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# Perspective Chapter: Belem and Manaus and the Urban Agglomeration in the Brazilian Amazon

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## Abstract

Exploring the results of research on the relationship between urban agglomeration and the Brazilian Amazon region, this chapter demonstrates, from a comparative study between the two main metropolitan agglomerates - Belem and Manaus -, the different ways of production in the regional space. Based on the organization, systematization, and analysis of data regarding the main elements of the urban structure in both agglomerates, namely: the patterns of housing settlements of the upper, middle, and lower classes; the distribution of industrial zones and the patterns of urban expansion, we sought to highlight the intra-urban differences between the two metropolises, considering their importance in the configuration of the regional urban network. The most recent evidence points to two quite different metropolitan structures, explained both by the distinct nature of the urbanization processes that produced them and the highlighted intra-urban characteristics.

**Keywords:** urban agglomerate, regional metropolises, Belem, Manaus, Amazon

## 1. Introduction

The Amazon region, identified throughout history by its biogeographic and morphoclimatic characteristics, has undergone a significant change in its tropical forest natural landscape from the second half of the twentieth century, which is no longer the only visual reference. This change, resulting from the production of the regional space, places cities and the urban as the main territorial reference at the beginning of the twenty-first century.

The image of the urbanized forest as a reference [1] is a symbol of this transformation. Following the urbanization trends in the Brazilian territory, the region had about 70% of its population living in urban areas in 2010, in contrast to the 30% in the 1950s, according to the Brazilian Institute of Geography and Statistics (IBGE). More than the statistical expression of this change in the composition of the regional population, these data show a trend toward the formation of urban agglomerates as a basis for spatial planning.

This arrangement was made possible by the formation of a frontier economy since the formation of cities in the Amazon was part of the implementation of a

regional urban network, the locus of action of the institutions responsible for the integration [2].

This evolution of urbanization demonstrates the genesis of urban “condensations” since it is related to the increase in the number of cities in certain regions of the settlement system [3]. In this case, it is necessary to consider that, for the study of urbanization processes, the presence of these densities is as important as the increase in the size and number of cities or changes in their hierarchical structure.

However, thinking beyond the urban density in a more recent period, a new quality emerges in the dynamics of the urbanization of the Amazonian space, which can be classified as the emergence of metropolitan agglomerates in line with the metropolization movement of the Brazilian space.

The repercussions of this metropolization process in the Amazonian space arise from the need for expansion toward the frontier and the new patterns of capital accumulation and regional labor market organization, but it also concerns the general movement of urban complexification of Brazilian society [4]. Regional metropolization is associated with a pattern of transition from urbanization of society and territory to a trend toward the metropolization of space. It is from this interpretation that the Amazonian metropolitan agglomerates are presented.

However, if the socio-spatial processes of regional metropolization show up as a revealing trend in Amazonian urbanization, this does not mean that such processes have homogeneous configurations. On the contrary, the region has metropolitan agglomerations that present different characteristics, either to the type of economic-spatial dynamics that potentiates metropolization, or about a particular landscape produced as an expression of deeper processes.

The metropolitan agglomerates of Belem and Manaus, the two main cities in the region, are the references for this analysis since it is about recognizing the spatial manifestations expressed in them from a description of their constitutive characteristics as urban and regional phenomena.

## **2. Urban agglomerates and regional metropolization**

The metropolitan reality is present throughout the Brazilian territory to a greater or lesser extent, and it has been also expressed in the regional Amazonian context in recent decades, in which significant portions of the region currently follow the trends of metropolization. The configuration of this phenomenon in the regional scenario is a consequence of various aspects of the globalization expansion and how this process is presented in the region, considering the insertion of the Amazon in the internationalization of the Brazilian economy since the mid-1970s, through integration and development policies.

The territorial impacts of the world economy unfold in two related manifestations: the ones that act on the intra-urban level and those that express themselves on the regional level around the metropolises. The metropolises of regional projection are parts of this global economic geography, causing transformations that can be synthesized as follows “The current world-system causes a “multi-scale restructuring of capitalist socio-spatial configurations”, leading to “qualitatively new geographies of capital accumulation, state regulation, and uneven development” [5].

Considering the official data (**Table 1**), 72% of the population in the Amazon region is in urban centers. Although they can be evaluated according to different degrees of lack and precariousness regarding basic services, the existing urban centers must be considered as constituents of an urbanization model. In addition, urbanization cannot be measured only by the spread of the urban stain or even by the emergence of new cities, but also by the dissemination of its values by society.

Year	Urbanization rate (%)
1950	29.60
1960	35.70
1970	42.70
1980	50.20
1991	57.83
2000	69.83
2010	72.80

Source: IBGE [6].

**Table 1.**  
*Brazilian Amazon urbanization.*

In this case, it is recalled that the image of the Amazon as an “urbanized forest” had spread as virtuality since the 1980s.

Although it is possible to speak of metropolization, it is important to bear in mind that this process is not hegemonic in the Amazon case. For this reason, a particular type of extensive urbanization [7] is identified in the region, that is, a diffusion pattern of an urban way of life in the territory that does not need an exclusive urban center, but rather that it spreads in the territory of production relations and general living conditions, which have significant urban content to the point of creating demands with metropolitan profiles [8].

This characteristic of urbanization expansion with intensifying metropolization generated the interpretation that the settlement systems configuration in the Amazon is irregular and detached from a general principle of spatial organization. In this case, there is a whole literature stating that regional urbanization would be functionally disjointed from industrial and agricultural regional developments, because while agricultural expansion and industrial growth are limited to specific locations in the Amazon, the growth of the urban population is widespread across the region, leading to the conclusion that the urbanization process is disconnected from local development processes [9].

I assume a different theoretical premise to analyze the process of regional urbanization from the metropolitan agglomerates because in the two metropolises analyzed - Belem and Manaus - the existence of metropolization relates exactly to the networks of relationships that keep the Amazon, in a varied way, connected to global economic forces, which would be a general guiding principle of regional metropolization, and therefore not a reflection of an alleged functional disarticulation.

In Belem, this manifests itself through the expansion of the connection networks of the metropolis with the most dynamic regions of the countryside, through the expansion of the urban network dispersion radius and the logistical infrastructures that follow it.

In Manaus, the location of an industrial hub that connects the city to global networks of production and circulation of goods, with a relevant degree of specialization, becomes a “knot” in the international network of cities.

Therefore, it is relevant to understand that, unlike the urbanization and metropolization process in other regions of Brazil, in which the expansion of the urban area happened along with the process of the conurbation and the creation of territorial mobility networks strongly marked by industrialization, the Amazonian urbanization is characterized by the allocation of a set of the system of objects in the territory and a system of punctual actions - the large



objects [10], which provided the regional urbanization for the expansion of the frontier economy.

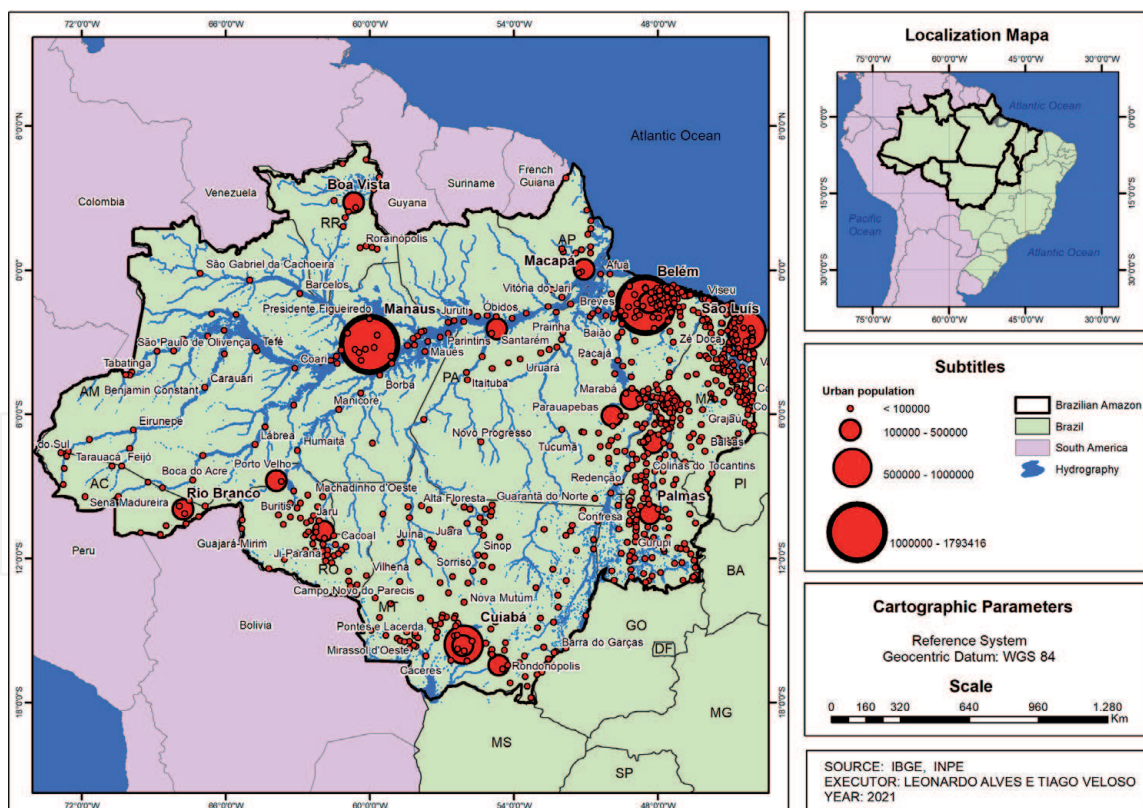
Based on these aspects, it is assumed that the space metropolization in the Amazon region is inserted into two sets of variables. In the first one, the existence and expansion of metropolization is functional to the new forms of appropriation and capitalist accumulation on a global level, in which the production of value in the urban space leads to the consolidation of new forms of accumulation.

The second variable is linked to the internal structuring axis of the metropolises. The fragmentation of space in these agglomerations demonstrates this unequal reality produced as one of their elements in common, despite their different patterns.

These agglomerates represent an important aspect of regional dynamics in a long historical period, being carriers of a reality that reflects what the process of regional metropolization is nowadays. The importance of Belem and Manaus as the largest agglomerations in the Brazilian Amazon is expressed in **Figure 1**.

Although pre-1960 regional history helps to identify the genesis of these agglomerations, it must be considered that it is the integration and development strategies in the second half of the twentieth century that intensify the current urban occupation pattern, expressed in their population growth (**Table 2**)<sup>1</sup>.

According to the data, Belem presents oscillation with a decreasing trend of demographic concentration in its metropolitan space, although the institutional area has been significantly expanded in the analyzed period, with the insertion of new municipalities in the Metropolitan Region of Belem (MRB). These



**Figure 1.**  
*Brazilian Amazon: cities populations (2010).*

<sup>1</sup> The percentages of the populations in the agglomerates were calculated considering the contingent of the main municipality and the populations of the metropolitan municipalities. As new municipalities were included, they started to be added to the count, considering the decades in which the metropolitan regions were constituted.

Year	Pop. Belem/PA (%)	Pop. Manaus/AM (%)
1950	22.70	27.16
1960	25.93	24.31
1970	30.00	32.70
1980	28.50	44.34
1991	25.10	48.05
2000	29.00*	49.90
2010	27.90*	61.10*

*\*It considers the municipalities that became part of the Metropolitan Region.  
 Source: IBGE.*

**Table 2.**  
*Belem and Manaus: Metropolitan population in relation to the states.*

municipalities were in part created from divisions and dismemberments of the municipalities that already made up the MRB.

Manaus, on the other hand, has the opposite trend, with increasing demographic concentration. This trend is explained by the significant growth from the implantation of the Manaus Free Trade Zone (MFTZ) and the Manaus Industrial Pole (MIP) in the 1960s. More recently, the inclusion of municipalities at the time the Metropolitan Region of Manaus (MRM) was created explains the population increase, given that the population of the municipalities becomes part of the metropolitan region.

In line with the trend of the participation of the metropolitan population in the state total, a similar aspect is observed when we consider the degree of concentration of the metropolitan Gross Domestic Product (GDP). In the two states (Amazonas and Pará), a significant percentage of wealth is concentrated in the metropolitan region, although this is more intense in Amazonas, with 85% of GDP concentrated in the Metropolitan Region of Manaus. In turn, Pará has important concentration levels, with the Metropolitan Region of Belem participating in 35% of the state's wealth (**Table 3**).

These trends are related to the way in which the integration and urbanization policies of the territory were established, which are part of the differences since there is an overlap between the formation of the metropolises and their regional surroundings.

In this case, there is a set of elements that help to demonstrate such differences, such as the induction of metropolization, the types of connections established with the global plan and the regional scale, the types of circulation systems, and the ways of territorial management that present distinct characteristics in the two agglomerates, making up a mosaic of diversity, much rather than the homogeneous reproduction of the same process. Such elements (**Table 4**) reaffirm the argument of the

State	Metro. Region	Amount (R\$ 1.000)				Share (%)	
		State Total	Metrop. Region Total	Core City	Other cities	MR/ State	Core City / MR
Amazonas	Manaus	39.166.314	33.426.618	31.916.257	1.510.361	85.3	95,5
Pará	Belem	44.375.376	15.680.400	12.520.322	3.159.818	35.3	79,8

*Source: IBGE.*

**Table 3.**  
*Amazonas and Pará: Participation in the Gross Domestic Product of the metropolitan region and the state (in current R\$ thousand) – 2010.*

Elements/Metropolises	Belem	Manaus
Metropolization inducers	Dismantling of old agrarian and riverside structures of the hinterland and modernization of the tertiary sector	Modernizing agglomeration economy of the Manaus Free Trade Zone
Global connections	Large economic project and modern export port system	Assembly industry and globalized tourism.
Main modalities of regional articulation	River – road – airway	River – airway
Growth of the metropolis in relation to the region	The region grows more than the metropolis, with a tendency toward demetropolization.	The metropolis grows more than the region, with a profile of a macrocephalic metropolis.
Intrametropolitan Configuration	Scattered, discontinuous with the presence or absence of conurbated satellite cities	Concentrated, continuous, without satellite cities or conurbation
Segregation Pattern	Concentration of classes with high purchasing power and increasing suburbanization of urban poverty	Concentration of classes with high purchasing power with increasing suburbanization of poverty and formation of selective sectors in pleasant suburbs
Urban fabric Configuration	Urban fabric of double configuration (conurbated and discontinuous) and unified by a system of regular flows	Single, not conurbated urban fabric, with recent and rarefied connections with adjacent municipalities
Metropolitan Region Creation	Older (1970s)	More recent (2000s)
Scope of the metropolitan institutional framework	Smaller than the actual metropolitan agglomerate	Larger than the actual metropolitan agglomerate
Territorial Planning	Limited to local districts and with little intercity permeability	Limited to the municipal district, but with a metropolitan scope

Source: [11].

**Table 4.**  
*Metropolitan agglomerates in the Brazilian Amazon: characterizing elements.*

regional metropolitan difference and the territorial and content differentiation of the urban forms that the region presents.

The recognition of these elements leads to the conclusion that, in regional terms, these agglomerates can be understood when viewed along with the regional dynamics, which confirms the existence of an articulated complex between metropolis and the region. This complex produces metropolitan spaces that are mirrors of the differentiated sub-regional occupation profile.

These metropolization-inducing elements in different urban-regional realities make up a scenario that must be considered for the understanding of their organizational bases when it comes to the internal structures of the agglomerates. Based on these conclusions, we proceed to the analysis of the internal structure pattern of each of them.

### 3. The structure of the urban agglomerates: Belem and Manaus in perspective

Although the articulation between metropolitan agglomerates and their regional immediate surroundings is on a scale of understanding the role played by these spaces, it is important to highlight that the metropolis can also be interpreted from

its internal structure, that is, the way it is organized according to elements that define its intra-urban, or intrametropolitan space.

In this case, it is necessary to identify the elements that make up the urban structures of the regional metropolitan agglomerates. The goal is to identify the different degrees of differentiation of these structures, considering that they do not mechanically follow the same dynamics. Thus, we will see the elements that mark both Belem and Manaus agglomerates.

### **3.1 Belem: From urban confinement to dispersed restructuring**

From the seventeenth century until the first half of the twentieth century, the trajectory of urban growth in Belem followed the needs of the Amazonian urban network, which still had little need for a complex urban space. Belem rose in the regional and national urban network at some moments in history, such as during the cycle of Pombaline reforms in the eighteenth century and the rubber period at the end of the nineteenth century. But with the end of these cycles, the city returned to its profile with the limited urban fabric.

In a more recent period, it is possible to affirm the configuration of a phase of urban expansion, marked by the dynamics of metropolization, which presupposes the advance of the urban network in relation to the period and the previous phases. This phase “begins in the sixties and is consolidated in the following decades and presupposes the incorporation of cities and villages close to Belem, defining a unique urban network, despite being fragmented” [12].

In this case, it is understood that Belem had its moment of expansion toward the formation of a metropolitan fabric from the 1960s, in the context of alteration of the circulation networks with the construction of the Belem-Brasília highway, the first major axis of road penetration in the Amazon Basin [13]. The highway (**Figure 2**) is one of the fundamental elements to understand the expansion of the urban fabric and the consequent spread of the city because until the 1960s the urban fabric was confined to the perimeter demarcated by its central neighborhoods and immediate peripheries. The stimulus coming from new regional dynamics, such as the introduction of road axes, propels growth toward other districts.

Simultaneously, the limitations on the demands of the new regional configuration stimulated changes of intra-urban spatial nature due to the growth of the city. The existence of a large area destined to state and parastatal agencies, forming an “institutional belt”, made the introduction of the road axes to become one of the elements of the intensification of land use, contributing to the formation of a metropolitan core marked by real estate use and making possible to overtake the initial area of the city. This central area or metropolitan core undergoes vigorous densification, followed by a vertical landscape of the central neighborhoods.

On the one hand, if verticalization is the predominant vector in the central areas of the metropolis, on the other hand, the transformations caused changes in the uneven landscape, observed from its slums and baixadas<sup>2</sup>, expressions of a metropolization that intensifies a type of urban peripheralization. The formation of peripheries, even within the central area of the metropolis, had a close relationship with this limited urban configuration at the time, since the “existence of institutional areas, bypassing the initial limits, made continuous expansion of the city impossible, making it difficult to access, with few urban services and equipment; a fact that contributed to the population densification in the most central areas, including the baixadas, located below the “institutional belt” [15].

<sup>2</sup> The term “Baixadas” derives from the original topographic conditions of certain areas of the city which are floodplain level, constantly flooded or subjected to flooding at certain times of the year and that made up about 40% of the urban site, in the denser area.





**Figure 2.**

*A stretch of BR-316 highway: Boundaries between cities become imperceptible given the conurbation and the intensity of flows. The BR-316 Highway is part of a set of federal highways that connect the capital, Brasília (DF), to Belem (PA), in a connection known as Belem-Brasília. Source: [14].*

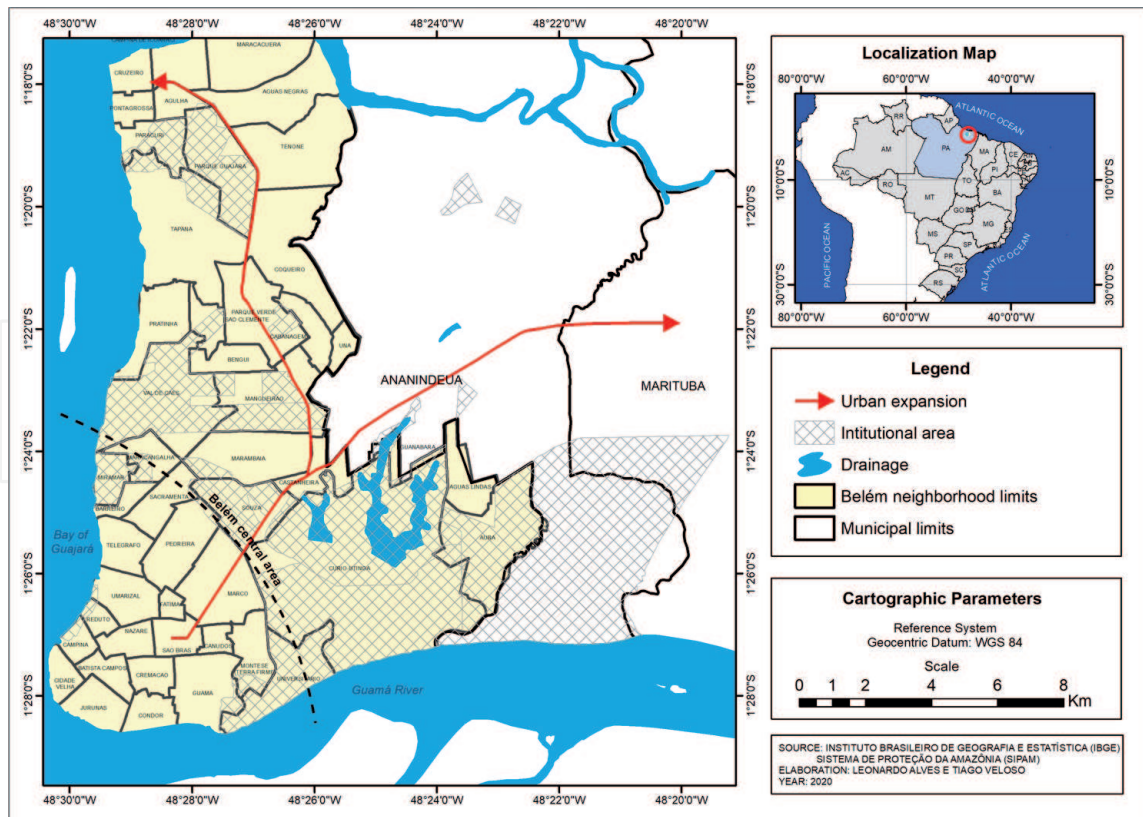
However, this institutional belt began to be broken in the 1960s, consolidating the spread of the urban fabric toward the two main routes of expansion: the BR-316 federal highway and Augusto Montenegro Avenue, which have guided the directions of expansion since the 1980s (**Figure 3**).

This movement made it possible to expand the metropolis to its immediate periphery in the following decades, with growth toward the peripheral municipalities, configuring the expansion area and shaping the old confinement in a new way. The municipality of Ananindeua reaches a demographic growth of around 18% over the 1990s. In the 2000s, all municipalities in the Metropolitan Region had greater growth than Belem (**Table 5**).

The described movement of metropolitan expansion caused the concentration of the highest-income population in the metropolitan core to undergo some changes in a very recent period. It is representative of a change - which cannot yet be classified as a trend - the fact that Belem receives real estate investments from high-income developments, such as Alphaville<sup>3</sup>, but this time located in an area far from downtown, in the district of Outeiro. This district is characterized as an area of low-income housing and leisure, which somewhat contradicts the effort of the upper classes in Belem to remain close to downtown. Otherwise, it reaffirms the trend of dispersion of the metropolitan space, only this time, not from the peripheralization of low-income classes, but rather from the suburbanization of high-income ones.

The industrial areas are also present in the metropolitan area of Belem, even though the urban expansion was not a process derived from the allocation of

<sup>3</sup> Alphaville is the brand of a horizontal real estate development exclusively for high-income classes. The brand is a national reference in horizontal projects, planned neighborhoods and urban centers, present in 21 Brazilian states and the Federal District.



**Figure 3.**  
 Belem: Expansion of urban space beyond the metropolitan core.

Municipalities	1980–1991 (%)	1991–2000 (%)	2000–2010 (%)
Belem	2.65	0.32	0.85
Ananindeua	2.68	18.09	1.83
Benevides	10.73	–7.02	3.81
Castanhal	—	—	2.56
Marituba	—	—	3.82
Santa Bárbara do Pará	—	—	4.18
Santa Izabel do Pará	3.01	2.93	3.24

Source: [16].

**Table 5.**  
 MRB: Municipalities growth rate (1980, 1991, 2000 e 2010).

industrial capital, because the organization of the metropolitan space in Belem is not structured around industrialization, unlike other Brazilian metropolises.

In this case, we refer to the industrial experience carried out in Barcarena<sup>4</sup>, a municipality that shapes the current configuration of the metropolitan space. The installation of a third roadway corridor in the 2000s<sup>5</sup> brings the metropolitan influ-

<sup>4</sup> The Barcarena industrial pole was defined as one of the projects of the Grande Carajás Program, whose goal is to implement industrial plants aimed at the processing of aluminum, kaolin and alumina. At approximately 36 kilometers from Belem, it has an energy supply provided by the Tucuruí Hydroelectric Power Plant, a road system and a port with capacity to serve ships of up to 60 thousand tons.

<sup>5</sup> The Alça Viária, PA-483 highway, inaugurated in 2002, is a complex of bridges and roads with 74 km of highways and 4.5 km of bridges, built to integrate the Metropolitan Region of Belem into the countryside.



ence closer to the industrial pole, causing the metropolitan agglomeration to spread, made possible by the rapid flows between Belem and Barcarena.

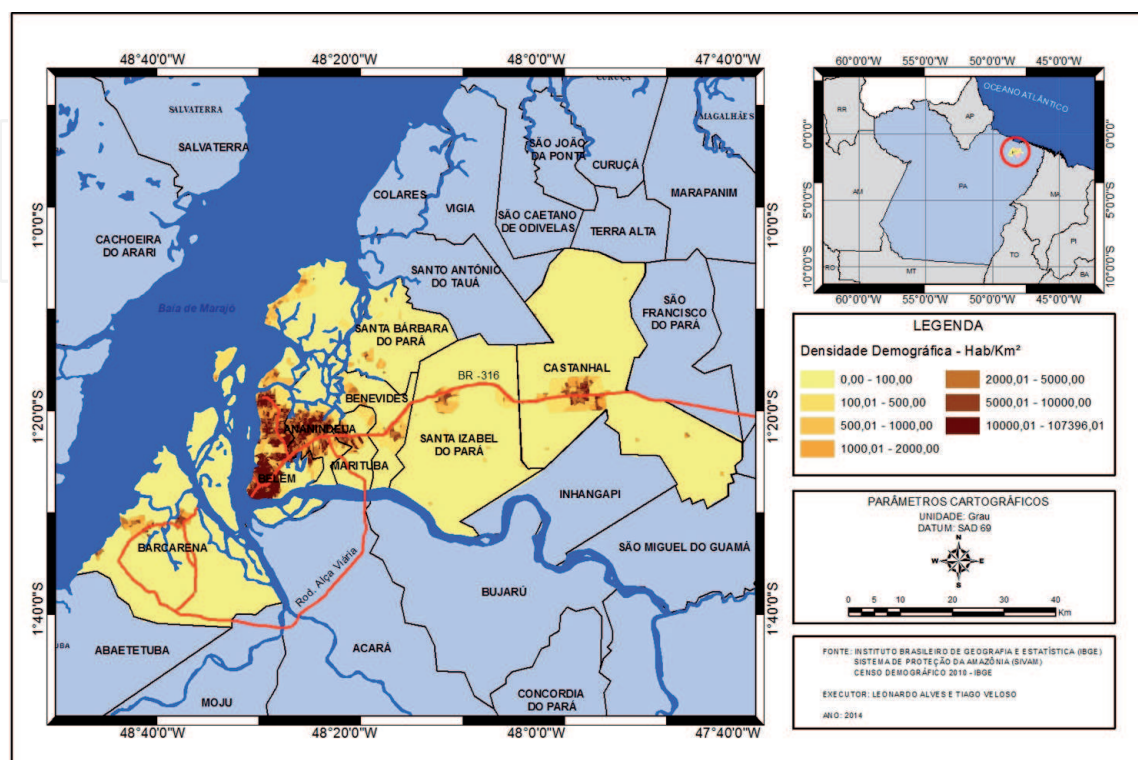
In addition to the importance of these industrial areas, in economic terms, it is necessary to consider that Belem was historically characterized as the gateway to the Amazon Basin, and still has river navigation in its relationship with the rest of the country and in the diversification of its regional economy. Belem “is one of the most dynamic metropolitan centers in the network, having influence not only over the state of Pará, but also in Amapá, the western portion of Maranhão and the northern Tocantins. This influence of the metropolis has been made possible by the restructuring of the metropolitan area of Belem through the construction of highway axes that connect the capital to the countryside and the region itself, which improved the fluidity and shaped the Pará Integration System, linking the Metropolitan Region of Belem to the other regions of the state” [17].

The existence of ports in the metropolitan space confirms this position. The maintenance of the importance of river navigation combined with a dispersed metropolitanization has made road-river transportation possible, integrating the industrial and port structure, making the configuration of the metropolitan agglomerate more complex.

If the urban form of the metropolis was confined at first, assuming its dispersed character from the 1980s onwards, nowadays there is an increasing complexity of metropolitanization at a regional level, made possible by the increase of flows, the implantation of the infrastructure of material circulation and the expansion of the influence of the metropolis on the region. This can be seen on **Figure 4**.

This characterization sets up a metropolitan structure that is not limited to political-administrative limits but rather explained by the fixed points and flows that make up a functioning metropolitan agglomerate. As such, its structure can be thought of from its organization into sectors (**Table 6**).

In this structure, the core of the metropolis is formed by the central neighborhoods of Belem located in the initial perimeter of the city, either by high-income and upper-middle-class neighborhoods, but also by low-income class ones, known for their precariousness in terms of urban services and facilities, despite their



**Figure 4.**  
MRB: Demographic densities.

Sectors	Subdivisions	Characteristics	Municipalities
First Légua Patrimonial (metropolitan central area)	Metropolitan core	Old neighborhoods with commercial, port, service, and residential functions	Belem
	Pericentral Neighborhoods	Old or recent neighborhoods, predominantly middle and upper-class ones	Belem
	Baixadas	Recent residential neighborhoods, low-income classes, and poor infrastructure	Belem
Transition Areas	Institutional Areas	Areas destined for public civil and military institutions.	Belem
	Residential Areas	Recent residential neighborhoods, lower and lower-middle-class ones	Belem
Expansion areas	Vector 1 (Augusto Montenegro Avenue)	Recent and low income industrial or residential sectors; Sectors of lower-middle classes and high-income suburbanization	Belem and municipal districts (Outeiro, Icoaraci, Mosqueiro)
	Vector 2 (BR-316 Road)	Recent and predominantly low income industrial or residential sectors	Ananindeua, Marituba, Santa Bárbara, Benevides, Santa Izabel, Castanhal
	Vector 3 (Alça Viária)	Recent industrial, port, and residential sectors.	Acará, Barcarena, Abaetetuba.

Source: [18].

**Table 6.**  
*Belem: Metropolitan structure.*

proximity to downtown. This core, the most valorized area of the city thanks to the pattern of concentration of services, jobs, and urban equipment, has been experiencing an increase in density in the form of verticalization [19], with new types of social selectivity, incorporation of sophisticated leisure equipment and high real estate prices, outlining the reinforcement of the trend of segregation for high-income social segments in the central area.

The transition areas are identified by the spaces destined to public and private institutions, which in the past served as a restraint to the expansion of the city and have a reasonable degree of lower-middle-class residential settlements, whose inhabitants still manage to live relatively close to the metropolitan core, counting on the services offered.

Finally, the metropolis expansion areas, which follow the direction of three vectors. The first one, Augusto Montenegro Avenue, which goes toward the peripheral districts, is inhabited mainly by low-income classes. This vector has been the object of recent transformations in urban dynamics because although it remains a vector in which there is the presence of low-income neighborhoods and classes, it has shown qualitative changes caused by the actions of the local real estate sector associated with the national real estate circuit. This expansion has been the scenario of a possible trend of upper-class suburbanization, represented by the arrival of middle- and upper-class developments.



The second vector is the BR-316 highway, which goes toward the peripheral municipalities of the Metropolitan Region of Belem, such as Ananindeua, Marituba, and Benevides, which were the ones that grew the most in the last decades, a growth that was partly due to the metropolitan peripheralization of lower-middle classes and low-income classes, who leave the metropolitan core toward these municipalities. This peripheralization, the main constituent element of the BR-316 vector, took place in a state-stimulated manner via housing policy, through the construction of large housing estates, but it also took the form of “spontaneous” lower class reproduction strategies, with occupations of areas for low-income housing.

More recently, in the 2000s, the expansion of this vector was expanded toward more distant municipalities, such as Santa Izabel do Pará, allowing a territorial discontinuity to happen on a landscape level, but reaffirming the contiguity of the metropolitan network, especially by flows related to the new spaces of low-income settlements that exist in this municipality and the dynamics and demands related to population and urban growth, which ratifies the need for a policy of common metropolitan services [20]. In addition, this BR-316 vector is configured by the existing relationship with the municipality of Castanhal, which, like Santa Izabel do Pará, was recently recognized as a member of the MRB.

The third and most recent vector of metropolitan expansion follows the direction of Alça Viária toward the integration of the metropolis with the closest or more dynamic state sub-regions, as in the cases of Lower Tocantins and Southeast of Pará, respectively, which presupposes the existence of a metropolis more integrated into the region’s countryside, hence the affirmation of restructuring the urban-metropolitan network of Belem based on the design of this new structure.

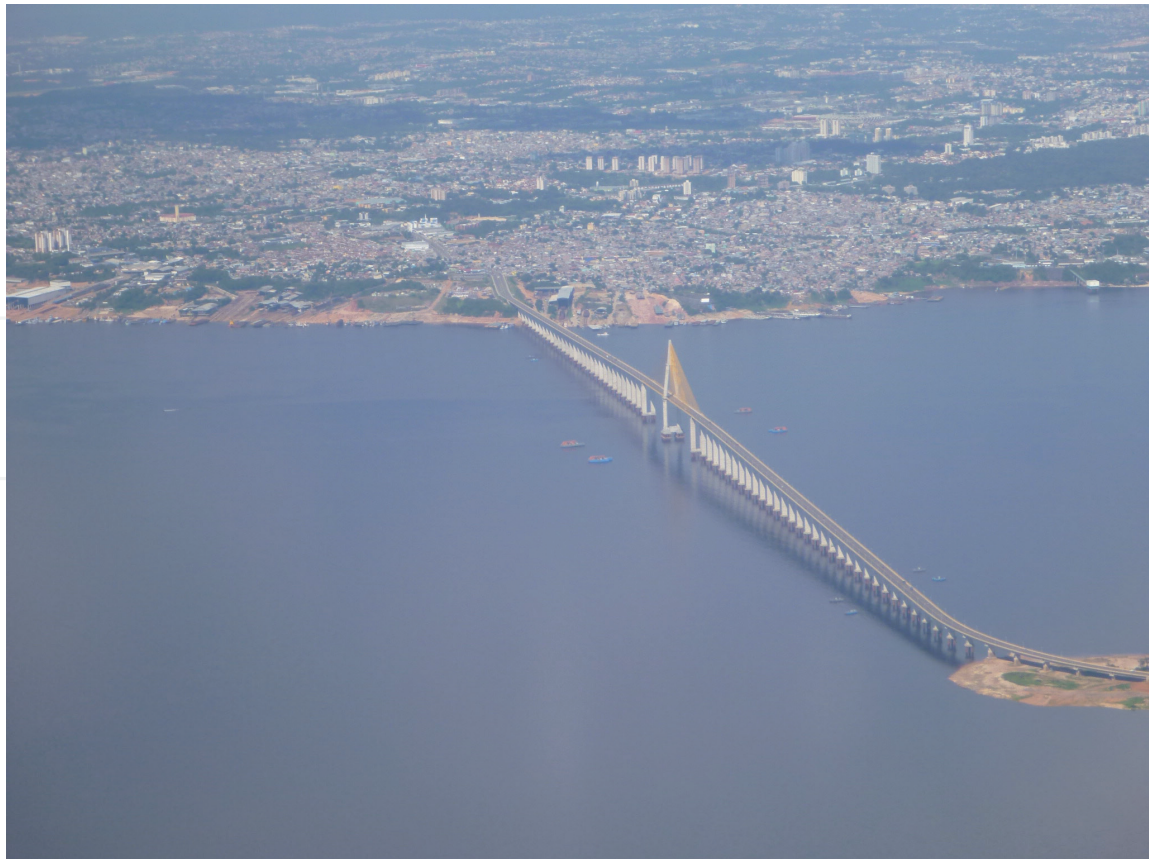
The analysis of these processes of expansion of the metropolitan network allows to conclude the redefinition of the metropolitan dynamics which, enlarged from these different processes, consolidates a more complex metropolitan structure in the regional scenario.

### 3.2 Manaus: From industrial enclave to concentrated metropolization

The growth of Manaus as a city of regional reference dates to the end of the nineteenth century, when it began to experience the first forms of capitalist interaction under an agro-export basis, because of the exploitation of natural resources (**Figure 5**). This economy enabled the development of an agro-extractive production base, without incentives for the processing of primary products, in the same way, that it triggered the existence of a migratory movement that became workforce for the greater productivity of latex extraction. The end of the period of economic expansion and urban growth caused by the rubber activity until the first decade of the twentieth century was followed by a period of decline in economic, demographic, and urban aspects.

Thus, the movement of little expansion of the urban fabric during the first half of the twentieth century is partly explained by the period of decline, which was only changed from the 1960s with the arrival of regional development programs, when the city’s rise to the status of a metropolis began. In the demographic evolution of Manaus (**Table 7**), it is noticeable how there were changes among the highlighted periods: the decline of the population after the 1910s, the slow collapse of the rubber economy, and the growth stimulated by the MFTZ<sup>6</sup> and MIP in the 1960s onwards.

<sup>6</sup> The Manaus Free Trade Zone (MFTZ) was established in 1967, with the purpose of creating an industrial, commercial and agricultural center in the countryside of the Amazon, through an import and export free trade area and tax incentives with determined deadlines, in the Export Processing Zones model. Within the MFTZ strategy, a Pole was created to attract industries through reductions in customs fees, tax exemptions, land concessions and infrastructure provided by the State.



**Figure 5.** Manaus and the Negro River Bridge: The expansion to the other side of the river. Source: Personal archive to the author.

Year	Total population
1910	85.340
1920	75.704
1940	106.399
1950	139.620
1960	173.343
1970	311.622
1980	633.392
1991	1.011.000
2000	1.405.835
2010	1.802.014

Source: IBGE.

**Table 7.** Manaus: Population evolution (1900–2010).

Following the trend of population expansion, stimulated to grow throughout the Amazon region in the 1970s, an intensification of the urban area and the current configuration of the metropolitan agglomerate can be seen. The evolution of Manaus and the expansion of the occupation of areas further away from downtown can be perceived as causally related to the movements of the region.

While under the influence of Belem, the economic modernization projects contributed to the production of a network of cities in the Amazon's countryside.

In the capital of the state of Amazonas, there was a concentration of urbanization and productive activities in the urban environment. The impact of the industrial enterprise caused the landscape of Manaus to be mediated by the industry.

The initial limits of the city were overcome when Manaus started to receive investments for the improvement of its infrastructure aiming at the implementation of the Free Trade Zone: an international airport was built, the port underwent changes and telecommunications services were implemented [21]. The new urban configuration, brought about through economic activities, marked the transformation of the city, because “with the consolidation of the Free Trade Zone, in the 1970s, the city underwent profound transformations, both in its form and in its social content. Manaus stopped being the “Paris in the Tropics” of the great works of the Rubber Cycle, to become a modern metropolis, with all the economic, social and regional contradictions” [22].

The reformulation of the city’s profile since the arrival of the industrial pole is remarkable, with an immediate impact on the production of the space (**Figure 6a** and **b**).

From then on, the metropolis landscape follows the restructuring dynamics of the urban space in the logic of industrial production, which acquires its own economic importance. The urbanization process in Manaus has not stopped since then, and the expansion of the urban fabric was intentionally stimulated by state and market agents, especially the real estate sector.

Due to state actions, the changes in the administrative headquarters of the governments of the state of Amazonas and Manaus city hall, which were in the central area of the capital until the 1990s, were elements that induced the growth of the city toward the west-north vector since the decentralization of some of the administrative structures is consistent with the objectives of metropolitan deconcentration. The areas to which these services were relocated were coincidentally the ones which grew the most during the 1990s and 2000s, a period of the changes described (**Table 8**).

The state action in different administrative spheres has a common goal, to create the conditions for the expansion of the metropolis to one of its sectors, in a structural movement. In this sense, a type of center was created for the middle and upper classes of the city, located in the southern part of the city.

In fact, the production of the manauara space, which is uneven due to the nature of its urbanization, also tends to produce an urban area that has as a characteristic the income inequality, manifested in the city from the forms of land use and housing production. This inequality is constituted in the demographic distribution of



**Figure 6.** Manaus: The Industrial Pole in two moments: (a) during its construction, in 1967, with the extension of reserved land in the city; and (b) consolidated in the urban structure in 2012. Source: [23].



Urban Zones	Permanent private housing units total, 1991	Permanent private housing units total, 2000	% of growth (1991–2000)
Central-West Zone	24.880	32.342	29.99
South-Central Z.	20.653	31.739	53.68
East Zone	34.382	76.783	123.32
North Zone	23.463	66.587	183.80
West Zone	38.508	47.952	24.53
South Zone	62.966	68.846	9.34

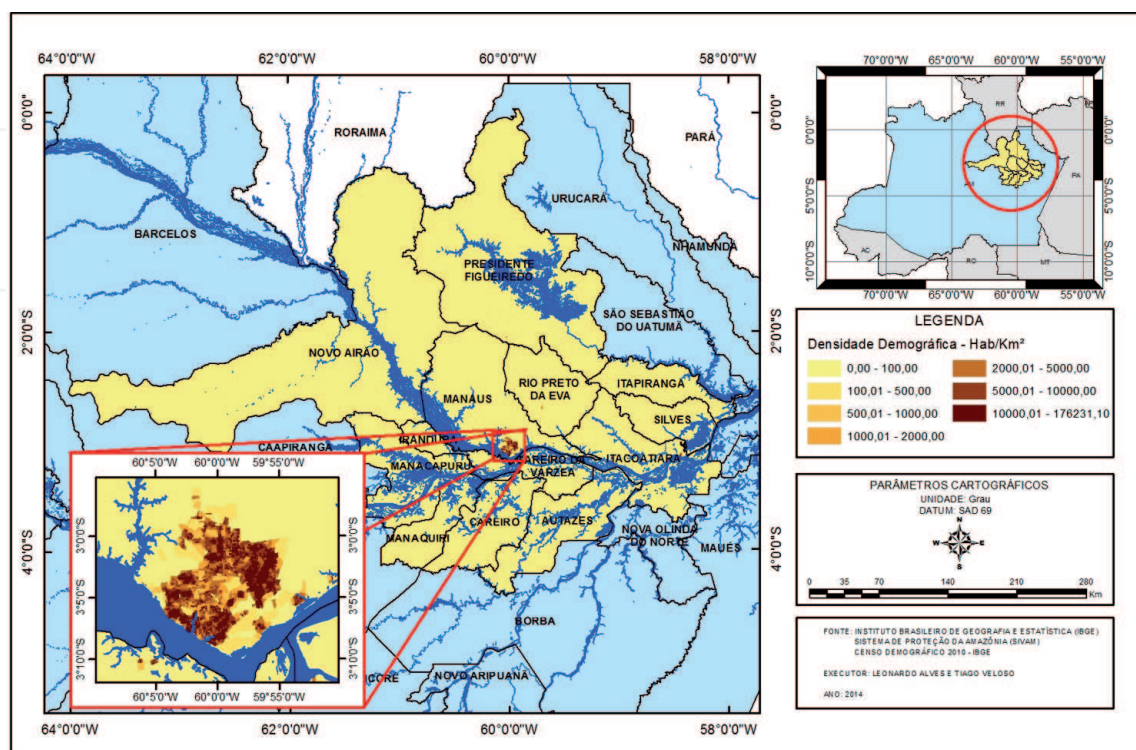
Source: IBGE.

**Table 8.**  
 Manaus: Total households by urban zones (1991–2000).

the population, quite concentrated in Manaus when compared with the extensive territory that constitutes the metropolitan region (Figure 7).

It is in this sense that a project of expansion in today's Manaus is conditional on overcoming natural obstacles, such as the river and the forest. This growth model tends to deny the dynamics of nature in its development process and in its representations. As we saw in the metropolitan reality of Belem, the recent arrival of large real estate projects for high-income consumers, such as Alphaville, is representative of this qualitative change in the production of urban space in Manaus.

It happens that, unlike Belem, the location of the enterprise in Manaus is close to the metropolitan core, precisely in the highest income area of the city, the south zone. This location is justified by some specific reasons regarding the urban structure of the city, such as the particularity of the population and economic concentration in the metropolitan core and the existence of green areas, which could not only



**Figure 7.**  
 MRM: Demographic densities.



be used for projects but are also an element of urban marketing when the product is offered to a specific target audience.

Meeting these new landscape realities, the city has also presented urban interventions for areas of lower classes, such as the Igarapés de Manaus Social and Environmental Program (Prosamim), a state government strategy for the housing and health issues in occupations adjacent to Manaus streams, historically occupied by these populations.

In addition, Prosamim is made possible with the possibility of expanding the urban-metropolitan network beyond municipal limits. This expansion has recently been made possible by the construction of the bridge over the Negro River, which provides road access between Manaus and some neighboring municipalities, such as Iranduba and Manacapuru. In the case of Iranduba, there is already a pilot project for Prosamim, reaffirming the influence of the metropolis on the adjacent municipalities.

In the new face of a Manaus-metropolis, the influence of the bridge on the Negro River cannot be minimized, as it composes a new scenario and reinforces the influence of the capital on the immediate region. It is the most important object symbol of the metropolitan landscape, expressing the arrival of the urban on the “other side of the river”. This is one of the spatial expressions that large objects tend to intensify, given that in the municipalities close to Manaus the flow of relationships taking place in the metropolis has not yet been established.

Irاندuba is a small city in terms of economic dynamics, with little capacity for its activities to add value on a local or regional level [24]. Such conditions occur due to its proximity to Manaus, with integration by highways, which allows it to present a greater quantity and variety of shops and services.

Manacapuru, on the other hand, is classified as a medium city with an intermediary function, since it performs an intermediary function between the other cities and Manaus due to the proximity of the metropolis and the road connection, that is, its importance is not only for the municipality itself but also for those smaller ones around it.

In other words, from the point of view of expanding relations to the municipalities that make up the metropolitan region of Manaus, one can identify a growth trend in these relations, although at present they are not a consolidated fact, due to the concentrating characteristic of the Manaus metropolis.

It is necessary to add that the expansion of these relations is not mediated only by the consolidated urban network between Manaus and the adjacent municipalities. There is a type of movement in the metropolitan space that is made possible by the existence of spaces metropolized<sup>7</sup> by commuting and specific flows, such as those made possible by tourism activities in the municipality of Presidente Figueiredo. This municipality is connected contiguously to Manaus and has flows and commercial activities derived from tourism that cause it to be influenced by a space consumption characteristic of metropolitan areas, including the use of nature elements, such as waterfalls, which are used to enhance tourist activities<sup>8</sup>.

Despite the differences in elements of the urban structure, such as economic activities and the resulting socio-spatial impacts, the type of location of the upper

<sup>7</sup> The inspiration for understanding the metropolized space comes from Bernard Kayser (1969), for whom “The metropolized space is characterized as a space that is closely and concretely linked to the big city through the flow of people, goods, capital; flows that are quite intense and permanent and that in fact coincide with the major axes of urbanization” [25].

<sup>8</sup> In general, these establishments are privately managed, and there are several of them along the BR-174 highway. In general, they offer a short stay package (one-day long), which includes restaurants, tours and bathing in waterfalls. The use of the English language on billboards is common, characterizing a type of international tourism.

classes, and the metropolitan peripheralization, it is possible to find similarities between at least one aspect of the intra-urban structure of Manaus and what occurred in Belem: the port activities, and in this case, it is necessary to pay attention to the fact that Manaus was favored by its location, since the city was conditioned to perform the port function, concentrating the flow of the hydrographic system of the western Amazon. This urban function became the main force of the city's development, initially driven by the rubber cycle and later by the model of implantation of the Free Trade Zone and the Industrial Pole.

Such characteristics of the metropolitan expansion in Manaus, articulated by urban and regional infrastructures, make it possible to expand the scope of the metropolization toward the state of Roraima, an expanded periphery crossed by the internationalism of the Brazilian northern border, although this increase in regional connectivity provided by the geographical fixed points produces few benefits in terms of quality of life in regions of extensive and peripheral urbanization [26].

We can say, therefore, that the metropolitan structure of Manaus is intrinsically associated with the development policies that produced the Industrial Pole and the Free Trade Zone as pillars of its urban expansion and economic growth.

More recently, over the 2000s and 2010s, this process has been intensified by state-sponsored green entrepreneurship initiatives, which deepen the trend toward metropolization in an uneven geographic development pattern [27].

When we consider these characteristics of the metropolitan space of Manaus and associate it with its main zones and its growth trends and expansion vectors, we have a table that reveals what the metropolitan structure of Manaus is like (**Table 9**).

The main housing areas of the middle- and upper-classes are in the metropolitan core, particularly in the southern part of the city. There is a concentration of urban services, goods, and equipment in these areas. However, the core is not exclusively occupied by these higher-income classes. There are also medium-income sectors bordering its central-south zone, and even low-income populations, especially around the streams. It is in these areas that the main urban intervention programs take place, such as Prosamim, oriented toward interventions aimed at changing the occupation profile, whether in the aspect of the standard type of housing or in the relationship between the city and the river.

The residential areas of the upper-income groups are also located close to downtown, reflecting a scenario of intra-urban segregation, mimicking a particular type of corporate metropolis. So far, there has been no suburbanization of the high-income classes.

The transition and consolidated occupation areas are identified from two occupation profiles. In the central-west zone, residential districts of the middle and upper classes stand out, following the BR-174 expansion vector. In the east zone, industrial areas reserved for the Industrial Pole, as well as recent sectors of housing of low-income nature, predominate. Given the mononucleated characteristic of the metropolis, the low-income residential areas are located within the municipality of Manaus, but in areas relatively distant from downtown, characterized by a low supply of equipment, infrastructure, and urban services, especially in the northern zone.

The mononuclear metropolis characteristic remains fundamental to understand the metropolitan structure of Manaus, although recently there has been an expansion toward neighboring municipalities, such as Iranduba and, to a lesser extent, Manacapuru, particularly oriented by the duplication of AM-070 highway and stimulated by the construction of the bridge over the Negro River, as well as by real estate production and the flows of goods, services, and goods along with it.

Sectors	Subdivisions	Main characterization	Cities
Metropolitan core	South zone (core)	Old neighborhoods with commercial, port, service, and residential functions	Manaus
	South zone Pericentral neighborhoods	Old and recent neighborhoods, predominantly middle- and upper-class ones	Manaus
	Poor areas (near streams)	Recent low-income residential neighborhoods with poor infrastructure	Manaus
	Central-south zone Pericentral neighborhoods	Middle-class residential neighborhoods	Manaus
Transition and consolidated occupation areas	Central-West Zone Pericentral neighborhoods and BR-174 expansion vector	Middle- and upper-class residential neighborhoods	Manaus
	East zone Industrial areas (Manaus Industrial Pole)	Industrial and institutional sectors, such as new housing sectors, predominantly low-income ones	Manaus
Expansion areas	West Zone Vector (AM-070)	Recent middle-, upper- (Alphaville) and low-income class residential neighborhoods	Manaus Iranduba Manacapuru
Expansion areas	North zone	Recent low-income and low-middle class residential neighborhoods (large housing settlements)	Manaus
Metropolized spaces	Vector (AM-010 and BR-174 roads)	Municipalities with intense trade flows and tourist activities	Presidente Figueiredo Rio Preto da Eva

Organization: [28].

**Table 9.**  
*Manaus: Metropolitan structure.*

## 4. Conclusions

The general picture of metropolitan structures in Belem and Manaus offers an understanding of these agglomerates from a regional characterization. It is possible to identify, within the scope of the particularities presented, aspects of differentiation in the configuration of the two metropolises. Elements such as the production of industrial, logistics, and port areas; the segregation profile of low-income classes, and the self-segregation of middle and upper classes lead us to conclusions about the pattern of metropolitan agglomerates in the Amazon.

First, metropolization is intensified from regional integration processes via economic ventures. The urban structure of agglomerates is influenced by regional dynamics that interact with capitals internal to cities, which makes it possible to state that in the Amazon case, regional dynamics directly influence the organization of metropolitan spaces. The movement of integration of the region in a frontier dynamic guided by the Brazilian State does not simply cause the structures to present a common pattern. On the contrary, the particularities of the agglomerates take

shape when we consider the different ways in which each of the references had the process of induced metropolization.

In Belem, the execution of major development projects in the countryside of the central Amazon indirectly mobilized urban restructuring and the consequent space metropolization. The role of urban reference in the region, combined with the migration movements of the workforce, conditioned its dispersed metropolitan structure.

In Manaus, metropolization was induced due to the implementation of a Free Trade Zone combined with an Industrial Pole, elements that boosted urbanization in the western Amazon, which had been hitherto stabilized in the post-rubber economy period. The industrial core and commercial activities led to the establishment of a concentrated metropolitan structure.

These regional conditions act along with other conditions for structuring the metropolitan space but can be seen through the profile of human settlements, the industrial occupation, the circulation logic promoted by these cities and that articulate not only the intra-urban space of the metropolis, but also connect all the regional environment to which they are related, therefore being product, condition, and means of these regional realities.

Both agglomerates have a socio-spatial segregation profile, although it cannot be affirmed in any way that this is an Amazonian peculiarity. Again, the peripheralization appears as a defining element of the metropolitan structure of the two references analyzed, but in different ways.

In Belem, peripheralization is a more dispersed network due to the trend of occupation of more distant areas by low-income populations. In Manaus, the peripheralization is basically inside the city, but even so, located in the distant periphery (northern sector) of the metropolis.

Finally, they are mononucleated agglomerates. Here, a pattern of similarity is identified, because when considering the profiles of the metropolises, it is assumed that they follow an expansion pattern from downtown, which reveals the type of occupation of their elites around the areas with most urban equipment and services. This tendency to maintain the metropolitan centrality has even caused the urban soil to be increasingly densified in the central and pericentral areas, through verticalization.

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