

## SCHOOL GEOGRAPHY ATLAS OF ASSÚ (RN): DIDACTIC MATERIAL FOR THE STUDY OF THE PLACE

*Atlas geográfico escolar de Assú (RN): material didático para o estudo do lugar*

*Atlas geográfico escolar de Assú (RN): material didáctico para el estudio del lugar*



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### ABSTRACT

The teaching of Geography in basic education aims to promote the study and/or problematization of the place as a lived space, being such place understood as a category of analysis of the geographical space. In the last decade, the production of didactic-pedagogical materials that address reality on a local scale has been stimulated and the Municipal School Atlases are among these materials. The purpose of this research was to analyze the School Geography Atlas of the Municipality of Assú (RN) designed to be used as didactic material, in order to mediate the teaching-learning of the Geography subject in the second cycle of Elementary Education. The methodological stages of the research consisted of: 1) bibliographic review; 2) cartographic survey; 3) deskwork; 4) field research; and 5) organization of the boards that make up the Atlas. As a result, it was found that the Atlases are important didactic-pedagogical resources that can make the teaching of Geography more dynamic, with the study of the place as a starting point capable of bringing students closer to geographical knowledge and concepts. The lack of local information is still a major limiting factor in the teaching practice, as it is fragmented and often decontextualized. This finding strengthens the use of these didactic materials in the classroom. Cartographic representations contribute to the contextualized understanding of the local reality, making it possible to spatialize both physical and social phenomena. The Atlases play a key role in the teaching of Geography, in addition to mediating the teaching-learning process in order that it is capable of leading students to spatial thinking.

**Keywords:** School cartography; Didactic material; Municipal atlas; Study of the place.

<http://periodicos.apps.uern.br/index.php/GEOTemas/index>

## RESUMO

O ensino de Geografia na educação básica busca promover o estudo e/ou problematização do lugar enquanto espaço vivido, sendo este entendido como categoria de análise do espaço geográfico. Na última década, impulsionou-se a produção de materiais didático-pedagógicos que abordem a realidade em escala local e entre estes materiais estão os Atlas Escolares Municipais. O objetivo da presente pesquisa foi analisar o Atlas Geográfico Escolar do Município de Assú (RN) construído para ser utilizado como material didático, de forma a mediar o ensino-aprendizagem da disciplina Geografia no segundo ciclo do Ensino Fundamental. As etapas metodológicas da pesquisa consistiram em: 1) levantamento bibliográfico; 2) levantamento cartográfico; 3) trabalho de gabinete; 4) pesquisa de campo; e 5) organização das pranchas que compõem o Atlas. Como resultados, constatou-se que os Atlas se apresentam como importantes recursos didático-pedagógicos que podem dinamizar o ensino de Geografia, tendo o estudo do lugar como ponto de partida capaz de aproximar os educandos dos conhecimentos e conceitos geográficos. A falta de informações, em nível local, ainda é um grande limitador no fazer docente, pois elas se encontram fragmentadas e, por muitas vezes, descontextualizadas. Essa constatação fortalece o uso desses materiais didáticos em sala de aula. As representações cartográficas contribuem para o entendimento contextualizado da realidade local, possibilitando espacializar fenômenos, tanto físicos quanto sociais. Os Atlas assumem papel importante no que se refere ao ensino de Geografia, além de mediar o processo de ensino-aprendizagem para que seja capaz de conduzir ao pensamento espacial nos educandos.

**Palavras-chave:** Cartografia escolar; Material didático; Atlas municipal; Estudo do lugar.

## RESUMEN

La enseñanza de la Geografía en la educación básica tiene como objetivo promover el estudio y/o problematización del lugar como espacio vivido, lo que se entiende como una categoría de análisis del espacio geográfico. En la última década, se ha impulsado la producción de materiales didático-pedagógicos que aborden la realidad a escala local y entre estos materiales se encuentran los Atlas Escolares Municipales. El objetivo de esta investigación fue analizar el Atlas Geográfico Escolar del Municipio de Assú (RN), construido para ser utilizado como material didático, con el fin de mediar en la enseñanza-aprendizaje de la disciplina Geografía en el segundo ciclo de la Escuela Básica. Las etapas metodológicas de la investigación consistieron en: 1) revisión bibliográfica; 2) revisión cartográfica; 3) trabajo de gabinete; 4) investigación de campo; y 5) organización de las planchas que componen el Atlas. Los resultados mostraron que los Atlas son importantes recursos didático-pedagógicos que pueden dinamizar la enseñanza de la Geografía, teniendo el estudio del lugar como punto de partida capaz de acercar a los alumnos a los conocimientos y conceptos geográficos. La falta de información local sigue siendo un factor limitante importante en la práctica docente, ya que está fragmentada y a menudo descontextualizada. Este hallazgo refuerza el uso de estos materiales didáticos en el aula. Las representaciones cartográficas contribuyen a la comprensión contextualizada de la realidad local, posibilitando espacializar fenómenos, tanto físicos como sociales. Los Atlas desempeñan un papel importante en la enseñanza de la Geografía, además de mediar el proceso de enseñanza-aprendizaje para que sea capaz de conducir al pensamiento espacial en los alumnos.

**Palabras clave:** Cartografía escolar; Material didático; Atlas municipal; Estudio del lugar.

## 1 INTRODUCTION

In the last decade, with the enactment of the Brazilian National Common Curricular Base (BNCC) (Brasil, 2017), which guides the study and problematization of the place

and/or experienced space as a category of analysis of the geographical space, the production of didactic-pedagogical materials that address reality on a local scale has been stimulated. These materials include municipal school atlases as products that help promote teaching-learning in a meaningful way, addressing social, cultural, and environmental elements.

Municipal school atlases are didactic-pedagogical materials that help systematize geographical knowledge and concepts in the teaching of Geography (Bueno, 2008; Honda, 2017; Santos, Guedes, 2019). Such productions have been developed throughout Brazil since the 1990s, mainly in the Center-West and Southeast regions of the country.

In the state of Rio Grande do Norte, these productions are still scarce, with the Atlas de São Rafael (Santos, Costa, Guedes, 2021) as an example of such productions and already consolidated in the state.

The production of didactic-pedagogical materials that address the study of the place refer to the teaching of Geography, specifically, School Geography which focuses on “broadening children’s experiences with space and time [...] by deepening their knowledge of themselves and their community, valuing the contexts closest to everyday life” (Brasil, 2017, p.362).

In this sense, the study of the place is part of the syllabus for Elementary Education I and II. However, it is necessary to develop skills aimed at the concomitant use of different languages (oral, written, cartographic, aesthetic, technical, etc.) capable of developing spatial thinking in the teaching of Geography (Brasil, 2017).

This highlights the need to design didactic materials that can contribute to understanding the socio-spatial and socio-environmental reality of the municipality, with a view to the integrated study of the society/nature relationship at various scales of time and space (Silva, Compiani, 2005; Martinelli, 2011).

Regarding the study of the place in the municipality of Assú (RN), there is a lack of school bibliography, which contributes to a fragmented understanding of the relationships inherent to the geographical space. Given the current scenario, it is essential to think about educational methodologies associated with the teaching of Geography that promote the construction of values, principles, and practices in the dialectical relationship between society and nature (Silva, Compiani, 2005; Oliveira, *et al.* 2017).

Thus, considering the hypothesis that the School Geography Atlas of Assú (RN) will help in learning about the geographical reality of the municipality, these are the questions that guided the preparation of this material: How can the Atlas contribute to the analysis and

interpretation of the integrated study of the society-nature relationship in the municipality of Assú (RN)? How important is the study of the place for developing a geographical perspective in the teaching practice? What are the possible paths to a satisfactory cartographic education in the teaching of Geography?

Based on the above, the purpose of this research was to analyze the School Geography Atlas of the Municipality of Assú (RN), designed to be used as didactic material, in order to mediate the teaching-learning of the Geography subject in the second cycle of Elementary Education.

The methodological procedures were based on studies already carried out on the design of municipal school atlases (Almeida *et al.*, 2000; Bueno, 2008, 2018; Le Sann, 2011, 2012; Martinelli, 2008, 2011), as well as authors who have contributed to the directions for analyzing similar materials (Le Sann, 2001, 2009; Bueno, 2008, 2018; Honda, 2017).

## 2 MUNICIPAL SCHOOL ATLASES AND THE STUDY OF THE PLACE

Municipal school atlases are didactic materials used in the teaching-learning process that help systematize geographical knowledge (Bueno, 2008). This systematization can be grouped into specific topics, such as cultural, historical, political, economic, and environmental aspects, among others (Almeida, 2000; Le Sann, 2011, 2012; Martinelli, 2011).

Regarding the school atlases, Bueno (2008) corroborates the understanding that they are methodological resources that have the potential to develop skills and competencies in the school environment, articulating concepts, principles, and strategies aimed at knowledge and discussion of various aspects, including the components of environmental and social reality at various geographical scales.

The use of the municipal school atlas has a direct impact on the teaching of Geography as it provides an opportunity to debate the intense transformations taking place in the physical and social space, with the place being a key category in the teaching-learning process (Oliveira *et al.*, 2017). With that in mind, Oliveira *et al.* (2017) add that municipal atlases are an innovative methodological proposal for the teaching of Geography, helping to develop skills in spatial, creative, interpretative, technological, and didactic dimensions, both for those who design them and for those who use them (Oliveira *et al.*, 2017).

According to Silva and Compiani (2005), the teaching of the place using school atlases enables students to understand citizenship as social and political participation,

equipping them with graphic representations and providing them with a greater understanding of their living place.

Honda (2017) presents municipal school atlases as important didactic resources for understanding and studying the place, including characteristics such as the cartographic representations of the physical and social elements of the place to be studied.

However, regarding the reading and understanding of the geographical space in education, Vieira (2019) states that, in addition to learning how to write and read, basic education students should be encouraged to understand the world around them, with the study of the place as its main approach.

Callai (2010, p. 30) understands the place as the location “where we live, coexist, work, in short, where our life happens”. This is considered an important concept used in the teaching of Geography, as the place experienced by students is characterized by the space where human relationships take place and is therefore endowed with meanings and experiences (Honda, 2017, p. 22).

Carlos (2007) adds that the study of the place makes it possible to understand social constructions through the appropriation of the lived space, as well as to understand globalization through the production of space and the articulations that occur on various scales.

From this perspective, it can be emphasized that the place is produced in the contradictory articulation between the global aspects that are announced and the historical specificity of the specific aspects. In this way, the place presents itself as a point of articulation between globality being constituted and the locality as a concrete specificity (Carlos, 2007, p.14). Still on the study of the place, Callai (2010) emphasizes that:

The study of the place as a possibility for learning Geography considers the everyday life of students and the school context as their foundations. In this sense, the place and everyday life are addressed in the school context as an opportunity to develop skills and competencies that contribute to citizen education, to the construction of concepts that constitute the specificity of geographical knowledge, and to the establishment of the foundations for learning geography in basic education (Callai, 2010, p.25).

It is understood that students bring with them a repertoire of knowledge acquired outside in the school, from their families and the environment in which they live, which can contribute to their education to properly “read the world”.

In this sense, in line with the BNCC, it is important to point out that, in Elementary Education, “the aim is to broaden children’s experiences with space and time [...] by

deepening their knowledge of themselves and their community, valuing the contexts closest to everyday life” (Brasil, 2017, p.362).

Bueno (2018) points out that the emphasis on places of experience in Elementary Education provides the opportunity to develop notions of belonging, location, orientation, and organization of experiences in various places such as the neighborhood, the school, or even the street.

Thus, the proposal of the municipal school atlas as didactic material significantly supports the construction of geographical concepts by children or even together with them in mediating the teaching-learning process. Regarding municipal school atlases and their use for understanding and studying the place, Aguiar (2003, p. 146) points out that “teaching the place using municipal school atlases can enable our students to understand citizenship as social and political participation, as well as make students to understand reality from other points of view, from other references”.

From this perspective, it is understood that school atlases that address the study of the lived reality contribute holistically to building the skills and abilities inherent to the 'initial studies of students in Elementary Education (Brasil, 2017).

Regarding municipal school atlases, Santos and Guedes (2019) point out that they differ from other textbooks as they consider the specificities of the place. In this sense, atlases do not follow a rigid order or sequence. The way they are systematized and designed allows the readers to relate what is known as prior knowledge to the content provided throughout the material (Bueno; Buque, 2017).

Regarding the importance of municipal school atlases and their theoretical-methodological conceptions as didactic-pedagogical material in the teaching-learning process in Geography, Rodrigues (2018) points out that:

Atlases, as didactic materials, must be designed and committed to the intellectual formation and critical reflection of students and teachers, based on a teaching-learning concept that considers the students not as recipients of information, but as active subjects in their learning. Our defense is that it is essential that the atlas is articulated with the concepts of application (What for? How? What?) and is theoretically and methodologically logical for the development of the teaching-learning process (Rodrigues, 2018, p.46).

This reflection becomes pertinent in understanding the pedagogical objectives that are guiding the production of school atlases in Brazil. According to Santos and Guedes (2019), the purpose of municipal school atlases is to assist teachers build school knowledge in the early years of basic education, based on 'the pre-existing knowledge of students of

where they live, enabling them to critically read the geographical space as well as their interaction with nature on a local, regional, and/or global “scale” (Le Sann, 2011, 2012; Honda, 2017; Bueno, 2018).

Silva and Compiani (2005) point out that the incorporation of school atlases into classroom practice is one of the ways found to enable the display and use of maps in the teaching of Geography. Regarding the use of maps in the teaching of Geography, Bueno and Buque (2017, p.247) emphasize:

When students are taught about the place with the use of images and maps, it is possible to open them up to a visual dialectic that allows them to reestablish the horizontality of their daily dialogue with the space-time of the place where they live and discover that they belong to it.

Given this understanding, it is understood that by using maps in the teaching of Geography, students are able to analyze their space-time relationship with the environment in which they live. Regarding municipal school atlases, Martinelli (2008) points out that when designing them, the first step for their coordination should be the integrated interweaving of two basic guidelines:

The “teaching of the map”, based on the theoretical-methodological positions on the construction of the notion of space and its representation by the children; “Teaching using the map”, based on promoting knowledge of the world using maps, from the close, experienced and k-n – place – to the distant unknown – world space (Martinelli, 2008, p.24).

According to Castro *et al.* (2018, p.91), it is necessary to educate adults from an early age, including the teaching of Cartography in their formal education, adding that Cartography must be rediscovered not only by Geography, but also by other fields of knowledge addressed in educational institutions. According to Silva and Compiani (2005), the most effective contributions of school atlases have traditionally been the location of places and the composition of thematic maps related to physical and human aspects, using various scales of analysis.

For Bueno (2018, p. 9), atlases help to build the concept of place in a systematic and meaningful way and, therefore, constitute relevant materials for studying this concept, as they articulate the relationship between the identity of society with the space in which it is inserted and to which it belongs (Le Sann, 2011, 2012; Martinelli, 2011). In this context, such contributions from atlases, especially school atlases, are part of a theoretical-methodological conception adopted by their authors (Silva, Compiani, 2005).

According to Martinelli (2011, p.58), designing a school atlas is not simple, as simplifying maps, making them more attractive, and selecting the easiest topics is not enough. When designing a municipal atlas, Martinelli (2011) points out the assumption that it is not just a collection of maps, but a systematic organization of cartographic representations with specific intellectual purposes.

Therefore, cartographic language is used by geographical science to graphically represent the phenomena (natural, social, and cultural) manifested in the geographical space (Martinelli, 2011). However, for Francischett (2002), understanding cartographic representations implies a process of acquiring knowledge and skills, so that it is possible to read the geographical space described there.

### 3 METHODOLOGICAL PROCEDURES

Reading the selected papers helped to ground the research in reflections on the theoretical-methodological approach to designing municipal school atlases (Almeida *et al.*, 2000; Bueno, 2008, 2018; Le Sann, 2011, 2012; Martinelli, 2008, 2011). Authors such as Le Sann (2001) and Bueno (2008; 2018) have contributed to the analysis of municipal school atlases that had already been produced. On the other hand, Honda (2017) and Le Sann (2009) point to the importance of atlases as materials for geographical education in the early years of Elementary Education.

In relation to the production of the Atlas, some websites of government agencies were consulted for the cartographic survey, such as the Brazilian Institute of Geography and Statistics (IBGE), the Brazilian Institute for Sustainable Development and Environment (IDEMA), and the website of the Brazilian National Spatial Data Infrastructure (INDE), with the aim of checking pre-existing vector data related to geographical and political-administrative boundaries, as well as data on hydrography, geology, geomorphology, climate, vegetation, and pedology.

The matrix data was based on images from satellites Landsat 8, with a spatial resolution of 30m, and Sentinel 2, with a spatial resolution of 10m, made available free of charge by the United States Geological Survey (USGS) and the European Space Agency (ESA).

The deskwork stage was based on working with vector files (geology, geomorphology, pedology, and hydrography), georeferenced files, and satellite images files in a GIS environment using the free open-source QGIS software, a multi-platform



geographical information system that allows the visualization, editing, and analysis of georeferenced data (vector and matrix) in the “QGIS 3.10.14 ‘La Coruña’” version.

The QGIS Software enabled the pre-processing and processing of satellite images using Digital Image Processing (DIP) techniques and methods combined with data modeling in a GIS environment, aiming to vectorize/classify the environmental and anthropic elements of the study area.

The field stage (*in loco*) made it possible to recognize the geographical space (urban and rural) of the researched municipality and to get to know and deepen the environmental characteristics visualized in the deskwork stage. It also consisted of collecting primary data from agencies such as the municipality and departments on the socio-environmental aspects of the researched area using photographic records and a brief description of the most relevant aspects, using georeferencing with the Global Positioning System (GPS) – Etrex 30 Garmim.

The analysis and interpretation of the data made it possible to understand the natural and social structures of the study area, making it possible to systematize the data collected in tables and graphs, organized in the Microsoft Excel software. As a result, it was possible to organize the structure of the boards that make up the material, with a view to submitting it for analysis by teachers who teach the Geography subject, in the basic education network in the municipality studied.

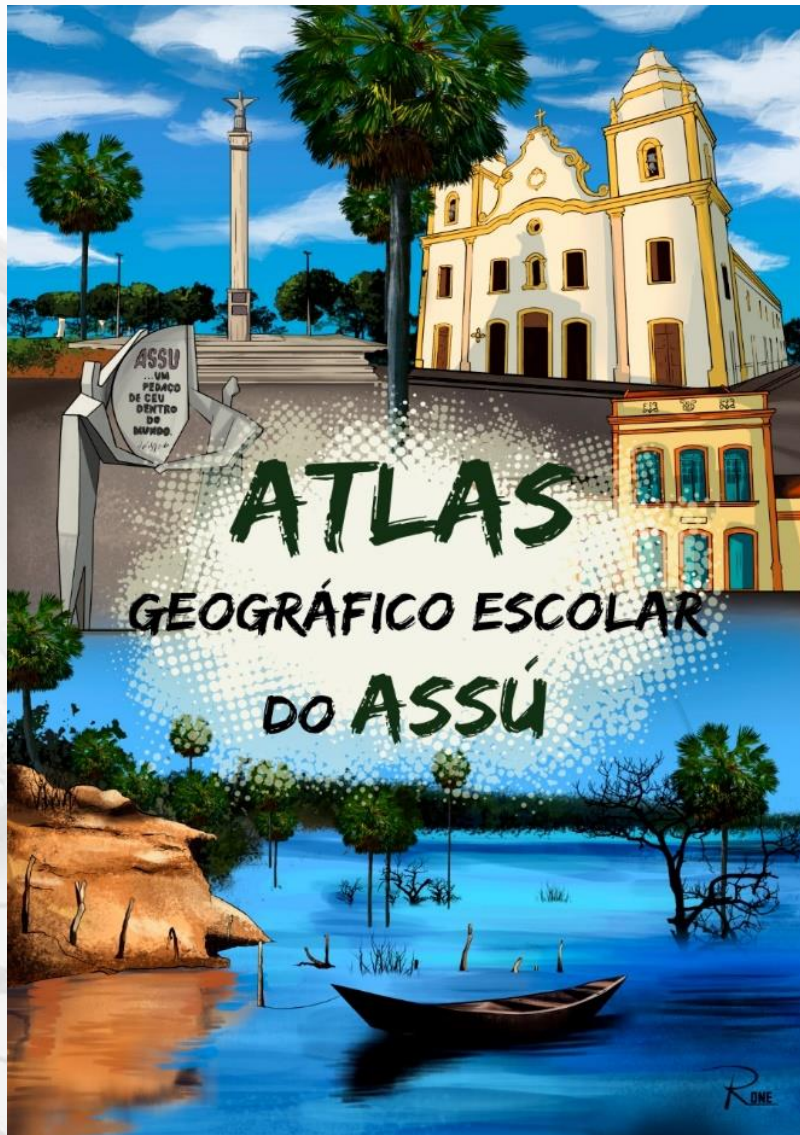
The boards refer to the format of the material being used, in which various topics are addressed, structured in such a way that students can be challenged to reason geographically about their everyday space (Rodrigues, 2018, p.89).

#### **4 ORGANIZATION AND STRUCTURE OF THE SCHOOL GEOGRAPHY ATLAS OF ASSÚ (RN)**

The School Geography Atlas of Assú (RN) is organized into didactic boards systematized using texts, images, graphs, tables, and maps, as well as suggestions for activities to deepen the content, contributing to make geographical concepts clear, as well as investigating the local space.

The cover of the Atlas (Figure 01) was designed and created to characterize, using a set of images, the main symbols that reflect the historical, cultural, religious, and environmental context of the municipality. It displays representative icons such as the Carnaúba palm tree, highlighted in the center of the image.

Figure 01 – Atlas cover



Source: Authors, 2022.

Since the foundation of Assú (RN) in the 17<sup>th</sup> century, religiosity has been an outstanding feature of the city, especially Catholicism, with Saint John the Baptist as the local patron saint. The parish church was founded in 1726, an important milestone in the process of municipal formation (Pinheiro, 2010). During the process of territorial formation, the city of Assú (RN) underwent changes related to the style of buildings in urban architecture, therefore the preservation of the century-old mansions that made up the first villages in the surroundings of the parish church is noticeable (Amorim, 2008).

The column located in Getúlio Vargas square, next to the parish church, is a representation associated with the possession and settlement landmarks of the city, reflecting a symbol of power. According to Pinheiro (2010), this structure was built to celebrate the arrival of the 20<sup>th</sup> century which, in the futuristic vision of some political

representatives, would be a golden period in the economic, social, and cultural history of all Brazilian citizens.

Lagoa do Piató, shown at the bottom of the cover, is a surface spring that can be associated with the establishment of the first villages and urban settlements in Assú (RN). The Janduí Indigenous people, as the first inhabitants of the region, migrated to the vicinity of the pond when they were full, serving as a source of supply for them (Pinheiro, 2010).

Next, the Atlas index (Figure 02) is organized into initial elements that comprise the guidelines for working with the Atlas, as well as a theoretical contribution to understanding the importance of cartographic literacy in the teaching of Geography. The structure and organization of the Atlas is arranged in 49 didactic boards designed and organized in different topics that will be able to bring geographical knowledge closer to the teaching of Geography.

**Figure 02 – Atlas index**

<b>Sumário</b>	
Apresentação.....	4
Introdução ao Atlas Geográfico Escolar.....	5
Alfabetização cartográfica.....	7
<b>Pranchas</b>	
1 Localizando Assú no Brasil e no mundo	11
2 Assú na regionalização do estado	13
3 Limites municipais e vias de acesso	15
4 Assú em uma imagem de satélite	17
5 A história de Assú	19
6 Símbolos do município	21
7 Estrutura político-administrativa	23
8 Espaço urbano	25
9 Bairro João Paulo II	27
10 Bairro Alto São Francisco	29
11 Bairro Bela Vista	31
12 Bairro Carnaubinha	33
13 Bairro Centro	35
14 Bairro Dom Elizeu	37
15 Bairro Feliz Assú	39
16 Bairro Frutilandia	41
17 Bairro Janduí	43
18 Bairro Lagoa do Ferreiro	45
19 Bairro Vila Nova da Princesa	47
20 Bairro Novo Horizonte	49
21 Bairro Farol	51
22 Bairro São João	53
23 Bairro Vertentes	55
24 Bairro Vista Bela	57
25 Bairro Irmã Lindalva	
26 Distrito Industrial	59
27 Espaço rural	61
28 População	63
29 Educação municipal	65
30 Patrimônio cultural e histórico	67
31 Feira livre	75
32 Comércio	77
33 Indústria	79
34 Serviços	81
35 Transportes	83
36 Agricultura	85
37 Pecuária	87
38 Meio ambiente	89
39 Resíduos sólidos	91
40 Tempo e clima	93
41 Geologia	95
42 As formas do relevo	97
43 Solos	99
44 Bacias hidrográficas	101
45 Águas superficiais	103
46 Lagoa do Piató	105
47 Águas subterrâneas	106
48 Vegetação e conservação	107
49 Uso do solo	109
Referências.....	111
Os autores.....	114

Source: Authors' collection, 2022.

The introductory part of the material focuses on building the children's Cartographic Literacy, which, according to Passini (2012), aims to educate the subject: from a map producer to an efficient reader of these representations.

In this way, the text brings basic notions and concepts about School Cartography and its importance in the teaching of Geography. Initially, it describes what a map is and what elements make it up; subsequently, it details the use of visual variables (Martinelli, 2019) in cartographic production, highlighting the use of shapes, colors, granulation, orientation, and size, as well as the use of icons and symbols for the cartographic design of the maps that make up the Atlas (Martinelli, 2011).

Next, a set of thematic boards that make up the School Geography Atlas of Assú (RN) is shown. The choice of the topics is based on guidelines outlined in the BNCC for the curricular component of Geography in Elementary Education (Brasil, 2017), as well as texts that discuss the understanding and study of the place on a local scale.

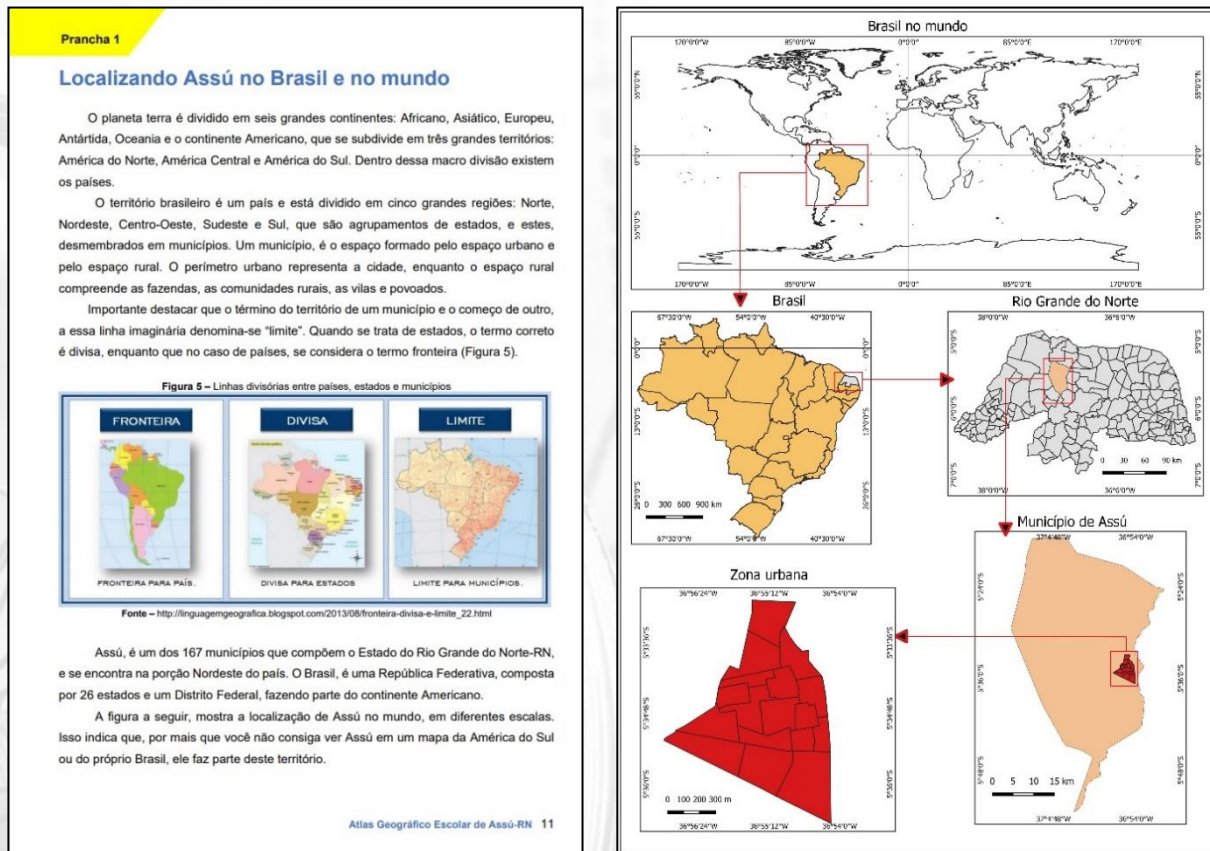
Board 1 (Figure 03) aims to describe the location of the municipality of Assú (RN) in relation to Brazil and the world. With this board, it is possible to address concepts in the classroom such as municipal, state, national, and global territorial organization important for systematizing spatial thinking in the teaching of Geography.

The text in Figure 03 begins with an explanation of the division of the world into its continents, highlighting their organization into countries, and then into regions and the groupings into states and municipalities. Concepts such as limits, boundaries, and borders are used to spatially understand the beginning or end of a given territorial area.

The local/global relationship on this board provides the students with the reflection that the municipality of Assú (RN) is not isolated from the rest of the world and is connected to other geographical spaces. This cartographic representation is intended to enable students to spatially reflect on where they live, making it possible to make connections on various scales.

That said, thinking about the spatialization of their municipality in different contexts is one of the goals structured within the school curriculum, according to the BNCC, with cartographic language as a mediator in the teaching-learning process in the teaching of Geography (Brasil, 2017).

**Figure 03 – Description of the municipality of Assú (RN) in relation to Brazil and Planet Earth**



Source: Authors, 2022.

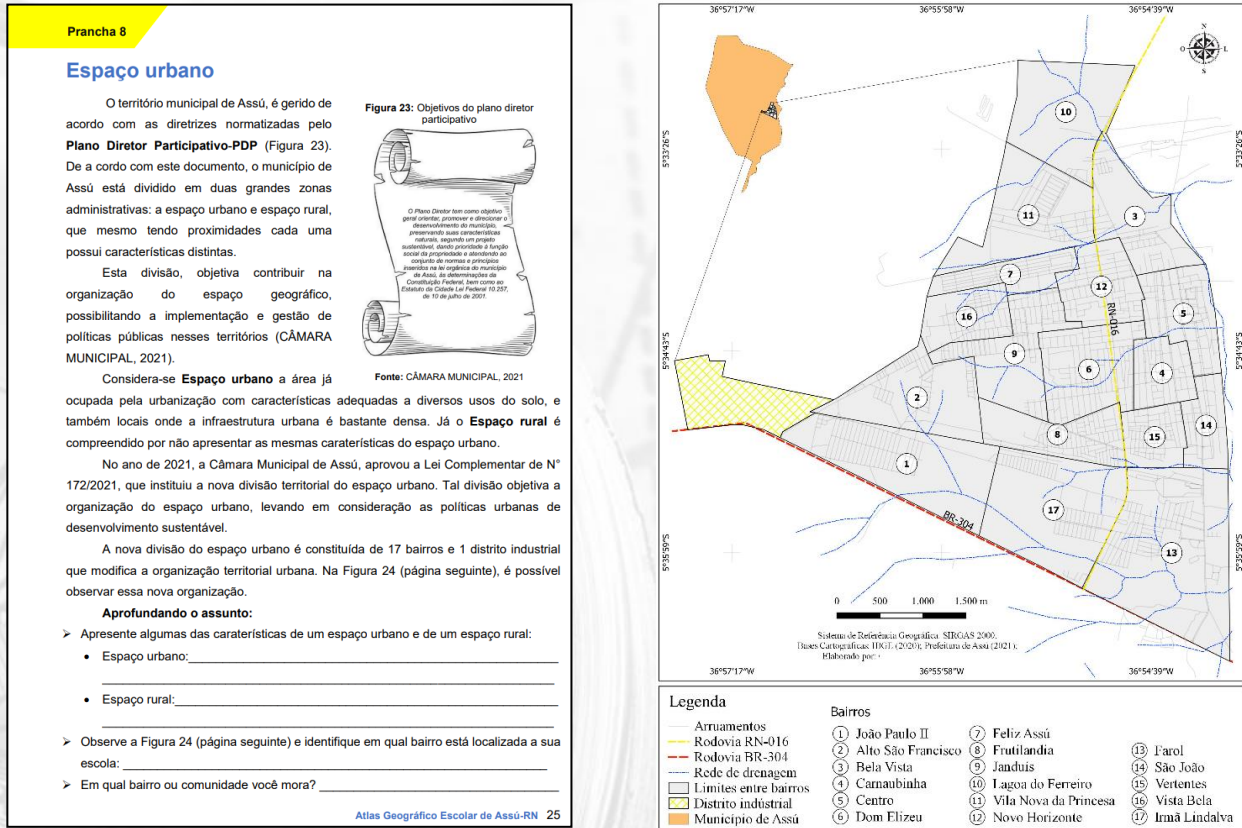
Figure 04 highlights the main characteristics of the socio-spatial organization of the urban area of Assú (RN). The text begins by emphasizing the organization of the municipal territory into administrative spaces (urban and rural), using the guidelines of the Participatory Master Plan (PDP) as the document that regulates this organization.

The cartographic representation in Figure 04 was based on the annexes of Complementary Law nr. 172/2021, which establishes the new territorial division of urban space into neighborhoods (PMA, 2021). The new redistribution of urban space adds two new neighborhoods and an industrial district.

The map of the neighborhoods enables teachers to address concepts such as use and occupation of space, considering the new division of neighborhoods as an evolutionary process of urban space. Other directions can be addressed, such as the changes to the landscape during this process, the various dynamics of urban expansion, the organization and socio-spatial distribution of the population, among other aspects. These examples can be observed with greater intensity in the peripheral neighborhoods, which are examples of

urban growth that show the most varied socio-spatial logics of growth inherent in an extremely unequal society.

**Figure 04 – Board showing the urban division of the municipality**

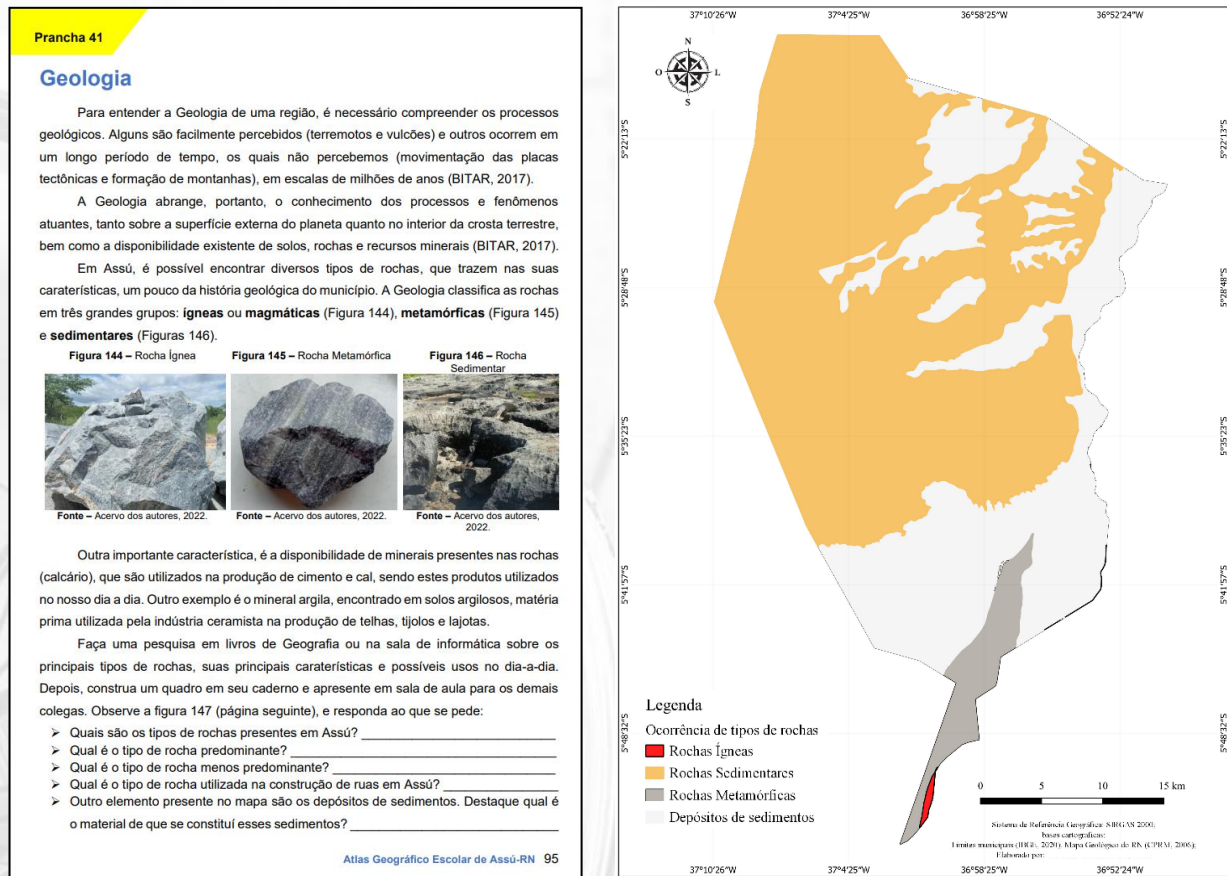


Source: Authors, 2022.

Some boards address the physical characteristics of the municipality. According to the BNCC, the Elementary Education addresses thematic units and objects of knowledge that enable students to identify the characteristics of natural and social landscapes (relief, vegetation covering, rivers, etc.) in the environment in which they live, as well as actions resulting in the conservation or degradation of these areas (Brasil, 2017).

Board 38 (Figure 05) shows the Geology topic, in which references to the geological processes of earth formation are displayed in the body of the text. Subsequently, with the aim of enabling students to interact more and understand the content, images of the main types of rocks in the region are shown, relating the geological formations of the municipality.

Figure 05 – Board on the geology of the municipality of Assú (RN)



Source: Authors, 2022.

Diverse types of rock and their formation are covered in both the Geography and Science curricular components of Elementary Education. In this sense, the interdisciplinary proposal of the School Atlas is built on each board, in which the articulation with other areas of knowledge proves to be essential for the development of teaching-learning for students in Elementary Education, and it is also suitable for use it in the most varied teaching age groups, such as in High School and Youth and Adult Education (EJA).

The activities on the board relating to Geology were designed so that students can understand how human beings appropriate natural resources for various benefits. This same board focuses on the map of the occurrence of rocks in the municipality of Assú (RN). The cartographic representation enables students to understand the spatial distribution of the various types of rock in the municipal territory.

Figure 06 shows the board with the municipality's hydrography, which explains what a hydrographic basin is, its main characteristics, the elements that make it up, etc. The

elements and characteristics of surface water represented by rivers, reservoirs, and natural lakes are also highlighted.

Figure 06 – Board showing the municipality's hydrography


**Prancha 45**

### Águas superficiais

As águas superficiais do município de Assú, são aquelas encontradas nos rios e em seus afluentes (canais fluviais ou riachos), lagoas naturais e reservatórios (açudes ou barragens), que se constituem fontes de abastecimento humano e dessedentação animal. Esse conjunto de elementos da paisagem é conhecido como hidrografia.

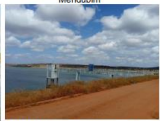
Em Assú, podemos encontrar diversos **Rios**. Onde os rios menores deságuam em um rio principal, o Piranhas-Açu, que margeia toda a extensão territorial a Leste do município (Figura 157). Diversos são os **Reservatórios** de pequeno, médio e grande porte, localizados em Assú. Entre eles, se destaca o reservatório Mendubim (Figura 158) e a barragem Amando Ribeiro Gonçalves (Figura 159). Estas estruturas são artificiais, construídas objetivando o acúmulo de água para fins diversos, como: a pesca artesanal, cultivo de agricultura familiar e a prática de lazer (GUEDES; AMARAL; FREITAS, 2020).

**Figura 157** – Rio Piranhas-Açu




Fonte – Acervo dos autores, 2021.

**Figura 158** – Reservatório Mendubim



Fonte – Acervo dos autores, 2019.

**Figura 159** – Lagoa do Piató



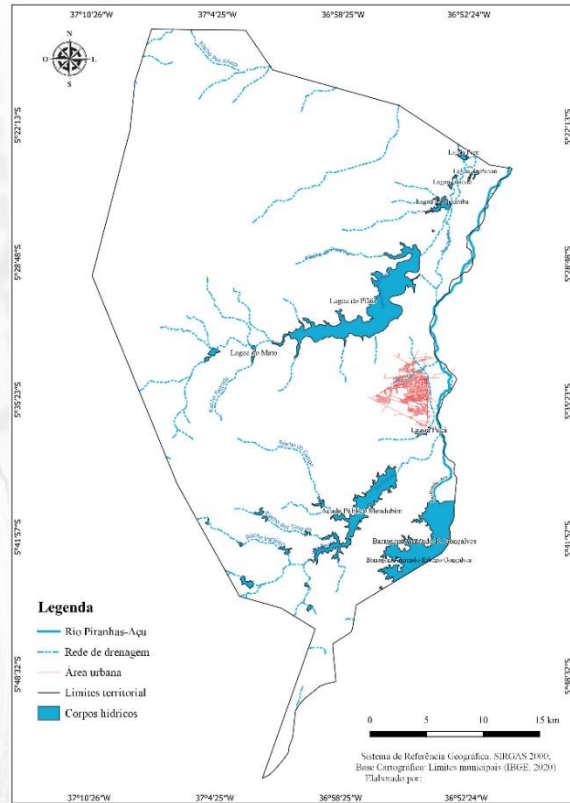
Fonte – Acervo dos autores, 2019.

No município de **Assú**, podemos encontrar diversas **lagoas** naturais temporárias (Figura 160, página seguinte), que fazem parte da **hidrografia**. Em períodos de **chuva**, elas enchem e secam no período de estiagem (GUEDES, 2021).

Responda ao que se pede a seguir:

- Além do rio Piranhas-Açu, quais outros rios você conhece no município? \_\_\_\_\_
- Converse com os seus colegas sobre problemas ambientais presentes nos rios e registre: \_\_\_\_\_
- Na sua opinião, qual a importância da construção de reservatórios em Assú? \_\_\_\_\_

Atlas Geográfico Escolar de Assú-RN 103



Source: Authors, 2022.

Figure 07 shows Lagoa do Piató, a natural surface spring that plays an important ecological and landscape role in the semi-arid region of the state of Rio Grande do Norte. The pond is also an important source of income and subsistence for the population living in its surroundings, including artisanal fishing for fish and shrimp, as well as planting crops such as corn, beans, sweet potatoes, among others.



Figure 07 – Board on Piató Lake

**Prancha 46**

### Lagoa do Piató

A Lagoa do **Piató** (Figura 161), é um dos maiores mananciais naturais de **água** do Estado do Rio Grande do Norte. Ela é um importante elemento natural da **paisagem**, e fonte de renda, para diversas comunidades que estão localizadas nos seus arredores.

**Figura 161 – Vista parcial da lagoa do Piató**

Fonte – GUEDES (2019)

- ❖ De acordo com os seus conhecimentos, responda em seu caderno:
  - Cite quais comunidades estão localizadas nos arredores da lagoa do Piató.
  - Quais atividades econômicas são desenvolvidas na lagoa?
  - Na sua opinião, qual a importância de preservarmos as lagoas naturais?
- ❖ Observe as palavras destacadas em **negrito** nas páginas anteriores e encontre-as na caça palavras abaixo. É possível ainda, encontrar outras palavras, como: reservatórios, rios e riachos.

A	A	R	R	E	S	E	R	V	A	T	Ó	R	I	O	S
C	D	F	G	H	J	Y	P	O	I	C	V	D	T	G	H
P	I	A	T	Ó	N	H	M	P	A	I	S	A	G	E	M
E	W	A	D	G	V	B	Y	H	I	O	M	K	H	N	T
Q	S	X	R	I	O	S	H	J	K	L	O	P	N	U	B
C	H	U	V	A	S	X	U	H	I	D	R	I	C	A	S
Q	W	L	N	N	G	H	I	Y	H	A	K	T	B	T	M
S	D	Z	Ç	U	L	A	G	O	A	S	L	W	E	R	H
Z	A	J	K	Y	R	G	H	J	O	V	G	S	A	E	U
A	S	S	Ú	J	K	L	Ç	M	I	O	B	D	E	W	J
R	E	R	T	V	H	I	D	R	O	G	R	A	F	I	A
T	A	R	I	A	C	H	O	S	A	F	G	Á	G	U	A

Atlas Geográfico Escolar de Assú-RN 105

Source: Authors, 2022.

Figure 08 characterizes the vegetation topic and its conservation, addressing the importance of preserving the biome. The text emphasizes the importance of the Assú National Forest (FLONA-AÇU), an important conservation unit that aims to maintain the Caatinga biome in Northeastern Brazil.

**Figure 08 – Board on the municipality’s vegetation**


**Prancha 48**

### Vegetação e conservação

O termo "Caatinga", é de origem Tupi-Guarani e significa "mata branca", o que caracteriza bem o aspecto da vegetação na estação seca, quando as folhas caem e apenas os troncos brancos das árvores e arbustos permanecem na paisagem (EMBRAPA, 2012).

A Caatinga presente em Assú, consiste em uma vegetação de pequeno porte, formada por árvores que variam de 2 a 5 metros (Figura 163).

**Figura 163 – Fitofisionomia do bioma Caatinga**



**Caatinga arbustiva**

Fonte – Disponível em: <https://www.acaatinga.org.br/sobre-a-caatinga/>

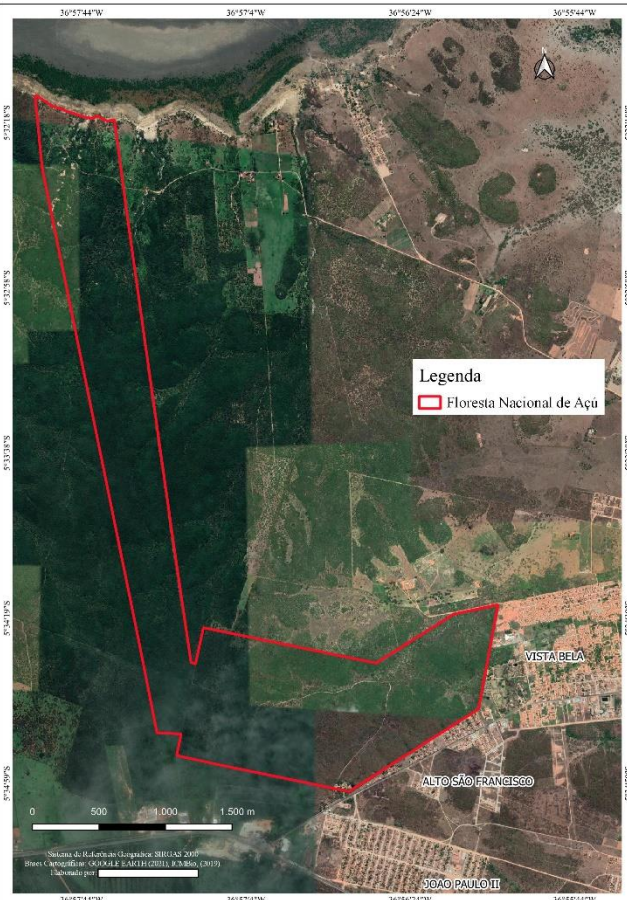
Essa vegetação vem sendo desmatada e queimada ao longo do tempo. Essas práticas, muitas vezes estão associadas ao desenvolvimento de atividades econômicas como o polo ceramista, agricultura irrigada, pecuária, extração de petróleo e instalação de parques de energia solar (SILVA FILHO, 2020).

Uma forma de preservar a nossa vegetação, são as reservas naturais ou unidades de conservação, como a Floresta Nacional de Assú (FLONA-AÇU), que tem como objetivo primordial a conservação da vegetação da Caatinga no semiárido Nordestino.

Por se localizar ao lado da zona urbana (Figura 164), ocorrem diversos impactos socioambientais. Dentre eles, podemos destacar a caça predatória da fauna (muitas das espécies ameaçadas de extinção), o desmatamento e queimadas da vegetação nativa (muitas delas endêmicas), além do descarte irregular de resíduos sólidos (lixo), nos seus entornos.

- ❖ Você sabia que pode contribuir para proteger a vegetação da Caatinga do seu município? Com a ajuda do seu professor(a), plante uma árvore nos arredores da sua escola ou em algum espaço próximo à sua casa, com o auxílio da sua mãe ou pai.
- ❖ Proponha ao seu professor(a), uma visita à Flona-Açu, com a proposta de conhecer de perto a biodiversidade dessa importante unidade de conservação, em nosso município.

Atlas Geográfico Escolar de Assú-RN 107



**Legenda**

☐ Floresta Nacional de Açu

**Source:** Authors, 2022.

Finally, the bibliographic references that supported the discussions present in the School Geography Atlas of Assú (RN) are detailed. The list of references enables teachers to deepen their knowledge in line with the topics addressed in the classroom.

In view of the above, the Atlas of the municipality of Assú (RN) stands out as an important didactic-pedagogical resource that can streamline the teaching of Geography, using the place as a starting point capable of bringing students closer to geographical knowledge and concepts.

## 5 FINAL COMMENTS

Regarding the research that resulted in the design of the Atlas, it is worth noting that it has made it possible to deepen knowledge regarding teaching and its educational role, with regard to the study of the place.

In relation to the study of the place in Assú (RN), it was observed that there is a lack of didactic-pedagogical materials that address the place and contribute to the fragmented

understanding of the geographical aspects and characteristics of the municipality being studied. The production of such materials is still a major challenge, given the numerous difficulties, such as the lack of organization of information at municipal level and the effective participation of teachers from the basic education network in the research, for example. These problems can affect the development of the research and, consequently, the product.

From this point of view, this study is an attempt, albeit an initial one, to bring together discussions on the design of municipal school atlases and their importance for the development of Geography teaching-learning. Thus, the research is part of the investigative fields of the study of the place, as a space endowed with experiences and meanings, using spatial representations as a way of mediating teaching-learning in a meaningful way.

In addition, it is noteworthy that the School Geography Atlas of Assú (RN) contributes to the teaching of Geography from a holistic perspective. From this perspective, the school atlas is understood as didactic-pedagogical material whose purpose is to help teach the local reality, cooperating with the construction and clarity of geographical concepts in the school space of the municipality of Assú (RN).

The boards that make up the material are structured according to the guidelines of the Brazilian education, designed in a didactic way, using various languages, thus enabling the development of skills and competencies structured in the Elementary Education curriculum for the Geography curriculum component.

Furthermore, cartographic representations contribute to the contextualized understanding of the local reality, making it possible to students to understand and spatialize both physical and social phenomena in the municipal territory. In this context, the Atlas plays a key role in terms of bringing the cartographic language closer to the teaching of Geography, in addition to mediating the teaching-learning process in order that it is capable of leading students to spatial and geographical thinking.

Finally, it is considered that such research and productions are recent at the state level, and it is opportune to encourage and suggest their development in other municipalities that can deepen the studies regarding the use of these materials in educational environments.

## **ACKNOWLEDGEMENTS**

The authors would like to thank Capes for its support through the grant/process: AUXPE DS Estaduais 0900/2022 / 88881.719864/2022- 01

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