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ABSTRACT

The search for local and regional development models that respect the particularities of the Amazon and maintain the forest standing is not recent. The increasing attention on the production and management of sociobiodiversity products, such as açaí, reveals the potential of the bioeconomy as a driver of development aligned with Amazon conservation. In this context, it is important to understand the role of these economic dynamics from a regional perspective, especially in the small cities of the Amazon. Thus, this paper aims to discuss the role that the local economy and sociobiodiversity chains play in the small cities of the Amazon. To this end, it presents an investigative analysis of the economic development in the Intermediate Region of Breves - Pará, to understand how açaí production contributes to this local process. The research analyzed various types of data (primary and secondary) and field interviews conducted between 2014 and 2023. The results indicate that these small urban centers are unevenly integrated into the competitive açaí production and trade market, serving local, national, and global markets. Still, this has had little reflection on the endogenous development of these Amazonian localities.

Keywords: Small Cities. Amazon. Development. Sociobiodiversity Economy. Açaí.

RESUMO

A busca por modelos de desenvolvimento local e regional que respeitem as particularidades da Amazônia e mantenham a floresta em pé não é recente. A crescente atenção voltada à produção e manejo de produtos da sociobiodiversidade, como o açaí, revela o potencial da bioeconomia como vetor de desenvolvimento aliado à conservação da Amazônia. Nesse contexto, é importante compreender o papel dessas dinâmicas econômicas em uma perspectiva de desenvolvimento regional, principalmente nas pequenas cidades da Amazônia. Sendo assim, este artigo tem como objetivo discutir o papel que a economia local e as cadeias da sociobiodiversidade desempenham nas pequenas cidades da Amazônia. Para tanto, apresenta uma análise investigativa desse desenvolvimento econômico da Região Intermediária de Breves, no Pará, para compreender como a produção do açaí contribui com esse processo local. A pesquisa analisou diferentes tipos de dados (primários e secundários) e entrevistas de campo realizadas entre 2014 e 2023. Os resultados indicam que esses pequenos núcleos urbanos se inserem de maneira desigual nesse mercado competitivo da produção e comercialização do fruto, para o mercado local, nacional e global do açaí, mas que pouco tem refletido no desenvolvimento endógeno dessas localidades amazônicas.

Palavras-chave: pequenas cidades; Amazônia; desenvolvimento; economia da sociobiodiversidade; açaí.

INTRODUCTION

"The Amazon, before being homogeneous, is an extremely complex and diverse region" (Porto-Gonçalves, 2015, p. 1). This statement by geographer Carlos Walter is an acknowledgement of the socio-spatial diversification of this region. There are many "Amazons" within the Legal Amazon. In addition to the "green Amazon", the forest and its environmental problems, there is another, multicolored one, as a result of different socio-spatial processes related to occupation and economic exploitation. Becker explains that

> There are three great natural Eldorados in the contemporary world: Antarctica, which is a space divided between the great powers; the seabed, extremely rich in minerals and plants, which are spaces not legally regulated; and the Amazon, a region that is under the sovereignty of national states, including Brazil (Becker, 2005, p. 77).

Thus, like an *El Dorado*, the region had economic periods of "booms" and "busts" throughout its occupation process. Becker (2009) proposes three phases related to this process. According to the author, the first was established between 1616 and 1930, called "territorial formation", when control of the territory favored strategic locations in the Amazon, leading to progressive land possession and the formation of administrative units. From 1930 to 1985, the regional planning phase was structured when the occupation of the region accelerated. The third phase began in

1985, called “Heartland unknown”, from which the Region was configured as a socio-environmental frontier and several projects were implemented.

Santos (1980, p. 18) explains that the Amazon, throughout the 18th century, had an “agricultural cycle”, when cocoa, coffee, cotton and sugar cane were produced. “Agriculture was the main activity encouraged, offering an alternative or at least a significant complement to the primary collection of ‘drugs from the backlands’. [...], the main exportable product continued to be cocoa” (*Idem*).

The rubber economy prospered throughout the 19th century. According to Santos (1980), rubber “dethroned” cocoa, having become the “staple” of the Amazon”, mainly due to the increase in international demand. The author also explains that, despite the economic dynamics, “the problem of labor shortages was strangling the economy”, and there was a migration, both directed and spontaneous, to the rubber plantations (Santos, 1980, p. 117). The rubber economy would collapse for several reasons: biopiracy of *Hevea brasiliensis seeds* by the British government to Ceylon, which led to the dominance of rubber exports by the East; and the fall in rubber prices on the international market between 1911 and 1914 (*Op. Cit* ., p. 256-257).

These factors, as stated by Santos (1980), associated with the First World War and the technical incompetence of the Union, caused a great economic depression in the Region, which reached its peak in 1915. Its population, massively poor, remained that way (Santos, 1980). Brondizio (2008) states that, after this rubber boom, sugar production was resumed in some areas of the Amazon, such as the Amazon River estuary, but it began to decline throughout the 1950s.

After this economic decline, the Brazilian government defined some policies to boost the region’s economy. Becker (2009) divides this phase into two periods: between 1930 and 1966 and between 1966 and 1985. The first period encompassed the Vargas government, with the “March to the West,” the official delimitation of the region using scientific criteria, and the creation of the Superintendence for the Economic Valorization of the Amazon (SPVEA), which revealed regional concerns, although without specific actions in this area. During the government of Juscelino Kubitschek, from 1956 to 1961, under the motto “energy and transportation,” effective actions from a regional perspective were taken, such as the opening of the Belém-Brasília and Brasília-Acre highways.

Becker (2009) explains that it was only between 1966 and 1985 that regional planning in the Amazon actually began.

> The State takes upon itself the initiative of a new cycle of Amazonian invasion, in a geopolitical project for the accelerated modernization of national society and territory. In this project, the occupation of the Amazon assumes priority (Becker, 2009, p. 185-187).

All these phases were not enough to boost regional development, because they did not include structural changes in the region that would lead to the social transformation that is so necessary for Amazon to stop being seen only as a reserve of resources. On the contrary, they triggered an intense process of environmental degradation, as assessed by several authors (Moran; Brondízio; Batistella, 2008; Malhi *et al*., 2008; Brondizio *et al*., 2009, Haddad *et al*., 2024).

> By 2001, about 837,000 km2 of Amazonian forests had been cleared, with 1990s gross rates of □25,000 km2 year–1. Clearance is concentrated in the "arc of deforestation" on the southern and eastern margins, driven primarily by expansion of cattle and soybean production, and along the Andean piedmont. Amazonia lies within nine nations, but 80% of deforestation has been in Brazil and 70% of that is provoked by cattle ranching [1] (Malhi *et al*., 2008).

In the poorest and most vulnerable nations of the world, most cities and towns face dual pressures: rapidly growing populations and high vulnerability to the impacts of climate change, compromising the availability of natural resources. This in turn puts at risk water supplies, infrastructure, health and livelihoods in the very cities that struggle to meet or safeguard these essential needs (Dodman, 2008). This issue also permeates the small towns of the Amazon, so these are concerns that also drive us in this paper.

This paper is structured around this theme and aims to present a discussion on regional development in the Legal Amazon, to analyze the role that the local economy and sociobiodiversity chains play in small towns in the Amazon. As a case study, we analyze the small towns of the Intermediate Region of Breves (RegInt), located in the Marajó archipelago, state of Pará, using the example of the cities of Ponta de Pedras and Afuá.

1 By 2001, about 837,000 km² of Amazon forests had been cleared, with gross deforestation rates in the 1990s around 25,000 km² per year. Deforestation is concentrated in the "arc of deforestation" on the southern and eastern margins, driven mainly by the expansion of cattle and soy production, and along the foothills of the Andes. The Amazon is located in nine countries, but 80% of the deforestation has occurred in Brazil, and 70% of this deforestation is caused by cattle ranching.

METHODOLOGY

This paper is the result of 17 years of research on small towns in the Amazon River estuary. We used the case study method to deepen the discussion on urban economy, resident profile, and environmental aspects. In this process, the following were used: population data from the 2010 and 2022 Censuses (IBGE, 2010; IBGE, 2022); data obtained from the application of forms to residents of the cities of Ponta de Pedras and Afuá; procedures approved by the Research Ethics Committee (CEP) of the University of São Paulo 49693015.7.0000.5421, CAAE No. 69815317.8.0000.5503 and CAAE No. 50934121.9.0000.5503 approved by the CEP of the University of Vale do Paraíba. The forms were applied to more than 10% of the population in urban areas. The applications took place in July 2017, 2018, 2019 and 2023. The forms addressed the socioeconomic profile of the population, their social and commercial networks, among other issues relevant to the study.

The Gross Domestic Product - GDP data (IBGE, 2024), and RAIS - Annual Report of Social Information (Ministry of Labor and Employment, 2024), of the municipalities in the regions studied, data obtained from local and state public bodies during the field research were also used.

THE INTERMEDIATE REGION OF BREVES: GENERAL CHARACTERISTICS

The Legal Amazon Region is made up of 9 states (Acre, Amapá, Amazonas, part of Maranhão, Mato Grosso, Pará, Rondônia, Roraima and Tocantins) and comprises 772 municipalities (IBGE, 2022), therefore 772 cities, headquarters of these municipalities (Figure 1). Although the Amazon biome is present in 8 countries, 60% of the biome is in Brazil. According to Malhi *et al*. (2008), 80% of the deforestation in the biome occurred in Brazil, with 70% of this deforestation being caused by agricultural activities.

Regarding Amazonian cities, in the Legal Amazon, Trindade Jr. (2010) states that there is an urban diversity. Urban diversity "is revealed not only by different types of cities and by the existence of multiple types of urbanization that result from a single process, but also by mixed forms of spaces" (Trindade Jr., 2010, p. 235).

This urban diversity is also found in the Intermediate Region (RegInt) of Breves and is a reflection of the strong relationship and dependence of these cities on forest resources. This RegInt, established

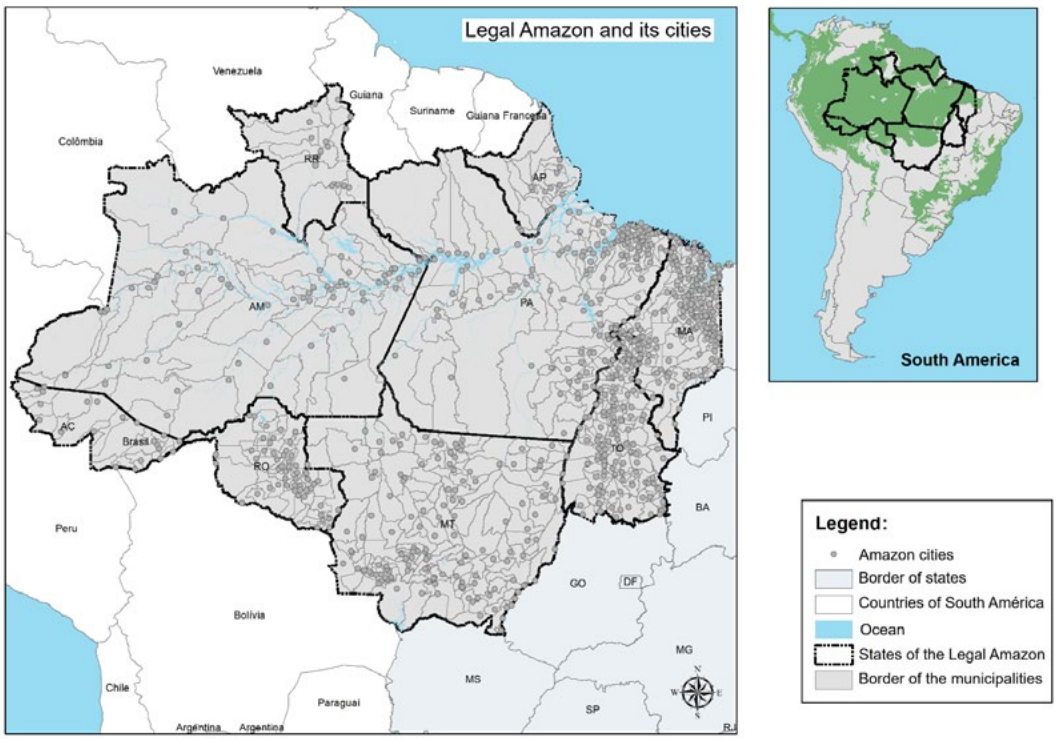
by IBGE (2017), is made up of 16 municipalities and, therefore, 16 administrative headquarters cities (Figure 2).

Of the 16 municipalities, 14 have less than 50,000 inhabitants in total. For the administrative headquarters of these municipalities, this population threshold, one of the parameters that characterize a small city, allows us to see that there is no city in this Region with more than 50,000 inhabitants.

Even so, three cities have over 20,000 inhabitants: Soure (21,015 inhabitants), Portel (24,852 inhabitants) and Breves (46,560 inhabitants), the main city in the Intermediate Region. In other words, by these parameters, there are no medium-sized cities in the Intermediate Region of Breves, but the city of Breves, the largest in demographic terms, also concentrates services and activities that meet the most basic demands of the regional population.

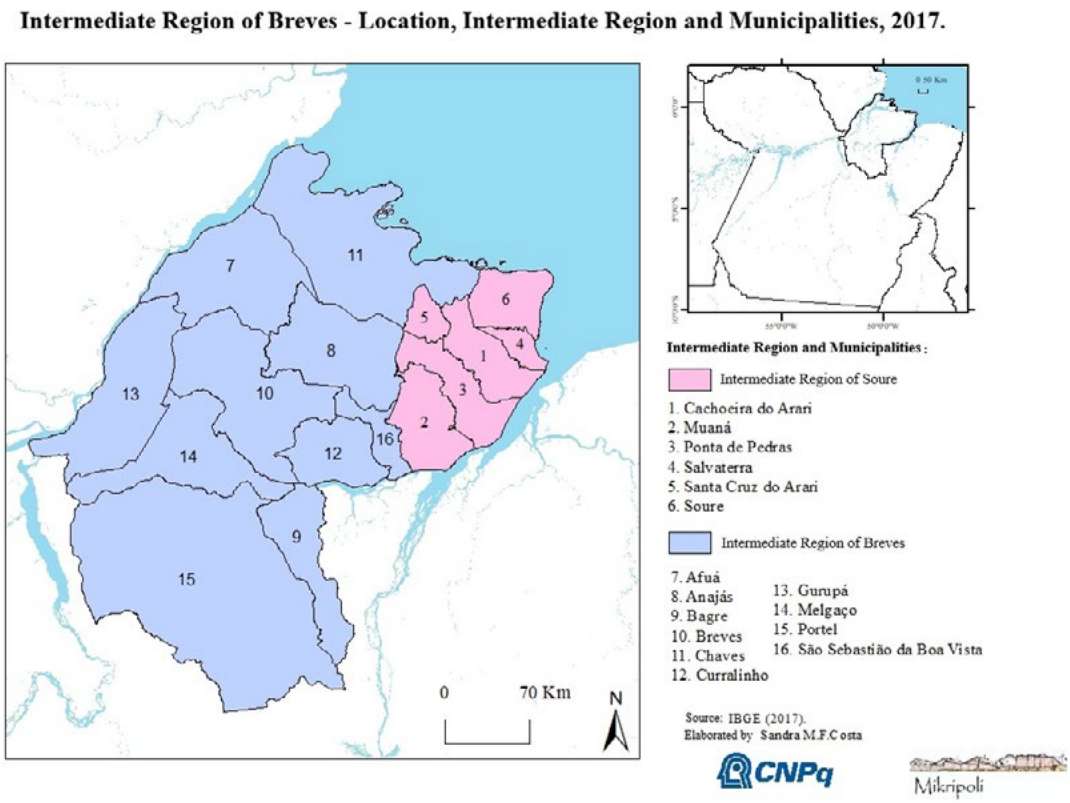
Regarding the spatial organization of these small towns, the Breves RegInt follows the pattern guided by the river and the forest, which are the main geographical attributes. Riverside towns form a network of economic and social relations that express the particularities of the place, even with the numerous problems and interdependence of services and resources.

Figure 1 | Composition of the Legal Amazon



Source: Collection of the Laboratory of City Studies - UNIVAP, based on data from IBGE (2022).

Figure 2 | Location and composition of the Breves RegInt.



Source: Collection of the Laboratory of Cities Study- UNIVAP (2024).

REGIONAL DEVELOPMENT, ENVIRONMENTAL PROBLEMS AND THE SOCIO-BIODIVERSITY ECONOMY IN THE AMAZON

In the context of the discussion presented in this paper, it is important to understand the meaning of regional development. Correa, Silveira and Kist (2019, p. 4) consider that the meaning of development "has been shown to be polysemic over time". The authors state that this process occurs unevenly across space and, when it begins at specific points, "has the characteristic of strengthening the most dynamic regions to the detriment of the less dynamic ones" (*Idem*, p. 7). Celso Furtado considers that "what characterizes development is the underlying social project. [...]. When the social project prioritizes the effective improvement of the population's living conditions, growth metamorphoses into development" (Furtado, 1984, p. 11-12).

An important aspect, highlighted by Correa, Silveira and Kist (2019, p.10), is that industrialization, *per se*, does not guarantee continuity of development, as social changes need to occur. Thus, regional development can be shown to be an important aspect of territorial policy, "as it is a historical process that requires transformation in the social and economic bases", which can be built collaboratively, with the participation of all actors in the region (*Idem*, p. 12). In addition, Theis *et at*. (2022, p. 262) reinforces that regional development is "the" remedy with which we seek to combat inequalities. Nevertheless, there is not just "one" remedy for regional disparities" (Theis *et al*., 2022, p. 262).

Etges and Degrade (2013, p. 88) explain that socio-spatial inequalities are intrinsic to the capitalist mode of production and the way it was established. For the authors, "inequality is one of its characteristics and also one of its consequences". For a long time, overcoming regional inequalities would occur solely through industrialization, a way of overcoming underdevelopment and poverty (*Idem*). This model was predominant between the 1950s and 1970s in peripheral countries, including Brazil, which sought to follow all of its guidelines (*Id. ib*.). This economic conception was reflected in the regional structuring of the Brazilian Amazon.

It is known that, after the 1960s, the Amazon was the target of different federal government policies. After the 1964 coup, the military government began a new phase of development programs and economic exploitation of the Amazon Region.

Kohlhepp (2007, p. 480-487) explains that regional development planning for the Amazon Region over the past five decades can be divided into four main phases, each with very different objectives: 1) the National Integration Program (PIN), proposed in the first half of the 1970s, was based on the concept of "development axes" planning, established through the construction of numerous roads, such as the Trans-Amazonian Highway and others, which constituted migration/colonization axes for the Amazon and were planned to establish areas of economic activity; 2) the Polamazônia Program from 1974 to 1980, proposed at the height of the Brazilian "economic miracle," involved sectoral economic exploration, increasing the participation of private capital, becoming the new central focus of the development strategy, based on sectoral focal points such as, for example, the extraction of mineral resources or cattle-raising areas with possible industrial processes; 3) Integrated rural development programs from the early 1980s, based on the idea of agricultural colonization by small farmers, such as the Polonoroeste Program

in Rondônia and northwest Mato Grosso, financed by the World Bank; 4) Megaprograms from the 1980s, such as the "Grande Carajás Project", which, in addition to not strengthening regional development, paid a high price for the economic growth of megaprojects, contributing heavily to the destruction of the tropical forest and ecological and social degradation.

Thus, during the period of Brazilian national developmentalism, the Amazon was occupied by understanding the heterogeneity of this concept, which was reflected in the cultures and lifestyles of populations that were excluded from the development process - such as riverside communities and indigenous peoples. Another important aspect is the reflection of these policies on the environmental commitment of the Region. One example was the speed of deforestation and the spread of fires, which increased after the 1970s (*e.g.*: Fearnside, 2000; Nepstad, 2000; Kohlhepp , 2007; Edmonds *et al*., 2020; Anthony *et al*.; 2021).

> There is no way to accept the simplistic idea that certain ecological spaces must correspond to economic spaces, in a full and totally adjustable overlap. [...].
>
> The pseudo-planning that was committed, done remotely, in the phase that founded the opening of the Trans-Amazonian highway, has no parallel anywhere in the world, in terms of lack of notion of scale, civil liability for predatory proposals, and lack of effective knowledge of the physical, ecological and social reality of the Brazilian Amazon (Ab'Saber, 1989, p. 5-8).

In this regard, several authors have discussed the importance of reviewing the economic model adopted by government policies that have compromised the quality of life of its residents and the conservation of the biome. To this end, models that seek to value the standing forest while also engaging with the population's way of life have been identified as more appropriate to the reality of the Amazon, with a focus mainly on the Non-Timber Forest Product (NTFP) chains, such as açaí, chestnut, buriti, andiroba, cupuaçu, palm hearts, among others. The interest in these products lies precisely in the potential win-win between economic development and forest conservation, since such products are part of the Amazon's own food, material and cultural base and depend on a symbiosis with the forest. In recent years, both the private sector and various non-governmental policies and initiatives have sought ways to foster sociobiodiversity product chains, defined here as those "that express the interrelationship between biological diversity and the diversity of sociocultural systems" (Brazil, 2009, p. 9). Therefore, it is worth highlighting that the incorporation of the centrality of the social aspect as an inseparable component of

ecological and biodiversity conservation objectives has been the subject of policies linked to traditional communities and family farmers (Ferreira *et al.*, 2024).

Brazil is a signatory to the Convention on Biological Diversity (1998) and, in 2003, the National Biodiversity Policy established as one of its objectives the promotion of sustainable use of biodiversity, while taking into account social, cultural and environmental aspects. In 2007, the practices of traditional peoples and communities were recognized through a specific policy, which seeks to place greater emphasis on the defense of their ways of life, the protection of their territories and their human, economic, social, cultural and environmental rights. Subsequently, in 2009, an inter-ministerial effort launched the National Plan for the Promotion of Sociobiodiversity Product Chains (Brazil, 2009).

More recently, efforts to institutionalize the bioeconomy agenda have gained greater relevance in national development strategies at different scales and sectors. In 2023, the National Secretariat for Bioeconomy was created under the structure of the Ministry of Environment and Climate Change. In 2024, the National Bioeconomy Strategy (Decree No. 12,044/2024) was drafted, which defines the bioeconomy as "the model of productive and economic development based on values of justice, ethics and inclusion, capable of generating products, processes and services, efficiently, based on the sustainable use, regeneration and conservation of biodiversity, guided by scientific and traditional knowledge and by its innovations and technologies, with a view to adding value, generating jobs and income, sustainability and climate balance".

Still, the breadth and lack of clarity of the concept of bioeconomy can be detrimental to the peoples and ecosystems of the Amazon, by allowing activities that focus exclusively on economic, industrial or innovation aspects to the detriment of the social character to be classified as bioeconomy, which leads different authors to advocate the terms sociobiodiversity (Galvanese *et al*., 2024) or sociobioeconomy (Ferreira *et al*., 2024).

And how do small cities fit into this discussion? As Ab'Saber (1989, p. 5) mentioned, it is important to reevaluate the "role that cities and the pre-existing urban network can play in the processes of incentivized development". These are situations that need to be considered in order to think about a sustainable future for the Amazon Region.

SMALL TOWNS/LOCALITIES AND THE ECONOMY OF SOCIOBIODIVERSITY: THE INTERMEDIATE REGION OF BREVES, PARÁ.

The Brazilian urban network is made up of approximately 90% small urban centers. Like the entire national territory, the Brazilian Amazon is dominated by small cities/towns. According to data from the IBGE (2010, 2022), until 2010, small municipalities, with a total population below 50 thousand inhabitants, represented 88.7% of the 772 municipalities, and brought together 44.7% of the total population of the Region. In 2022, these data did not vary much, with 87% of the municipalities having up to 50 thousand residents, incorporating 38.2% of the residents.

Considering only the population residing in the administrative headquarters, therefore the urban population, it is observed that 72.4% of the population of the Legal Amazon, in 2010, lived in cities of different sizes (IBGE, 2010). Although cities with more than 200 thousand inhabitants bring together 42% of this urban population, small cities, with less than 50 thousand inhabitants, represented more than 93% of these cities, where 40% of the urban residents of the Region lived. In other words, despite being invisible, these small cities contributed to the formation of an "urbanized forest" (Becker, 1985). Cardoso, Dal'Asta , Monteiro (2023, p. 1) clarify that past, or native, urbanization, which fully incorporated the forest, was not understood as such and was not part of the government's agenda, nor was it present in academic discussions.

Thus, we can affirm that small cities play a fundamental role in the regional urban network, due to the services they offer and the social and cultural relations they foster, in addition to their importance for the Amazon region, for the country and for the world. Still, to understand them, and their importance for the regional and socio-environmental-economic discussion, it is necessary to understand that "these networks of centralities configure locations between rivers and forests, establishing an urban-rural continuum, and not an urban-rural dipole. It is necessary to defocus the agenda of the urban-rural duality" (Cardoso, Dal'Asta, Monteiro, 2023, p. 3).

Small cities in the Amazon usually have weak and fragile economies of transformation, high dependence on federal and state transfers, greater availability of jobs in the public sector, low capacity to offer basic services, such as access to infrastructure, education and public safety, and a predominance of economic activities related to forest resources, which often function as

part of an informal economic system (Guedes, Costa and Brondizio, 2009; Costa and Brondizio, 2009). Though, in these places, ways of life are pulsating (Oliveira, 2006, p. 27-28).

Costa *et al*. (2012, p. 57) explain that, while most cities in the Amazon are the result of the last 40 years of regional dynamics, such as those located on the agricultural frontier, the cities in the floodplain region of the Solimões and Amazon rivers, "large and small, comprise 300 years of history of urban formation, and an economy based on forest resources". Considering small cities, Oliveira (2006) corroborates Costa *et al.* by stating that small riverside cities seem to have their social and economic dynamics linked to the dimension of sustainability and biotechnology, which have linked these spaces to the world, even if indirectly. One example is the influence that açaí production has had on the economy of these small cities (Brondizio, 2008; Costa *et al*., 2017). Extractivism is an important source of income for several other municipalities in the Amazon, such as Nhamundá. According to Antunes, Costa and Bartoli (2024, p. 8), this municipality, considered small, is controlled by the primary sector of the economy, with the basis of the economy being production from plant extraction and agriculture. For the authors, the most important product is the Brazil nut and its production in the municipality can create sustainable development alternatives.

To deepen this discussion, we bring the example of the Intermediate Region of Breves, in the state of Pará, in particular the situation of two small cities/municipalities: Afuá and Ponta de Pedras, located in the Marajó Archipelago. These two municipalities, used as case studies, are large producers of açaí.

THE ECONOMY OF AÇAÍ: THE CASE OF AFUÁ AND PONTA DE PEDRAS

Even though it is considered a "country with long periods of economic instability", Brazil is present and active in the forestry products market, being one of the countries that exports the rawest materials from these bases (Gonçalves Júnior *et al.*, 2024, p. 09). According to Silva *et al*. (2024, p04), "in 2021, the trade balance of the Brazilian forestry sector was US$ 10.7 billion, a growth of 20% compared to 2020". Açaí production has contributed to this growth.

A native fruit of the Northern Region, açaí had its greatest development in the floodplains of the Brazilian Amazon (Bentes *et al*., 2017). According to the National Supply Company (Conab, 2019), the largest producers of açaí are, respectively, the states of Pará and Amazonas, and in 2016, their production totaled 87.50% of the national production, with Pará, in the period of 10 years, increasing its production of açaí: in 2006, production was 88,547 tons, in 2016, 131,836 tons were obtained (Tavares and Homma, 2015; Conab, 2019), a gradual and significant increase in production, representing a growth of 48.88%.

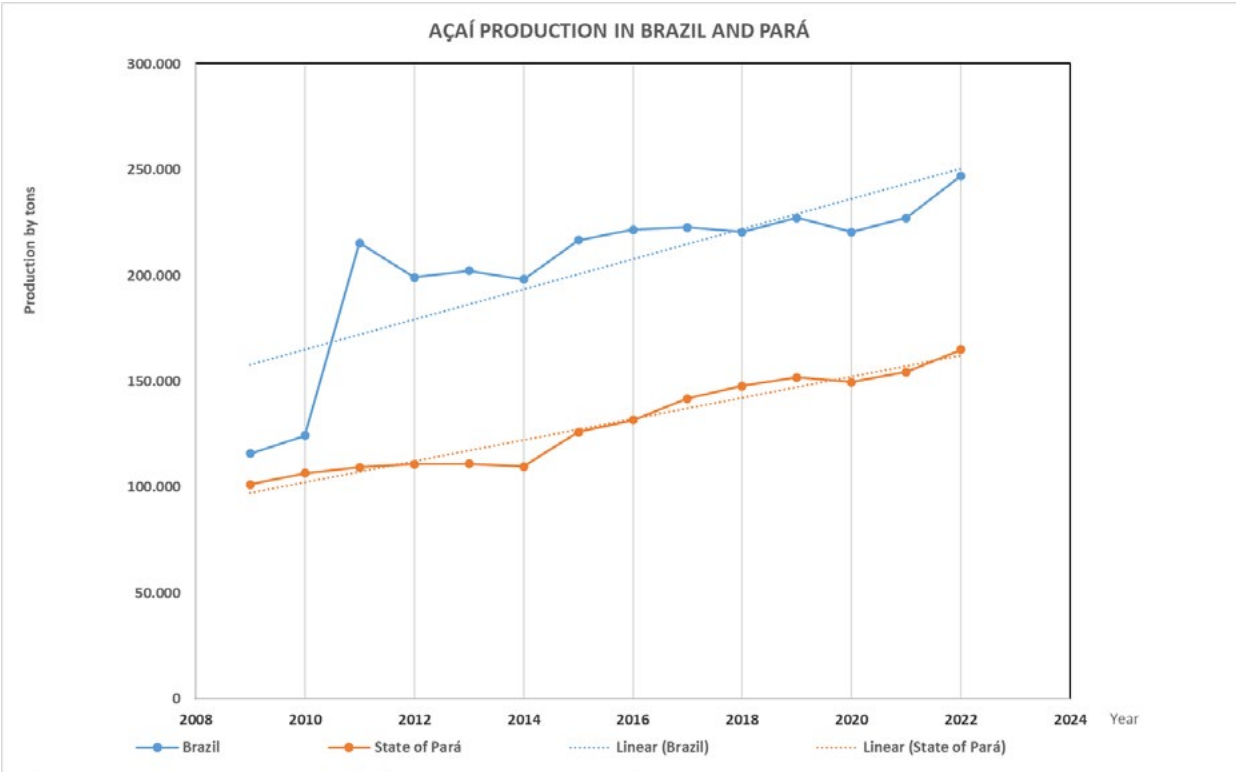
Brondizio (2008) explains that the expansion of the açaí fruit economy occurred due to a combination of internal and exogenous factors in the region. According to the author, this expansion cannot be understood solely as a product of rural migration and urban growth, but is historically related to local eating habits, as a culture, and to the international market, as food and fashion, a symbol of healthy living, environmentalism and social intelligence. In the Amazon River estuary, açaí production predominates as the economic base of many municipalities, a resource that does not generate direct taxes for the location, considering its extractive nature (Brondízio, 2008). "The phase of urban staple food is characterized by a boom in consumption of açaí as a staple food in large regional urban centers [...] nationally, and more recently internationally" (*Idem* , p. 172).

Figure 3 shows that açaí production has increased significantly in Brazil and in the state of Pará, which accounts for more than 80% of national production. Açaí fruit production in this state is concentrated mainly in the Amazon estuary region, where the municipalities of Afuá, Ponta de Pedras, Igarapé- Miri, Abaetetuba, and Cametá stand out as the main production centers. Açaí palm trees, which grow naturally in floodplains and igapós, are cultivated both in agroforestry management areas and in more intensive production systems.

Table 1 shows the list of the largest açaí producing municipalities in Brazil. Among the 20 largest producers, 9 (45%) are municipalities in the Breves Region (Afuá, Muaná, São Sebastião da Boa Vista, Ponta de Pedras, Breves, Cachoeira do Arari, Anajás, Curralinho and Portel), which are responsible for 24% of the production of the state.

In rural communities in the municipality of Ponta de Pedras (Pará), the expansion and intensification of the açaí market in the last two decades has played a crucial role in family decisions about migration and land use (Padoch *et al*., 2008). For example, access to resources and economic opportunities has allowed landless rural families, such as sharecroppers, to invest in urban housing and expand educational options for their families, without completely breaking ties with rural production areas. Nevertheless, attention is drawn to the increased demand for the product, which can generate pressure on natural resources, leading to the intensification of palm tree management and, in some cases, deforestation or loss of biodiversity (Cunha & Costa, 2020).

Figure 3 | Açaí production in Brazil and Pará by tons from 2009 to 2024.



Source: IBGE – Cities (2024).

Table 1 | Açaí production in the 20 largest producing municipalities in the country, in tons.

Municipalities	1990	2000	2010	2018	2019
Limoeiro do Ajuru	15,877	15,254	20.231	41,000	42,000
Oeiras do Pará	350	2,845	8,909	26,000	26,500
Afuá	800	2,585	4.100	9,250	9,300
Mocajuba	5,660	4.209	5,378	8.100	8,200
Muaná	741	5,650	8,505	7.260	7,000
Inhangapi	250	222	3.781	7,000	7,500
São Sebastião da Boa Vista	738	4.100	7.166	6,852	6,300
Ponta de Pedras	42.150	10,600	13.197	6,250	6,000
Magalhães Barata	-	-	2,750	4,000	4,500
São Domingos do Capim	19	198	2.120	4,000	4,500
São Miguel do Guamá	3.995	1.603	4,700	3,500	3,800
Igarapé-Miri	2,400	9,000	5,800	2,900	2,700
Marapanim	-	50	1,600	2.200	2,500
Breves	110	220	810	1,562	1,620
Cachoeira do Arari	-	3.010	3,296	1,548	1,487
Anajás	191	290	980	1,250	1,350
Curralinho	80	350	920	1,250	1,800
Baião	925	848	477	1.029	1,100
Portel	12	35	450	980	1,000
Barcarena	2,550	4.100	2,500	900	700

Source: Adapted from Tavares *et al.* (2022).

Açaí is part of the landscape of these small towns. The açaí gardens not only make the surroundings more pleasant but also allow the fruit to be harvested during the harvest season for family consumption. Figure 4 shows the location of the two towns and the açaí gardens of Afuá and Ponta de Pedras.

The small cities of Afuá and Ponta de Pedras had, in 2022, 11,875 and 11,753 inhabitants, respectively (IBGE, 2022). Access to these cities is only via the river system and, in particular cases, by small aircraft. The average family income is low, according to forms applied to urban residents, with 50% of families in Afuá receiving up to 1 minimum wage[2] and in Ponta de Pedras, 49%. The HDI (Human Development Index) of both municipalities, in 2010, was considered equally low, with Afuá presenting an index of 0.489 and Ponta de Pedras 0.562. According to data from RAIS (2016), the majority of employment relationships, with a signed work contract, belonged to the public administration, both in Ponta de Pedra, with 86%, and in Afuá, with 85%. Nonetheless, the urban aspect of these small cities is predominantly defined by the service sector, which is able to meet the economic profile of the majority of the population. These are indicators that reinforce the social vulnerability of these municipalities and their administrative headquarters.

Figure 4 | Açaí palm gardens, in the cities of Afuá and Ponta de Pedras, in Pará.

Source: Collection of the City Study Laboratory - UNIVAP (2024).

2 According to Decree 8,948/2016, on 01/01/2017, the minimum wage was BLR 937.00.

The small towns, headquarters of these producing municipalities, have become the base of the açaí production chain, considering that the açaí harvested in the city or municipality is transported to the açaí fairs, where it is sold locally, or even in other cities, such as the Belém fair, or even sold directly to the pulp-producing factories, many of which insert the product in the national or international market [3]. In figure 5, the images represent the açaí production system in the small towns of Afuá and Ponta de Pedras. In the figure: a) These are açaí fruits harvested by workers in the riverside communities , to be sold at the port in Belém - Pará, where local traders and some pulp factories buy this merchandise; b) Boat collecting the açaí production in the rural communities of Ponta de Pedras, to be taken and sold at the port in Belém - Pará, the boatmen are known as *marreteiros*; c) Açaí Beater sales point; d) Planting of açaí in the floodplain area; e) point of sale in the city. In this scenario, small cities in the Amazon, such as Ponta de Pedras and Afuá, located in the Marajó Archipelago, have a strong economic base in the production and sale of floodplain açaí.

Figure 5 | Açaí production chain

Source: Collection of the Laboratory of City Studies (2018, 2019, 2020, 2023).

3 Nascimento, Igor. Açaí from Pará conquers the Arab market and stands out at COP 28. Available at: https://www.agenciapara.com.br/noticia/49847/acai-paraense-conquista-o-mercado-arabe-e-se-destaca-na-cop-28

Thus, the açaí economy plays a fundamental role in generating income for many families in urban and rural areas of the Amazon, especially in Pará. In the municipalities of Ponta de Pedras and Afuá, this importance is reflected in the economic activities related to the açaí production chain, such as the extraction, commercialization and processing of the fruit.

According to data obtained through forms given to urban residents, 9.6% of household heads in Ponta de Pedras and 9.5% in Afuá stated that their economic activities are directly linked to açaí production. In addition, another relevant piece of data reinforces the economic impact of the sector: in Ponta de Pedras, 13.8% of household income comes from these activities, while in Afuá this percentage is 7.1%.

These figures highlight the importance of the açaí production chain as one of the main sources of livelihood for many families, especially in regions where formal employment options are limited. In addition to being a cultural symbol, açaí is an essential economic pillar for local and regional development.

Considering this information, based on almost two decades of research, it is stated that the economic activity linked to the management of açaí is of great relevance for the municipalities of the Intermediate Region of Breves, in Pará, where many families depend directly on this production chain to generate income. Açaí not only sustains the local economy but is also culturally integrated into the life practices of these communities. Nonetheless, the uncontrolled expansion of this activity, motivated by the increase in international consumption of the product, represents a significant threat to the biodiversity of the Amazon rainforest and to the economic survival of the families who make a living from this activity.

With the increasing demand for açaí, especially in the global market, increasingly larger areas of the forest are being converted to açaí monoculture, which can compromise the biological diversity that is crucial for the ecological balance of the region, especially the Delta (Anthony *et al*., 2021). The simplification of ecosystems — with a focus on a few species, such as the açaí palm — negatively affects other components of biodiversity, such as plants, animals, and even the natural cycles of the forest. In addition, inadequate management practices can aggravate problems of soil degradation and deforestation.

FINAL CONSIDERATIONS

The Amazon region has been continually affected by human actions, from the initial policies as a Portuguese colony to the present day, with the loosening of environmental preservation and deforestation control laws. It can be said that the colonialist policies in Brazil have not ceased, they have simply undergone modifications and are currently taking different forms. Thus, current economic actions can be seen as "Contemporary Colonization", mainly from the perspective of large entrepreneurs approaching the region, since the objective continues to be the international market, without considering local needs. These practices can lead to the decharacterization and degradation of the forest and the perishing of the population that lives off the forest's resources.

Açaí production in Pará is an example of how a product of Amazonian biodiversity can boost local economic development while posing challenges for environmental and social sustainability. The future of açaí production in Brazil will depend on the ability to balance economic expansion with the preservation of ecosystems and the well-being of producing communities.

Some suggestions could allow economic growth based on açaí without putting the future of the forest and the communities that depend on it at risk. In this way, it is possible to combine economic development with environmental conservation in the Breves Region. One example would be to encourage the use of techniques that respect natural cycles and maintain the health of the soil and forest. This includes the use of agroforestry systems and management techniques that regenerate degraded areas. Another solution would be for local and regional governments to create incentives for practices that respect biodiversity. More than encouraging the expansion of the production of these products, such as açaí, we should expand the discussions on what economy is possible to reduce the social vulnerability of the Amazon Region and, at the same time, protect the forest. Preserving what has always existed and producing in harmony with the forest will be the true environmental revolution in the region, much more profound and transformative than the simple "regreening" of areas already degraded by economic practices established in the name of an unattainable "regional development."

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