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Small Towns in the Amazon River Delta: On What Terms?

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Abstract

This article brings a reflective discussion about the singularities of these small cities, based on a comparative study between three cities of the Delta: Afuá and Ponta de Pedras, located in the state of Pará, and Mazagão, in the state of Amapá. Data collected through the application of questionnaires to urban residents and urban area mapping were used, in addition to census data. The results demonstrate that the three cities grew at similar intensities, as a result of unique processes, but their residents have, similarly, precarious access to infrastructure and services. The paper also discusses the invisible aspects of these cities, the solidary happening, the nature of the “ribeirurbano”, a society that maintains relationships in networks, with activities in the informal circuit of the economy, alongside non-urban functions, in the production of a social space that, despite maintaining the riverine ethos, it is an urbanized riverside.

Keywords: Small town. Delta. Singularities. Ribeirurbano.

Pequenas Cidades do Delta do Rio Amazonas: Em que Termos?

Resumo

Este artigo apresenta uma reflexão sobre as singularidades das pequenas cidades, a partir de um estudo comparativo entre três cidades do Delta do Amazonas: Afuá e Ponta de Pedras, no estado do Pará, e Mazagão, no estado do Amapá. Para a realização da pesquisa, foram utilizados dados coletados por meio da aplicação de formulários aos moradores urbanos das três cidades, dados do mapeamento da área urbana, bem como dados censitários. Os resultados mostram que as três cidades cresceram como resultado de processos singulares, mas seus moradores também têm pouco acesso a infraestrutura e serviços. São também discutidos os aspectos invisíveis destas cidades, as redes de solidariedade, o riberurbano, uma sociedade que se relaciona em rede, com ocupações no circuito informal da economia, em associação a funções não urbanas, que, apesar de manter o ethos ribeirinho, é urbanizada.

Palavras-chave: Pequenas cidades. Delta. singularidade. riberurbano.

Ciudades Pequeñas del Delta del Río Amazonas: ¿En qué Términos?

Resumen

Este artículo trae una discusión reflexiva sobre las singularidades de estas pequeñas ciudades, a partir de un estudio comparativo entre tres ciudades del Delta del Amazonas: Afuá y Ponta de Pedras, ubicadas en el estado de Pará, y Mazagão, en el estado de Amapá. Para ejecutar la investigación se utilizó datos colectados mediante la aplicación de cuestionarios a los vecinos urbanos de las tres ciudades, datos de mapeo del área urbana, además de datos censales. Los resultados demuestran que las tres ciudades crecieron como resultado de procesos singulares, pero sus vecinos poseen, similarmente, un acceso precario a la infraestructura y servicios. Se discuten también los aspectos invisibles, mucho más significativo para estas ciudades, como el acontecer solidario, el riberurbano, una sociedad que mantiene relaciones en redes, con actividades del circuito informal de la economía, junto a funciones no urbanas, que, a pesar de mantener el ethos ribereño, es urbanizado.

Palabras clave: Pequeña ciudad. Delta. singularidad. riberurbano.

1 Introduction

Murillo Marx published the book “Cidades no Brasil: em que termos?” (MARX, 1999), inspired us to think about the city from the usual entries of studies on these places, from the evolution of some words. Trying to understand the city, the author asks us about the changing trends of these places. In this paper, we use the expression, “On what terms?” in the sense of questioning, while seeking a more reflective discussion about the small towns in the Amazon River Delta, based on the analysis of the process of structuring the urban space of three towns located in this immediate region: Afuá, Ponta de Pedras, located in the state of Pará, and Mazagão, in the state of Amapá.

Studies on small towns are not recent in the Brazilian academy (e.g., SILVA, 1988, GEIGER, 1963), however, we need to move forward in the debates on the subject, which has not been seen in recent decades (NEVES; FARIA, 2020). Terminologies to refer to this urban category were proposed by Milton Santos (SANTOS, 1982), who proposed the concept of local centers, explaining their physical dimension, as well as discussions about small towns or small towns which appear in several recent studies (SPOSITO&JURADO SILVA, 2013, OLIVEIRA, 2006, FRESCA, 2010, ENDLICH, 2009, TRINDADE JR ET AL., 2008, TRINDADE JR, 2013).

As highlighted by Santos (1982), most urban studies are directed to large cities. However, “(...) if we carefully consider both statistics and reality, we see another urban phenomenon taking shape, that of local towns which, in our view, deserves as much interest as the preceding one” (SANTOS, 1982, p. 69). The author also explains that the expression “small towns” refers us to the notion of population size, however, Santos (1982, p. 69) comments that a minimum population number should not be considered for this classification, as this may cause a generalization.

Thus, for CORREA (2011, p. 06), the small town can be defined in terms of degree of centrality rather than in terms of demographic size. It is characterized by being a local center, that is, a center that exercises centrality in relation to its municipal territory, its hinterland, where a dispersed population lives, mainly dedicated to agrarian activities.

Using the expression “local town” to refer to this category of town, Milton Santos explains that it would be the minimum dimension from which the agglomerations cease to serve the needs of the primary activity to serve the urgent needs of the population, with true specialization of space (SANTOS, 1982, p. 71). This minimum dimension, for the author, must respond to qualitative and quantitative changes, such as population density, income level, consumption level.

Fresca (2010, p. 77) explains that the local center cannot be confused with the local town, the first being a category that refers to “the lowest level of towns in Brazil”, and the second can be understood from the perspective of Santos (1982). This minimum dimension, the local town, explained by Santos (1982, p. 71), would be agglomerations, with the capacity to respond to the “minimum needs, real or created, of an entire population, a function that implies a life of relationships” (SANTOS, 1982, p. 71). From the minimum level of activities, “there is a significant diversity of towns” (FRESCA, 2010, p. 77).

In this point of view, Endlich (2006, p. 52) states that “small urban centers” are different, considering that they have unequal contents that can produce hierarchical relationships between them. Thus, the small town has a particular totality that animates and moves it through capitalist processes of production, and in turn, they carry and territorialize man/nature relations in the production of space and in the reproduction of life as a geographic content (SPOSITO; JURADO DA SILVA, 2013, p. 17-18).

An important aspect to be emphasized is related to the scale of analysis. Santos (1980, p. 08) explains that “The further we go down the geographic scale, the greater the selectivity and expressiveness of the combined variables and thus the work of finding the explanation is greater”. That is, studies of small towns need to dedicate themselves to unraveling the specificities of these places or as highlighted by Sposito (2016), the singularities because, from the

recognition that the particular is the unity between the singular and the general, is that the study of towns in a stratum of the urban network, through the procedure of comparison, it has the potential to offer clues to the understanding of what is universal in the process of urbanization contemporary. Thus, the comparison between different strata and between towns of the same stratum, (...), can contribute to the construction of generalizations or hypotheses for the elaboration of theoretical perspectives anchored in empirical studies (SPOSITO, 2016, p. 47).

In this context, in the universe of Amazonian towns, there is a predominance of small towns. The Amazon Region, always remembered for its biodiversity and, at the same time, for the countless attempts to destroy this biome, and in 1980 is considered an urbanized forest¹ (BECKER, 1985). In relation to this urban Amazon, Trindade Jr (2015, p. 330) reaffirms the importance of sustaining the notion of urban diversity to think about these towns in order to consider this universe, so particular,

¹ This term was proposed by Bertha Becker, in 1985, in the article “Fronteira e Urbanização Repensadas”, published by the IBGE and available at: https://biblioteca.ibge.gov.br/visualizacao/periodicos/115/rbg_1995_v57_n2.pdf.

of urban, as plural and diverse, just as its biodiversity is considered, opposing the vision of a homogeneous region that has always been reserved for the Amazon.

This urbanized space in the Amazon region is polarized by two large cities, Belém and Manaus, and has more than 80% of its 771 towns with less than 20,000 inhabitants, although the demographic criterion is not the only parameter used to categorize a city (AMORIM FILHO ET AL., 2007). These 629 municipalities comprise 24% of the population of urban region. They are small towns that, as explained by Oliveira (2006, p. 27), have little articulation with their urban surroundings, few economic activities, predominance of work linked to the public sector; and low competence to offer basic services, linked to health, education and security. Oliveira (2006, p. 27) also reinforces that these small towns, mostly,

they are small nuclei that have emancipated themselves with little or no infrastructure, having as their economic base the transfer of public resources and, although they present the structure of a city, they lack economic activities characterized as urban, which makes the urban population dedicate itself to traditional rural activities, such as fishing and extractivism.

In the Amazon River Delta, this reality is present. According to IBGE data (2021), in 2010, 70% of the 50 municipalities in the Amazon River Delta² had less than 50,000 inhabitants. However, despite apparently being homogeneous, they have singularities, as demonstrated by some studies carried out on the municipalities of that locality (COSTA & MONTOIA, 2020; MONTOIA & COSTA, 2020, MONTOIA & COSTA, 2019).

For more than a decade, we have dedicated ourselves to trying to understand what small towns are in the Amazon River Delta and still some questions are recurrent: what defines a municipality as small? Is the size of the population, the size of its urban area, its hierarchical position in an urban network, the way of life of its population or its economy? This is an important discussion, from a theoretical and practical point of view, considering the need to understand the distant scales of urbanization in territories. Seeking to present a reflection on small towns, this paper aims to expose a comparative study between three towns in the Delta: Afuá and Ponta de Pedras (Pará) and Mazagão (Amapá) to explain their uniqueness.

Comparative studies of towns, of a stratum of the urban network, allow, according to Sposito (2016, p. 47), to offer ways to apprehend what is common in the contemporary urbanization process, as well as to explain the similarities and differences (SPOSITO, 2016, p. 28). The comparative study needs, as highlighted by Sposito (2016, p. 43), to be articulated by a method.

² DELTA (2015) defined 49 municipalities, which are located within a radius of up to 5 km from the Amazon River, as an area of direct influence in the Delta. This classification is used by the DELTAS Project, funded by the Belmont Forum.

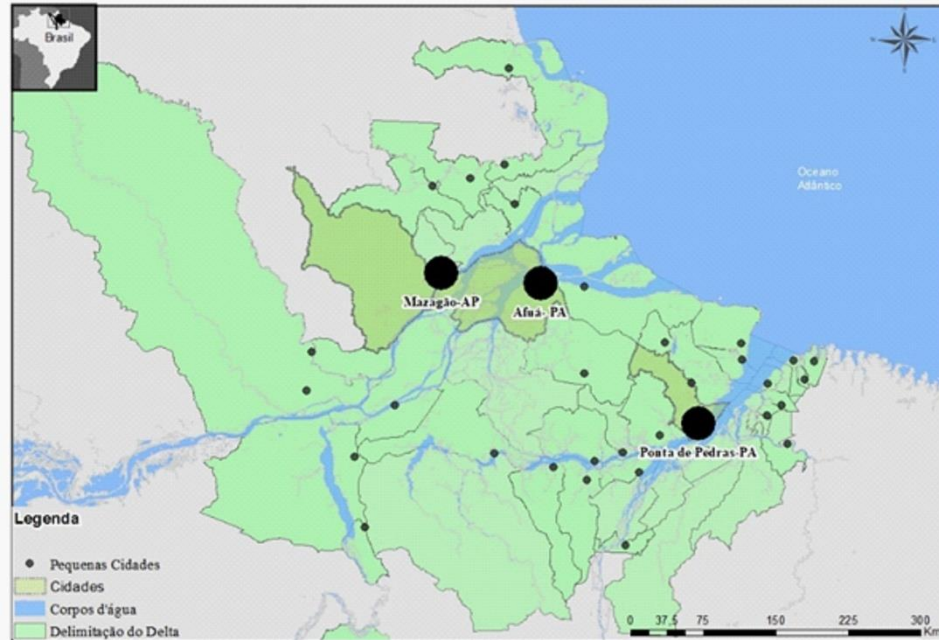
For this research, the theoretical production on small towns in the Amazon has advanced a lot, in terms of studying their singularities³. However, it is believed that comparative studies can allow us to understand, in a more meaningful way, the particularities that unite these towns, and the singularities that make them unique places.

2 THE STUDY AREA - THE AMAZON RIVER DELTA

The delta region of the Amazon River is characterized by the advance of the sea, which is divided into several arms of the river, in recent years the delta region has experienced an accelerated pace of occupation and urban and economic population growth. The region consists of 49 municipalities, 9 of them are located in Amapá and 40 are located in Pará (DELTA, 2015).

In the Amazon Delta region, there is a predominance of towns (municipal administrative headquarters) with less than 20,000 inhabitants (68%), considering that 86% of these towns have an urban population of less than 50,000 inhabitants. They are small towns that are still dominated by the presence of a rural daily life, in the conditions of geographic location and local nature, which are reflected in the socioeconomic dynamism of urban centers. This causes a very particular reality to develop in these small towns, which is connected to this local nature. In the paper, three small towns that are part of the Amazon Delta region are analyzed in a comparative study: Afuá-PA, Mazagão-AP and Ponta de Pedras-PA (Figure 1).

Figure 1 – Location of the Study Area



Source: Elaborated by the authors (2021) based on IBGE data (2021).

³ Costa & Montoia (2020), Montoia & Costa (2020), Montoia & Costa (2019) bring important discussions about the urbanity of these municipalities, discussing the riverside and the solidarity happening, which are shown as singularities.

These three towns have less than 20,000 inhabitants and have established economic activities based on the river-forest-floodplain relationship. This system is due to the local geographic nature, responsible for the functioning of the daily dynamics of towns, such as the means of transport, source of resources, in addition, the river-forest-floodplain relationship determines the rhythm of the town. They are urban agglomerations that are characterized by being “heirs of past spatialities” (Oliveira, 2006), considering that there are discontinuous and continuous processes in space and time. They are marked by resistance from different times, contained in the same socio-spatial dimension. The forest and the river are part of the population's way of life, these two elements configure the space-time and nature of Afuá-PA, Mazagão-AP and Ponta de Pedras-PA. The urban sites of these towns have poor urban infrastructure and have experienced, in recent years, the expansion of the urban fabric, without having an effective definition of public policies.

3 METHODOLOGY

This paper was prepared from data collected in different institutions, as well as fieldwork, in the region studied, carried out in July 2016, July 2017 and July 2018, during which questionnaires were applied to the urban population. With the objective of raising the socioeconomic profile of urban residents, access to infrastructure and services, questionnaires were applied to 883 urban households, distributed among the towns, as follows: 311 in Afuá, 262 in Mazagão and 301 in Ponta de Pedras, representing approximately 10% of the total number of urban households, according to data from the Census (2010), on the number of urban households, by census sector. The definition of the number of households to be sampled followed the proposal of Krejcie and Morgan (1970)⁴, which present a table, prepared from statistical parameters, which allows establishing the appropriate sampling for different population sizes. In the case of this research, the population (universe) is the total number of urban households, by census sector. The research was submitted to the Ethics Committee of the University of Vale do Paraíba, which was approved under No. 69815317.8.0000.5503.

Satellite images, obtained between 1980 and 2018, available on the National Institute for Space Research (INPE) website and aerial photographs, obtained in 1969, on the Mineral Resources Research Company (CPRM) website, were used to map the growth of towns, between 1960 and 2020. Satellite images were selected according to the availability of information and did not follow a date criterion, considering local cloudiness, which interferes with the quality of the product obtained.

Census data on the number of inhabitants and households for the years 1980, 1991, 2000 and 2010 were collected to help analyze the growth of the studied towns.

⁴ KREJCIE, R.V.; MORGAN, D.W. Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, n.30, p. 607-610. 1970.

4 SMALL TOWNS IN THE DELTA: ON WHAT TERMS?

Small towns are like that, they need to be studied from a combination of variables, using data that capture the singularities of these places. However, there are elements that catch the eye of the observer, while others only show themselves to those who look beyond the visible aspects.

What is visible in these towns? What can we not immediately perceive, but what characterizes these places and brings them closer together? What is particular and makes them unique? It is these aspects that we will present in this section. The empirical and the essence, objects and actions, landscape and social relations are the first steps in the path of analysis, which aims not only to present the empirical and Euclidean, absolutely in itself, but also to transit among ways of life and relationships that are establish between the urban dweller and these small towns, which lead us to an understanding of the riverside.

4.1 Visible in the Delta Small Towns

As discussed by different authors mentioned in this paper, defining a small town is not an easy task. Although Fresca (2010, p. 76) explains that by dwelling on the demographic element “to characterize a municipality as being small, there is a risk of equating towns that are essentially different. (...), preventing us from understanding their roles”, the criterion “number of inhabitants” helps us to understand this urban universe, as it establishes quantitative thresholds for computing how large is the number of small towns in Brazil, and in its different regions.

In the Amazon River Delta, the predominant urban reality is that of small towns, with less than 20,000 inhabitants, such as Afuá, Ponta de Pedras and Mazagão, with an urban population ranging between 8,000 and 13,000 inhabitants, according to the data of 2010, from the Census (IBGE, 2021), as shown in Table 1. The three towns do not contain the majority of the population of the respective municipalities, Afuá with 27% of the total (39,567 inhabitants), Ponta de Pedras accounting for 47% of the total population (31,549 people) and 48% of the residents of Mazagão (20,387 inhabitants) lived in the administrative headquarters. These numbers, associated with the size of the towns, provide us with a very particular occupation density: according to Table 1, all towns have small urban areas, which correspond to less than 1% of the total area of the municipalities. The population densities of the towns (number of inhab./km²), however, vary from 4,949.8 to 8,857.9 inhab./km². That is, Afuá has the highest density and Mazagão, the lowest. One result of this density is the agglomeration of households, mainly in the floodplain area.

In the images in Figure 2, it can be observed that this agglomeration, that is, a higher density of occupation, is more common in the floodplain areas, considering the form of occupation that takes place in these environments. In this figure, it can be seen that the residences in Afuá are very close to each other, as is the case in the bridge areas, in Ponta de Pedras. In these two towns, an urban site can be seen with a typical landscape of the Amazon floodplain. However, in Mazagão, as it is on dry

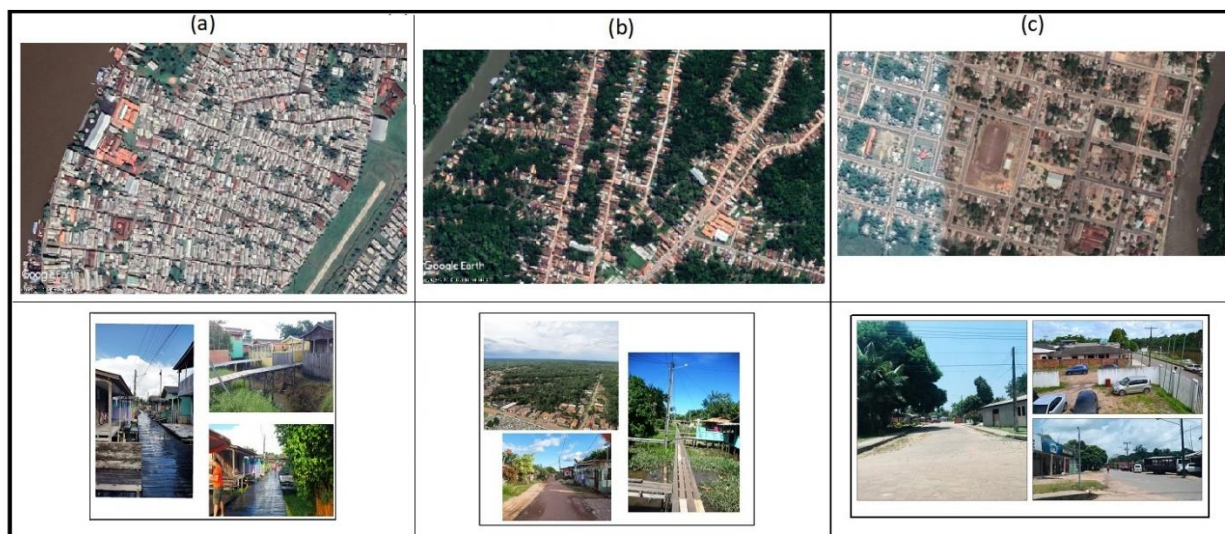
land, the buildings on the lots have setbacks, which allows for a distance between the residences.

Table 1 – General Information about the Towns

Town	Town Foundation	How to get there?	Distance for the Capital	Urban Population (%)	Urban Area
Afuá	1890, from a donation of land ownership	The only means of transport that allows connection with the town is the boat. From Macapá, two boats leave a day, a bass boat that makes the journey in 2 hours, and a large boat that makes the journey in 4h30.	Far from the capital of Pará, in a straight line, more than 250 km, which turns into more than 20 hours by boat. Macapá is the closest, located 84 km away and reached by boat.	According to the IBGE census (2010), the town had 9,478 inhabitants, which corresponded to 27% of the total population.	1.07 km ² of urban area, in 2016, measured in a Quickbird satellite image, which corresponded to less than 1% of the total area (8,372.8 km ²).
Mazagão	1841, from a village and vacant land	Mazagão can be reached by boat, from Macapá, or by bus/car, by road that connects the town to Macapá.	Far from the Macapá, approximately 40 km on the AP-440 highway.	In 2010, the town had 8,272 inhabitants, which corresponded to 48% of the total population.	2.51 km ² of urban area, in 2018, measured in a Quickbird satellite image, which corresponded to less than 1% of the total area (13,130.8 km ²).
Ponta de Pedras	1877, from the foundation of a parish, created with the donation of land from a <i>sesmaria</i>	Ponta de Pedras is accessed by river transport, via commercial boat from a waterway terminal in Belém. The journey takes 2h30 by bass boat and 4h by boat.	Far from Belém, on a boat trip.	According to the census of 2010, the town had 12,424 inhabitants, which corresponded to 47% of the total population.	In 2014, it had 1.42 km ² of urban area, measured in the Quickbird satellite image, which corresponded, at that time, to less than 1% of the total area (3,365.2 km ²).

Source: Elaborated by the authors, based on information from the IBGE (2020) from the Public Archive of the State of Pará (2018) among other data obtained by the research.

Figura 2 – Occupancy Density in the Small Towns in the Delta: the satellite images correspond to sections of Afuá (a), Ponta de Pedras (b) and Mazagão (c), with photographs taken in locu, exemplifying the density



Source: elaborated by the authors, based on Google Earth images and photographs obtained in fieldwork

It's possible to observe a characteristic urban landscape of Amazonian floodplain. The reasons that led these towns to emerge were diverse. The three towns studied here (Afuá, Ponta de Pedras and Mazagão) were elevated to town status in the 19th century. They emerged as a parish, from the donation of land from a farm, as is the case of Ponta de Pedras, as a village, created on public lands, as in Mazagão; or from possession, as was the case with Afuá.

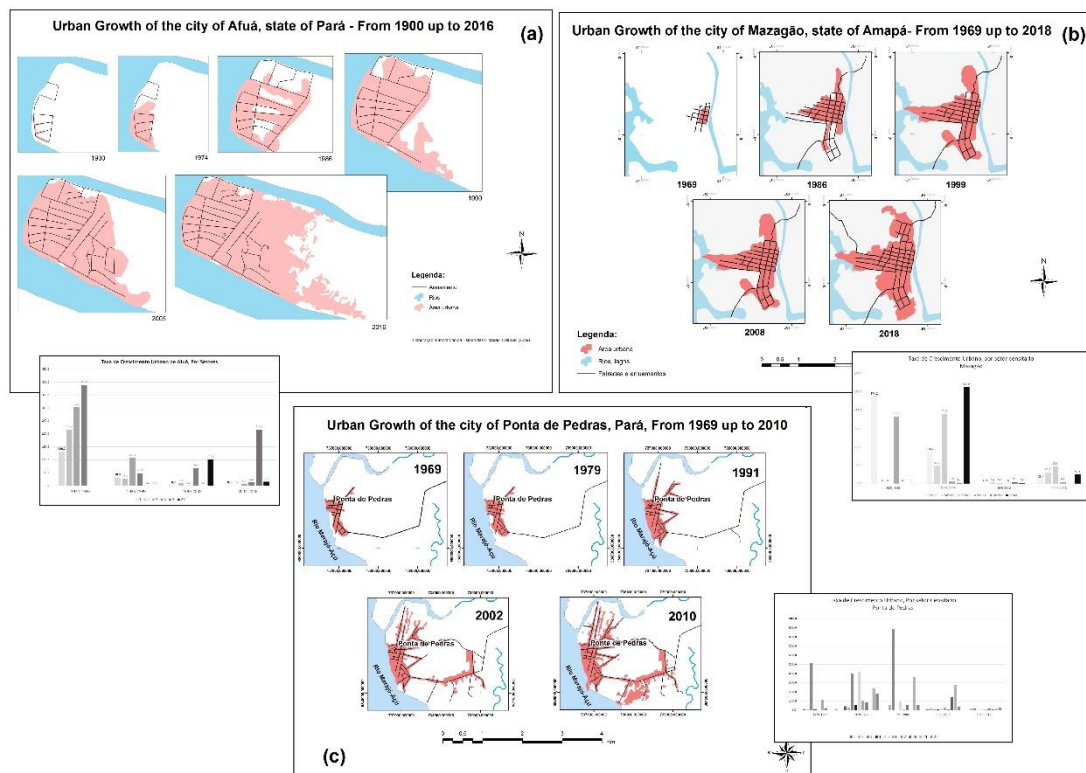
The pace of growth of urban spots in these towns was similar. Figure 3 shows the mapping of the urban areas of these towns, at different times. The mapping was carried out from satellite images and aerial photographs available for the areas studied, which explains the fact that images from different moments were used, and not a single pattern, of years, for all, varying between the end of the 1960s to the mid-2020s.

It is observed that Afuá, a floodplain town, presented a significant growth between 1980 and 1999, when it grew 79.3% in Figure 3a. After this period, it continued to grow at a rate of around 50%. In absolute terms, the growth is negligible. However, in relative terms, this growth was quite intense in some census sectors: 1 and 2, in the 1st period, from 1974 to 1986 (130% and 216%), sector 3, in the period from 1986 to 1999 (108%); sector 5, in the period 1999-2005, when the Capim Marinho neighborhood emerged (32,717%), which was formed from an occupation; and sector 27, between 1999 and 2005, more than 8,000%.

Ponta de Pedras (Figure 3c) showed a significant growth of the urban area between 1991 and 2002, when it grew 71%. After 2000, there was a slowdown, and between 2010 and 2014, the town grew by 10.5% in area. There is also a difference in the intensity of growth between the different census tracts. Sector 1, referring to the central area, on dry land, more consolidated, grew 42% between 1979 and 1991; sector 3, also on dry land, grew the most between 1969-1979, 1979-1991 and 1991-2002 (517%, 399% and 8867%, respectively); the census sectors of the urban

floodplain, 2, 5 and 22, close to the town center, were the ones that grew the most, between 1979-1991 (418%, sector 5, and 180% for sector 22), and between 1991 and 2002, when sector 2 showed the highest growth (54%). Sectors 20 and 21, on dry land, had the highest growth between 2002-2010 (143% and 275%); sector 21 grew a lot between 1979 and 2002 (239% and 360%). Between 2010 and 2014, sector 22, the urban floodplain, had the highest growth among all urban sectors (24%).

Figure 3 – Urban growth of each town studied by census.



Source: Elaborated by the authors (2021) from satellite images and aerial photographs, during different years.

As a dry land town, Mazagão (Figure 3b) grew, in intensity, in a differentiated way, in relation to the other two towns: between 1986 and 1999, it presented a growth of 762.9%; after 1999, there was a slowdown and, between 2000 and 2018, it grew by more than 33%, this growth reflects the increase in the urban population, over the periods mapped. Census sector 1 with the oldest occupation was the one that grew the most, during the period from 1969 to 1986 (474%) and from 1986 to 1999 (367%). Sector 3 grew a lot in the period from 1986 to 1999 (381%). Sector 4 also grew from 1969 to 1986 (367%), and sector 10, from 1986 to 1999 (528%) both are far from the central area.

In all towns, there was no vertical growth, only horizontal. This situation reflects the availability of urban land, which allows for this more horizontal growth, with a predominance of houses, such as residential units. This pattern favors the spread of growth in the urban area. One explanation for the growth of these towns lies in the intensification of açaí production, for Mazagão and Ponta de Pedras, which favored migration from the interior (communities) to the towns, in the search for an urban residence and easy access to education. Afuá grew as a town

that offers access to different services and a differentiated infrastructure, in relation to the surrounding riverside communities.

The growth of these towns, in area, was not accompanied by investment in infrastructure (COSTA; MONTAIA, 2020). Figure 4 presents the mapping carried out with the information collected, in the field, in urban households, through the application of questionnaires, as explained in the methodology. The figure is organized in columns: the 4th presents the access to the water supply; in item 4.b, the destination of domestic effluents is observed; the figures in column 4.c show access to electricity in households and street lighting; images exemplify the situation presented.

Regarding Afuá (4.1.a), 84.4% of households have water supply from Pará Sanitization Company (COSANPA) and 40% of households do not have a bathroom. Supply is more significant (more than 90% of households) in the more central areas of the town. However, in the areas of recent occupation (Capim Marinho), there is no access to water supply, or it is precarious, predominating the consumption of water from the river.

In Ponta de Pedras (Figure 4.2.a), it is observed that, on average, 74% of the households have a water supply, 27% do not have a bathroom. In the oldest census tracts (1, 4 and 2), this value reaches more than 90% of households, while in the floodplain sectors (22 and 5) and in the occupation sectors after 1994, it is usual to use a well as a source of household water.

Mazagão (Figure 4.3.a) has 41% of households with water supply and 36% of households without a bathroom. In census tracts 4, 5 and 10, Amapá Water and Sewage Company (CAESA) predominates, in 40% of households and in sectors 1 and 2, more than 45% of households collect water from artesian wells.

In the photographs in Figure 4, there are examples of the water supply situation in these towns. It can be seen, in all the images, a very great precariousness in the quality of the piping, when it exists, and of the collection of water in the rivers. Figure 4b also shows the situation of the destination of domestic effluents, with the predominant situation repeating the reality of thousands of other towns in Brazil, where there is no sewage collection and disposal in septic tanks predominates. A problem with this type of disposal is the compromise of groundwater and contamination of water sources. In photographs 4.1.b, 4.2.b and 4.3.b, it can be seen that the bathrooms of the residences are located outside the house, with the discharge of waste directly into the creek (Afuá and Ponta) or directly onto the ground (Ponta de Pedras and Mazagão).

Another important aspect is related to public lighting and access to electricity in households. In all towns, energy at home is almost full (more than 80% of homes) and street lighting also serves almost all city streets in Afuá and Ponta de Pedras. In Mazagão, public lighting varies from 20% to 80% of the streets, in the different census tracts. It should be noted that the amount paid for electricity by residents is quite high in Mazagão and Afuá, considering that the thermoelectric supply system still exists.

Oliveira and Schor (2013, p. 226) explain that basic infrastructure services are a matter of citizenship in the Amazon, especially for riverside populations, and, as public policies, must be decentralized to serve the greatest possible number of people. An example of these assertive actions is the alternative that the population

of these towns finds for water treatment, which involves creativity and resilience, to consume better water than is available.

Figure 4 – Mapping of access to basic infrastructure in Afuá (4.1), Ponta de Pedras (4.2) and Mazagão (4.3), highlighting: water supply (a), sewage disposal (b) and access to electricity (w)



Source: Elaborated by the authors (2021), based on data collected in the application of questionnaires in urban households, using the cartographic base of IBGE (2021).

Information collected allowed us to perceive that some residents consume the water provided by the public supply (Ponta de Pedras 59%, Mazagão 60% and Afuá 30%). For those who do not receive water from the supply system, it can be seen that they use water from the river for consumption and boil it, as in Afuá (25%); in Mazagão, the alternative is drinking water from the well, for 22% of the interviewed families. The treatment of this water follows certain standards: Ponta de Pedras and Afuá, most respondents treat water before consumption (66% and 79%, respectively) and in Mazagão only 18% of respondents follow this procedure. Among those who treat water before consumption, the most common procedures are filtering (27% in Ponta de Pedras, 39% in Afuá and 98% in Mazagão); in Ponta de Pedras and in Afuá, residents use hypochlorite to treat water (60% and 34%, respectively).

These are actions of the population that demonstrate their proactivity to the low quality of the water supply service, or its lack, which is reflected in the health

conditions of the population. The quality of the water, because it is not treated, is unfit for consumption and becomes one of the causes for the high rates of diarrhea, verminoses, parasites, among others: in Afuá, 41% of households reported having episodes of diarrhea; in Ponta de Pedras, diarrheal diseases were registered in 8% of households; and in Mazagão, diarrheal diseases were reported by 31% of households. According to survey data, Afuá is the town with the highest rate of waterborne diseases. This is most likely related to the absence of sewage collection and the number of households that collect water from the river for consumption (28.6%). This situation presents a paradox: resource abundance x low quality of the product consumed by the population.

Despite not being apprehended immediately, income is an important component of the residents' quality of life. Regarding the maintenance of residents of small towns, Cardoso and Lima (2006, p. 20) explain that there is a strong dependence of the municipalities of Pará on transfers from the Union and that the “[...] observation of spatialization of income data in towns, immediate surroundings and municipalities, reveals how towns tend to house poorer populations [...]”.

Thus, income is reflected in the organization of this space, not establishing a classic socio-spatial segregation, considering that there is no space for rich and poor in these small towns, however it conditions access to services found in the town, or outside it. In Mazagão, the family income, in 88% of households, was up to 2 minimum wages (mw), and in 60% the income does not exceed 1 mw⁵. In Afuá, this situation does not change, having been found that, in 79% of households, the family income is up to 2 mw, predominating, in 49%, income of up to 1 mw. In Ponta de Pedras, 70% of households had an average family income of up to 2 mw and 34% of up to one salary. In all towns, there is no census tract, particularly where average incomes higher than 3 mw predominate. However, in some households this purchasing power is quite high, with average incomes greater than 10 mw.

When considering which activities are the most important in the composition of family income, some aspects call attention, in all towns, as shown in box 1.

This information brings the small towns in the delta closer to several others in Brazil. That is, what is visible, and found elsewhere, approximates these realities. But what is unique, what is characteristic of these communities, which make them such a peculiar urban universe and which contribute, in their own way, to understanding the urbanization process in the Amazon?

⁵ In 2017, when the questionnaires were applied, the value of 1 mw was BRL 937.00.

Box 1

1. Retirement is the main source of family income for 22% of households in Ponta de Pedras, 17% in Afuá and 12% in Mazagão;
2. Income from the Bolsa Família Program is the main income for 31% of families in Mazagão, 14% in Afuá, and 9.5% in Ponta de Pedras;
3. Income from wages, linked to family members' occupations, is especially important for 30% of households in Afuá, 27% in Mazagão and 13% in Ponta de Pedras;
4. Açaí and fishing, as activities linked to forest resources, were cited as the most important income component for 26.5% of families in Ponta de Pedras, 14% in Mazagão and 8.5% in Afuá.

These data demonstrate that income transfer programs are an encouragement for the population of these towns, in which informality still predominates. RAI data (MTE, 2021) show that more than 87% of formal employment in the municipalities of Afuá and Ponta de Pedras is in the public sector, while in Mazagão, this value drops to 51%, influenced by local works, responsible for 23% of hires. The timber industry, in Afuá, employed, in 2019, almost 9% of formal workers; in Ponta de Pedras, commerce employed 9%. Comparing with EAP data, these values show that in Afuá, 24% of this population is in formal jobs, 13% in Ponta de Pedras and 23% in Mazagão.

4.2 The Invisible in the Delta Small Towns

The riverside landscape in these towns, the RIBEIRURBANO, is common in the Delta. Attention is drawn to the population's alternatives to occupying the urban floodplain, especially in towns where this environment is common. In figure 5, it is possible to observe the mapping of urban areas, of each town, presenting the predominant physical characteristic.

For Afuá, a town built on docks, the floodplain imposed on residents the option of respecting the environment, as seen in the construction of bridges to facilitate internal traffic, and very colorful wooden stilt houses, which make the urban landscape a pleasant sight to the visitor's eye.

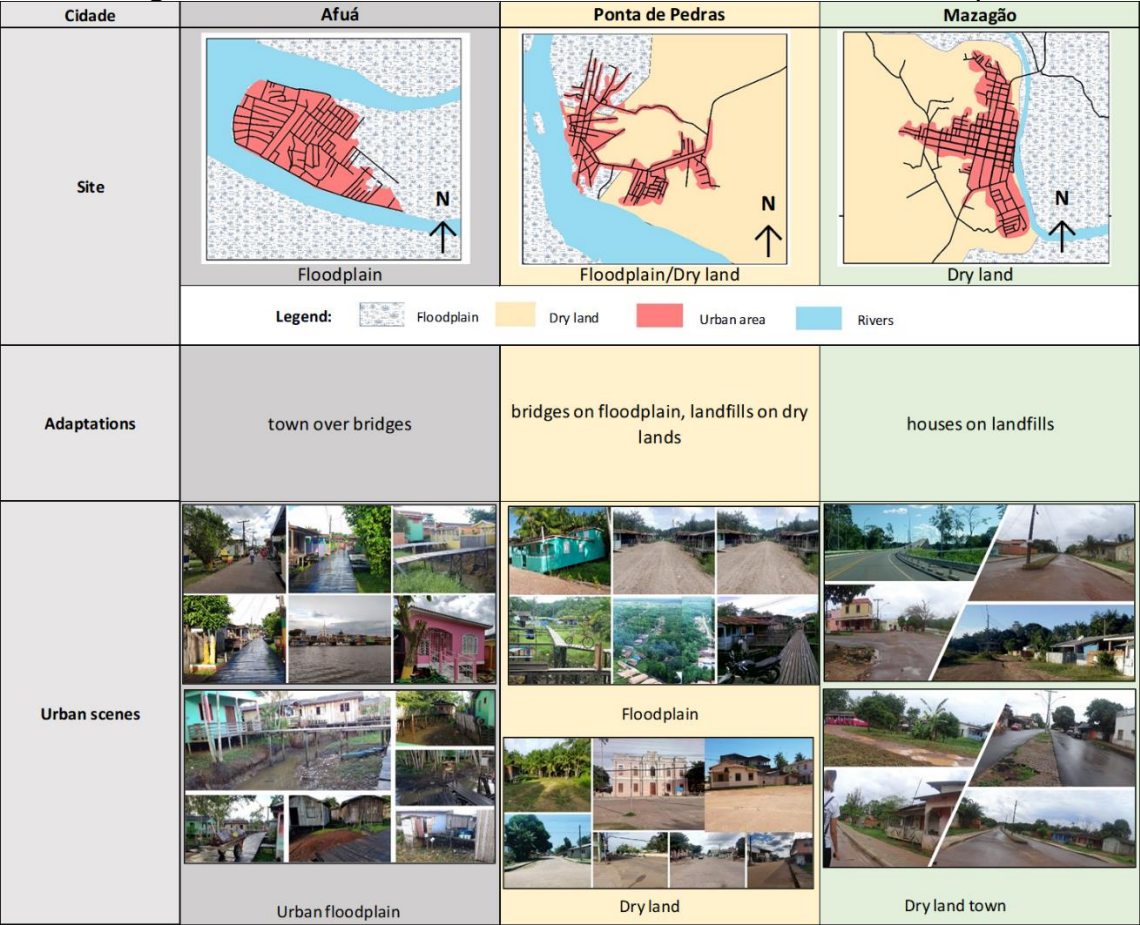
In Figure 5a, the drawings, about the constructive adaptations, and the images of the town demonstrate how the population of Afuá not only adapted to the imposition of the environment but transformed it into a town that coexists with the dynamics of the tide, making the days of lançante⁶ a party.

Ponta de Pedras presents a mix of floodplain and dry land environment. In the floodplain areas, bridges still predominate, as can be seen in the photographs in Figure 5.b. On the dry land, buildings from the late 19th century can still be found, such as the Boulhosa family mansion, and from the early 20th century, such as the City Hall building. The urban floodplain has been grounded since 2011 by the municipal government, with the justification that this action will facilitate the coming and going of the population, but not how to “teach” nature this new

⁶ Lançante: also known as “big waters”, this phenomenon every year, between the months of March and April, and refers to the moment when the river water invades the entire town, making Afuá recognized as the “Marajoara Venice”.

dynamic. Valota (2019) explains that an effect of this process has been felt by residents, in the most intense tides in these neighborhoods.

Figure 5 – Characteristics of the Towns: sites and urban landscape



Source: Elaborated by the authors, based on data from fieldwork and mapping of the urban area, with remote sensing products. The images, from the “adaptations” line, were adapted from Cardoso et al. (2021).

Mazagão (Figure 5c) is an example of a dry land town. Until the 2010s, access to the town was via the river. With the construction of bridges over rivers, the highway allows connection to Macapá, the state capital, in one hour at the most. Despite presenting a site more conducive to occupation, as it is less exposed to tidal flooding, the town is sparsely occupied, with very wide streets, remnants of the colonial period. Wooden houses are found, but brick buildings predominate, deviating from the construction pattern of riverside towns.

Figure 5 also shows the shape of these towns. Afuá has a compact urban form, imposed by the floodplain it occupies. Ponta de Pedras has a dendritic pattern, as many streets follow the small streams that cross the town and form the urban floodplain. Mazagão has a longitudinal shape, following the bank of the river that bathes it, presenting streets in orthogonal shape, memories of its past.

The shape of these towns, considering the space as a system of objects, is also a system of actions (SANTOS, 2014), because the understanding of these towns is composed by interpersonal dynamics, by the life that animates their forms, by an architecture that expresses the way of life of these residents. That is, despite the

material precariousness, there is an urban space with infrastructure that distinguishes it from the rural one, and, at the same time, an urban psychosphere, which is a practical behavior, between space and society, demonstrated in beliefs, desires, wills and habits (SANTOS, 2013, p. 30).

In this sense, it is that this reality branches out in the whole, because, if the psychosphere of the technical-scientific environment is the “domain of the whole country”, it is not, in the same way, nor with the same clothes, when it comes to the place. It manifests itself in its particularity (the hybrid between the general and the singular), in what Montoia and Costa (2019) call the “ribeirurbano”, intertwining space and man. It is space, as it deals with the place, its daily life, which is intertwined with the local physiognomy, with the riverside identity, and has a broad influence of the forest, in the maintenance of symbolic relations with the river; however, at the same time, it is an urban agglomeration and has the presence of tertiary activities. The ribeirurbano is a society that maintains relationships in networks, of survival, with activities from the informal circuit of the economy, alongside non-urban functions, in the production of a social space that, despite maintaining the riverside ethos, is the urbanized riverside. It is an indigenization of modernity (SAHLINS, 1997), that is, when local people adapt to modernity, in their own way, when the urbanization process itself, in these studied cases, maintains a discourse of similarities.

It is a relationship of antithesis, between city and countryside (or interior, as in the local language). The riverside dwelling has multilocation of residences, which sometimes uses the urban structure and its services, sometimes practices activities related to the rural, which help their survival. For example, in Afuá, 27% of families claimed to have a second home; in Ponta de Pedras, 31%, while in Mazagão, this figure is 15%. It is important to mention that there is a predominance of second homes in the interior of the municipality, in Afuá (62%) and Ponta de Pedras (72%), and in Mazagão, the predominance is of residences in other towns (51%), mainly in Macapá, to allow access to urban services that do not exist in the small town.

In this relationship, cooperative work (maintenance of financial resources between families, commercial relationships and shelter) sustain family relationships between the city and the countryside. Montoia and Costa (2020, p. 608) found that in Ponta de Pedras, 77% of household heads have relatives residing in rural communities; in Afuá, they observed that 80% of urban families have relatives living in riverside communities, in the interior of the municipality; in Mazagão, 63% of families said they had relatives in rural communities, within the municipality or in other nearby municipalities.

These family relationships are marked by the sending of financial resources, support during the açaí harvest period, which support family relationships and commercial relationships between the interior and the city and provide an improvement in the family income of those who live in the urban area (COSTA et al., 2012, p. 609). Many of these families send and receive resources, predominantly food, which helps with the food of the month.

Finally, living in the city is shelter, as it works as a safe haven for all family members when they need to go to medical appointments, get benefits, or study. Montoia and Costa (2020, p. 609) explain that, in Ponta de Pedras, 81% of families have a member who travels to Belém, without an established frequency, for

medical care or health treatment. In Afuá, 33% of families said they receive their relatives for medical appointments, on a monthly basis. In Mazagão, this assistance happens to 25% of the families, on a monthly basis.

The family social network, in this way, completes the architecture of these towns, as it maintains the elements of survival and social protection of certain groups or individuals. As Valota (2019, p. 169) presented, in the absence of the State, these groups are, spontaneously, the main collaborators in a resilience network, as it presents an opportunity for these families to overcome an immediate need, which is the food.

In this system of objects and actions, the architecture of these towns, that is, their body, is the result of their physical structure (site)/constructed, through historical and social processes, their content being river-urban, and the relations of cooperation in family networks, its essence.

5 FINAL REMARKS

When we think of the Amazon, we know that this region is a microcosm of global acceleration, that is, the speed of transformation of the territory and the explanations for these transformations are increasingly connected to processes that take place on a world scale. This is a reality in rural areas, in urban areas, in large and even smaller towns. In this urban environment, as Castro (2006, p. 15) explains, the existence of an urban mosaic is apprehended, where “the manifestation of a hierarchization is verified, with a distinction between the existing rural and urban ways of life”.

The economy of resources, which prevails in riverside communities, is verified in small towns, also on the riverside. Castro (2006, p. 35) clarifies that “A good part of the population that lives in the Amazon towns maintains work processes that result from forest uses with a significant number of products transformed by working with wood, fruits, herbs and seeds”. However, this economy of resources does not translate into a municipal economy of investments in the needs of its population. Thus, in small towns, more basic urban problems are found, such as equal access to treated water, sewage collection and treatment, basic education, health, housing, mobility, among others. However, these towns are also spaces of hope, solidarity, and the *riberubano*.

The sites of these small towns interact with the environment and with its population, which has developed methods of adapting to this environment, in order to allow a more sustainable human x environment interaction. The dry land and the floodplain were occupied and contributed to the establishment of towns coexisting with these two situations of siege. In this study, it was observed that the constructive adaptations are examples of how the population of Afuá adjusted to the dynamics of the environment and transformed it into a town that coexists with high tides. Ponta de Pedras has a site that mixes floodplain and dry land, with bridges that allow the occupation of the urban floodplain, which has been grounded, by the municipal government, to facilitate the mobility of residents, with environmental consequences yet to be perceived. Mazagão has a land site, elevated in relation to the river that borders the town, where brick buildings predominate, not following the construction pattern of riverside towns. These different sites

cannot be ranked worse or better, they are different. This is a uniqueness of these small towns, which is reinforced by the social relationships that give life to the built environment.

In this sense, this uniqueness manifests itself in the ribeirurbano, where space and man interact. The space-place, which reflects the daily life of its residents, makes explicit the riverside identity, influenced by the forest, by the rivers. At the same time, it is the urban environment that allows access to tertiary activities, to services, even those that are deficient, but which present themselves as opportunities for residents, because “in the middle of nowhere, anything is something”.

The ribeirurbano is a society that maintains relationships in networks, of survival, with activities in the informal circuit of the economy, alongside urban functions, important to the residents of the surroundings. It is also an extensive urbanization, a mix between urban and rural.

The ribeirurbano is also constituted by the multilocation of residences, which help the survival of its residents. In this relationship, cooperative activities contribute to the maintenance of family relationships between city and countryside.

Thus, the initial question of this paper, “in what terms are the small towns in the Amazon River Delta presented?”, led us to reflect on the importance of small towns, their similarities, but, above all, their singularities. The ribeirurbano is the manifestation of these singularities, which must be considered by public policies, to give visibility to these urban realities, and not ignore them. Small towns are important urban realities that need to be considered.

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