SEGUP, with the proposal to amend Law No. 7,584/2011, recommending the creation of a total of seven river bases. In 2018, the need



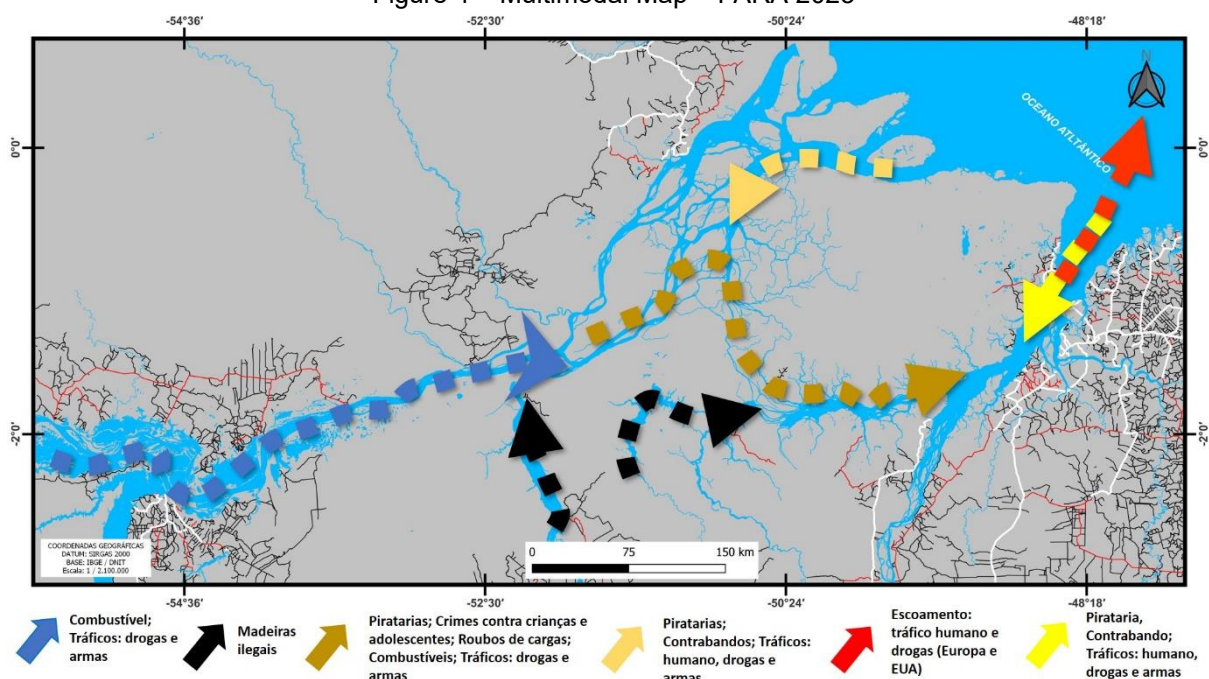
was reiterated, with the inclusion of a river base in Santarém-PA, aiming to reduce a historical deficit of the State in the surveillance of its extensive river network. Figures 3 and 4 present maps that visually demonstrate the river corridors and their importance for river transport in the region, as well as the routes used for the main crimes in the river environment: drug, arms, and human trafficking; “piracy” (in its various forms); sexual crimes against children and adolescents; smuggling; and illegal deforestation, among others.

Figure 3 – Multimodal Map – PARÁ 2023



Source: DNIT, 2023 – adapted and edited by the author showing river corridors and bases.

Figure 4 – Multimodal Map – PARÁ 2023



Source: DNIT, 2023 – adapted and edited by the author showing river corridors and bases.

According to the Waterway Statistics available on the website of the National Waterway Transportation Agency (ANTAQ, 2023), applying the filters "Navigation Type", "Cargo Profile", "Hydrographic in Tons", "Group of Goods" and "Waterway in Tons", it was found that, in 2023, in the waterways of the Lower Amazon, Amazonas, Tapajós and Lower Tocantins, a total of 57,745,725 tons of solid bulk were transported, with just over 36.4 million tons; liquid and gaseous bulk estimated at 5.3 million tons; general cargo of 4.7 million tons; and containerized cargo of 776 thousand tons, according to graphs published in the application.

These numbers demonstrate, unequivocally, the importance of the river transport mode in the North Region of the country, both for the region itself and for the national public interest. However, this mode of transport has made little contribution to the development of riverside cities along the waterways that connect the Amazon to the Lower Tocantins, on the Pará River, despite its importance for the functioning of the international market.

There is, therefore, an urgent need to increase the number of river bases as a tool for social innovation. The figures obtained from the Secretariat of Intelligence and Criminal Analysis (SIAC) reflect an improvement in qualified security performance, which, consequently, has a positive impact on the dynamics of the exercise of fundamental rights.

As part of a process of cross-cutting governance and public policies, the Antônio Lemos base should expand the already consolidated participation of the Pará State Secretariat of Public Security and Social Defense (SEGUP), combining it with that of the State Secretariat of Social Assistance, Labor, Employment and Income (SEASTER) and the State Secretariat of Public Health (SESPA). In a second phase, with the area more peaceful and assisted, the Civil Police could progressively reduce its participation, starting to act, under the same imperative of governance and risk analysis, in other regions where its presence is more strategic. Finally, in phase three, a joint action between public agents and private sector territorial agents would be implemented.

With the change in paradigms in public security and the presence of other state actors, another reflection of social innovation in this area would be the construction of advanced control posts to make waterway traffic safer, especially in the cargo mode, such as the convoys of trucking barges or the trains with dozens of soybean barges that pass through the Straits daily.



## FINAL CONSIDERATIONS

The objective of this article was to discuss the concepts of risk management, governance, and innovation in public security, based on the actions of Public Security in the Western Region of Marajó-PA, focusing on the phenomenon and the actions of the river bases in Pará. In the end, it was demonstrated how governance that is attentive to social risks and committed to innovation in public safety can have repercussions beyond this field, generating social development and, in the future, enabling the participation of private territorial agents, resulting in progress for regions that have historically been poorly served by the State.

Throughout the work, the importance of more elaborate and specialized river policing, based on river bases, was emphasized. A decade ago, SEGUP was presented with the need for a monitoring and policing system anchored by trained agents, dedicated exclusively to river policing and monitoring operations, who were prepared to respond to any incidents, in a similar way to what occurs with vehicles and land crews.

With the strengthening of control over airspace and highways, organized crime invested even more in waterways to smuggle drugs, weapons, and other products, intensifying river crime, which was already notable for robberies and sexual abuse against children and adolescents.

It is therefore urgent to implement the other river bases provided for in the 2014 study, to contain the increase in crime on the waterways. In this way, the rivers can become safer for riverside residents, for businesspeople in cargo and passenger shipping, and to improve connectivity between the municipalities connected by the waterways. This may, perhaps, contribute to improving the poor economic, education, and health indices, moving the region away from the unfavorable positions it currently occupies in the Brazilian HDI-M.

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