#### Articles

# Borderscapes and water on the Bolivia's boundary with Brazil (Puerto Quijarro & Guayaramerín)

## Paisajes fronterizos y agua en el límite de Bolivia con Brasil (Puerto Quijarro y Guayaramerín)

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#### Abstract

This article aims to develop the notion of water and borderscape in Puerto Quijarro and Guayaramerín, Bolivian cities located at the international border with Brazil. The study is supported by a fieldwork conducted in 2018, with the review of historical, geographical, population and field income background mainly in the Bolivian international border. Semi-structured interviews were applied to officials associated with border control and transportation, in addition to registering observations, photographs and informal conversations. Three interpretative approaches are proposed as a research result: the first is distant and historical for both cases; the second is proposed on an urban scale for Puerto Quijarro, analyzing its morphology and a mural; and the third approach is proposed with an intersubjective perspective for Guayaramerín. In conclusion, border and water-scapes allow to identify metaphors such as: isolation, wall, wall and island, which problematize the relationship between society and nature in this water border.

Keywords: borderscape, waterscape, Guayaramerín, Puerto Quijarro, Bolivian border.

#### Resumen

El artículo tiene por objetivo desarrollar la noción de paisaje hídrico fronterizo en Puerto Quijarro y Guayaramerín, ciudades bolivianas localizadas al límite internacional con Brasil. El estudio se sostiene en un trabajo de campo realizado en 2018, con la revisión de antecedentes históricos, geográficos, poblacionales y de ingresos a terreno en el linde boliviano principalmente. Se aplicaron entrevistas semiestructuradas a funcionarios asociados al control y al transporte fronterizos, además de registrar observaciones, fotografías y conversaciones informales. Como resultado se proponen tres abordajes: el primero es distante e histórico para ambos casos; el segundo se plantea a escala urbana para Puerto Quijarro, analizando su morfología y un mural; y el tercer abordaje se plantea con una perspectiva intersubjetiva para

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Guayaramerín. En conclusión, los paisajes hídricos fronterizos permiten identificar narrativas sobre algunas metáforas: aislamiento, muralla, mural e isla, mismas que problematizan la relación entre sociedad y naturaleza en estas fronteras hídricas.

Palabras clave: paisaje fronterizo, paisaje hídrico, Guayaramerín, Puerto Quijarro, frontera boliviana.

#### Introduction

This article aims to develop the notion of border waterscapes based on two case studies, Puerto Quijarro and Guayaramerín, on the border of Bolivia with Brazil. It is based on fieldwork conducted in 2018 in Puerto Quijarro and Guayaramerín, whose design and interpretation were proposed with this approach to explore and update its interpretative possibilities. It is expected to contribute to the comprehension of water boundaries, a topic on which there are recent and relevant studies for the Bolivian case (Arraya Pareja, 2022; Benedetti, 2021; De Marchi-Moyano & Arraya-Pareja, 2021; De Marchi Moyano et al., 2019; Da Silva, 2013; Silva & Ribeiro, 2021). In order to dialogue with these works, an analytical perspective is proposed from the perspective of borderscape and society-nature relations in environments characterized by the presence of water (waterscapes).

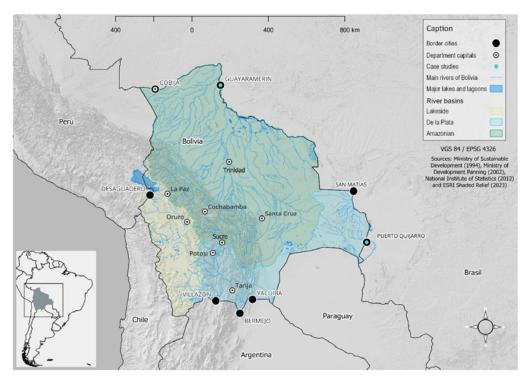
The proposal is related to research on borderscapes, which generally focus on human mobility and are applied to more spectacularized borders: that of the United States-Mexico (Peña, 2022) or that of the European Schengen area (Brambilla et al., 2017; Brambilla & Jones, 2020). Nevertheless, they have been less explored in a key dimension: their association with nature, where landscape "is conceived as a system of symbols and meanings, in which the social and the cultural enter into interaction on a material, biophysical and natural basis" (Ruiz de Oña Plaza, 2021, p. 179). Therefore, borderscapes also seem relevant to interpret more "boring" borders (Aparna & Kramsch, 2021), where the international boundary, demarcated by watercourses, implies particular, unequal, daily and shared encounters and misencounters.

The Bolivian-Brazilian border is the second longest in South America; more than 65% of its extension is associated with transboundary watercourses or bodies of water (Gimenez, 2015; Silva & Ribeiro, 2021). It is an international border crossed by tributaries of the main South American basins: the Río de la Plata and Amazon (see Figure 1). Its transboundary management has a regional institutional framework that involves almost all the subcontinental countries.<sup>1</sup> These agreements facilitate negotiating conflicts and managing international freshwater courses inherent to border regions (Rocha Loures & Rieu-Clarke, 2013). Bolivia participates in all agreements affecting the two basins and has several specific bilateral arrangements (Orellana Halkyer, 2013). The international basin irrigates 95% of Bolivia's surface area (Newton, 2013). Thus, it is a



<sup>&</sup>lt;sup>1</sup> There are "the Intergovernmental Coordinating Committee of the La Plata Basin Countries (1968), the La Plata Basin Treaty (1969), the Amazon Cooperation Treaty (1978) and the Amazon Cooperation Treaty Organization (1998)" (Silva & Ribeiro, 2021, p. 81).

country that has experienced various often asymmetric and troubled negotiations and disputes with its neighbors over watercourses.<sup>2</sup>





Source: created by the author

Despite this, Bolivian geographical thought reflected little on these humid frontiers.<sup>3</sup> In contrast, there are several works on the notion of the East—associated with the conquest fronts and exuberant nature—which has been widely studied in the country (Guiteras Mombiola, 2021; García Jordán, 2000, 2001; Perrier Bruslé, 2005; Roca, 2001; Sandoval Arenas et al., 2003). The Bolivian territorial history of the twentieth century is marked by the transformation of the East, by the Acre (1903) and Chaco wars (1934-1937); trade, extraction and export of products to the industrial market (quinine, rubber and hydrocarbons and soybean, among others); the development of major road projects (the Cochabamba-Santa Cruz highways and the two eastern train



<sup>&</sup>lt;sup>2</sup> In this context, its defensive official narrative can be understood, for example, when it is argued that "the Bolivian State is obliged to lead discussions on hydropolitics" (De la Fuente, 2015, p. 17).

<sup>&</sup>lt;sup>3</sup> Perrier Bruslé, a specialist in the Bolivian-Brazilian border, affirms that Bolivian geographical thought:

<sup>(...)</sup> never mentioned the natural borders. This silence is striking and, at the same time, heralds its relevance. (...). Even the imposing Itenez/Guaporé, which very early on became the boundary between the Portuguese Bandeirantes and the Jesuit missions, is not recognized with this prestigious status. (Perrier Bruslé, 2005, p. 149)

lines, mainly); or by the demographic transformation of its settlements from internal migration (Barragán R., 2009; De Marchi Moyano et al., 2020; Just Quiles, 2022; Peña Hasbún, 2022). The idea of the East, homogeneous and hot, dispersed, and distant from the Andean center of power, is precisely due to its unknown status, which diminished as the appropriation and the narrative about the "lowlands" (Villar & Combès, 2012) became more present in the national debate.

With this background, the text develops four sections. The first presents the theoretical and methodological details of these border waterscapes. Next, the cases of Puerto Quijarro and Guayaramerín are characterized physically, institutionally and demographically, with the support of maps, diagrams, and key demographic data. The third section explores the notion of waterscape in a multiscale approach: 1) in its historical and distant dimension applied to both cases; 2) through visual and urban elements of greater proximity in Puerto Quijarro; and, 3) with testimonial and experiential records from dialogues and visits in Guayaramerín. Finally, an assessment of the border waterscapes observed is presented.

## Theoretical and methodological aspects

In 2018, it was proposed to investigate the waterscapes of the Bolivian borders<sup>4</sup>. For that purpose, some cities on its international boundaries (see Figure 1) with official border crossings and associated with bodies of water were identified (De Marchi Moyano et al., 2019). In the search, three urban settlements were identified on the border of Bolivia with Brazil: Cobija and Guayaramerín in the Amazon basin and Puerto Quijarro in the Río de la Plata basin. The study discarded the work on Cobija because many Bolivian studies on its commercial and sociocultural dynamics already existed (Carlo Durán et al., 2013; Tassi et al., 2013) and because of the unimportance of the watercourse in the contemporary river transport of that region.<sup>5</sup> In the other two cases, a two-stage fieldwork design was applied. The first reviewed each settlement's historical, geographic and population background. The second involved field visits, conducted between October and December 2018, where semi-structured interviews were conducted with officials associated with state border control in Bolivia (migration, customs, and law enforcement) and cross-border transport services, in addition to recording observations, photographs and informal conversations in field cards. The limit of the work is that its empirical base concentrated on Bolivia and did not delve more deeply into the Brazilian side of the border (although it is frequently mentioned), which contributes to discussing a certain nationalistic view of the analyzed space (Benedetti, 2018).



<sup>&</sup>lt;sup>4</sup> This study was conducted at the Vice-Presidency's Social Research Center and with consultant Huascar Morales.

<sup>&</sup>lt;sup>5</sup> The Acre River, during the rubber boom period, was a waterway plied by large steamers (De Marchi Moyano et al., 2020; Roca, 2001); nevertheless, today it lacks significant navigation.

Considering this empirical and analytical limit, a multiscale approach to the borderscape was constructed with the sources consulted and applied selectively for each case, according to its interpretative relevance. Initially, a broad historical and geographical approach is used, where the landscape is a "space in which nature is transformed into history and in which humanity, its values, and actions become nature" (Besse, 2018, p. 34). Subsequently, first a discursive and then an intersubjective approach are used, where the landscape is a delimited system "of signs and symbols so that it not only reflects culture but is part of its constitution and is an expression of an ideology" (Muñoz-Pedreros, 2017, p. 171); these are "ways of representing historical synthesis [through] narration, description and metaphor" (Silvestri, 2002, p. 77).

With these elements, three types of water and borderscapes are proposed based on different spatiotemporal scales. Here, the scale is not conceived as a fixed magnitude or proportion but as a relation from which the place under study is interpreted (Muñetón Santa, 2016; Valenzuela, 2021) and as a way of distinguishing the "reconstruction of [its] specific characteristics" (Valenzuela, 2021, p. 72).<sup>6</sup> Thus, a first distant scale is assumed, narrated from a historiographic approach, and applied in both cases. A second is urban and local, applied in Puerto Quijarro, where the analysis prioritizes reading urban morphology and images as bearers of relevant meanings. Finally, a third scale, intersubjective and experiential, is taken for Guayaramerín from testimony and narration as borderscape interpretations. The three approaches maintain an understanding of water bodies as "a structuring element that determines not only landscapes but also social practices" (Muñoz-Pedreros, 2017, p. 171). These waterscapes explain "the dialectical relation between capitalist development and the production of unequal socio-natures" (Karpouzoglou & Vij, 2017, p. 4) on Bolivia's border with Brazil.

The metaphorical and narrative aspects by which landscapes are recognized are composed of territorial characteristics usually considered material and, therefore, innocuous; natural or—more precisely—naturalized. For this study, instead, it is assumed that border waterscapes, on the one hand, imply a "spatial translation of long-term socio-ecological processes related to water[, 1]ike palimpsests, that is, objects marked by the inscription in the past of socio-spatial dynamics" (Flaminio et al., 2022, p. 49); and, on the other hand, "make it possible to understand borders in a more complex way [... since] they can be represented through narratives about struggles, choreographies of space, everyday life and survival tactics or aesthetics" (Peña, 2021, p. 785). These criteria are applied in places whose morphology, institutionality and population characteristics are described below.

## Characteristics of the borders analyzed

The diplomatic definition of Bolivia's boundary with Brazil was initially established in 1867 by the Treaty of Ayacucho, also known as "Muñoz-López Netto" (Auad Sotomayor,



<sup>&</sup>lt;sup>6</sup> In studies and interventions focused on hydrography, scale is usually associated with basins and their technical subdivision. In this case, it can be started from another perspective, which tries to problematize the relation between a country's border places (Bolivia) and watercourses; hence, a more historical and social perspective of scale is taken.

War (Auad Sotomayor, 2013; Contreras, 2022).

2013), more than four decades after Bolivian independence in 1825. Several colonial antecedents remained as a backdrop for border demarcation: the conventions of Tordesillas (1494), Madrid (1750) and San Idelfonso (1777). In addition to demarcation, the 1867 treaty and subsequent agreements sought to facilitate Bolivian mobility toward the Atlantic, often by river and rail (Auad Sotomayor, 2020). The location of the two case studies is partly associated with their relation to the railroads built under the 1903 Treaty of Petrópolis, which was signed after the so-called Acre

As agreed in 1903, a railway was to cross the Mamoré River with a bridge and enter Bolivian territory to facilitate the exit of the rubber extracted in the Amazon toward the Atlantic, overcoming the challenge posed by the *cachuelas* to navigation (De Marchi-Moyano & Arraya-Pareja, 2021). Nevertheless, the Bolivian section was never built, and after the Chaco war in 1938, the Petrópolis treaty was revised and adjusted. Bolivian diplomacy succeeded in changing the route of the train project from the north of the Amazonian—affected by the decline of the rubber economy—to the southeast of the country—closer to the booming hydrocarbon exploitation areas—. Thus, after more than 15 years of design and construction, the railway line was built in 1954, from East to west over the Chiquitano forest and the Pantanal, to connect Corumbá-Puerto Suárez with the city of Santa Cruz (Contreras, 2022; De Marchi Moyano et al., 2020). Indeed, searching for a stable and regular connection with Bolivian main cities and the rest of the country was key.

Figure 2 shows the distance between border population centers and the nearest capital cities. In the first case, Puerto Quijarro is the farthest Bolivian border crossing from a lowland departmental capital (De Marchi Moyano, 2023), but it also has the best rail and road transport links conditions, facilitating significant accessibility. In addition to this advantage, there is a significant proximity between Puerto Quijarro and Puerto Suárez, almost 10 km, which shows a tendency toward conurbation (similar to what happens between Corumbá and Ladário on the Brazilian side). Guayaramerín also has a stable asphalt road connection with Riberalta, the most populated city in the northern Bolivian Amazon. Figure 2 shows that the combined population weight of Riberalta and Guayaramerín exceeds the total inhabitants of Pando and contains a quarter of the department of Beni. This axis, from the border to the nearest departmental capital (Cobija), only has good transit conditions between these two main settlements, which explains its coordinated and co-dependent functioning. Gravel roads communicate with the other population centers but are on the banks of the main navigable rivers, given their historical fluvial orientation (De Marchi Moyano et al., 2018).<sup>7</sup>



<sup>&</sup>lt;sup>7</sup> Although Trinidad is the capital of Beni, the department to which Guayaramerín corresponds, the distance to this town is not taken as a reference because it is farther away than Cobija and because of the regional transboundary connection that characterizes the northern Bolivian Amazon (De Marchi Moyano, 2023).

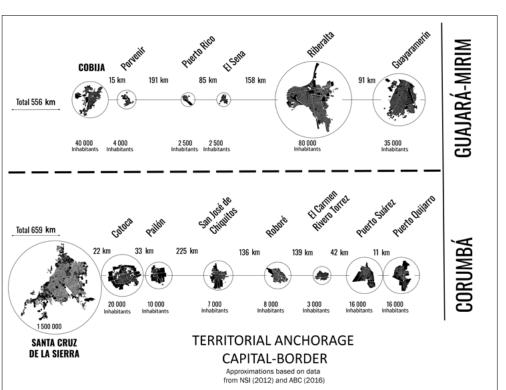


Figure 2. Relation between departmental capitals and study frontiers

Source: created by Huascar Morales for this document

The case studies have few common elements—outside of being border areas—and the differences become more evident when delving deeper into the data. For example, Puerto Quijarro's officially recorded export and import figures are relevant and have much more advantageous possibilities than Guayaramerín's (Instituto Boliviano de Comercio Exterior [IBCE], 2019). Despite the distance that separates it from the city of Santa Cruz, Puerto Quijarro is the main urban border crossing for the export of gas and soybeans, central products for the Bolivian economy when the fieldwork for this study was conducted. The relevance of the outflow of products through customs controls is related to the demographic dynamics and urban morphology of the settlements, but also to the change in the biophysical environment. These particularities are reviewed below.

## Population characteristics of the cases

Some demographic characteristics at the municipal level are taken for each case and with a key neighboring municipality. Puerto Suárez is used for Puerto Quijarro, and Riberalta for Guayaramerín (see Table 1). The population of Puerto Quijarro is one of the most urban in Bolivia. Everyone in the municipality lives in its town center, and the situation is similar in Puerto Suárez, with figures above the national average



(approximately 70 out of every 100 Bolivian inhabitants are urban). Puerto Quijarro has one of the highest positive migration rates in the country: practically half of the municipality's population was born elsewhere, a figure that is higher than that observed in Puerto Suárez.

Municipalities	Municipal urban rate 2012	Number of urban inhabitants 2001	Number of urban inhabitants 2012	Annual urban intercensal growth rate 2001-2012	Percentage of population born in another place	Net internal migra- tion rate	Number of people by main activi- ty-fishing	Number of agricultural production units-fishing	Ecosystem
Puerto Quijarro	98.28	12 537	16 373	2.43	47.66	9.8	0	12	Pantanal
Puerto Suárez	84.06	11 594	16 643	3.29	26.31	1.1	1	157	
Guayaramerín	85.61	33 095	35 764	0.7	35.45	-2.8	102	1 218	Amazonía
Riberalta	88.48	64 511	78 754	1.81	23.59	-10.9	5	1 475	

Table 1. Socio-demographic characteristics of key municipalities

The second case presents contrasting socio-demographic characteristics. Table 1 shows that despite its proximity, Guayaramerín's population grew considerably slower than Riberalta's (see Figure 1). The annual intercensal growth rate and the net internal migration rate indicate that Guayaramerín (and Riberalta) experienced a net population loss. One explanation for these figures is that the population moves seasonally to the rural area due to the timing of the Brazil nut harvest (the zafra). Some reports suggest that, at the time of taking the last reference census (2012), the inhabitants of these towns were retreating into the forest in this extractive activity (Vos et al., 2018). Likewise, the expelling character of the border settlement can be associated with another relevant economic and urban phenomenon: the low commercial interest in this place, reflected in the formal closure of the Guayaramerín Free Trade Zone in 2010.<sup>8</sup> Even so, the proportion of people living on this Amazonian border who were not born in the region is also high.

## Environmental characteristics of the case studies

Puerto Quijarro is in the Pantanal, a subtropical monsoon region characterized by its high ecosystemic richness and uniqueness. Bolivia has declared two national protected areas linked to its conservation and a Ramsar site.<sup>9</sup> Regarding the second case, the ecoregion where Guayaramerín is located has tropical characteristics with high humidity,

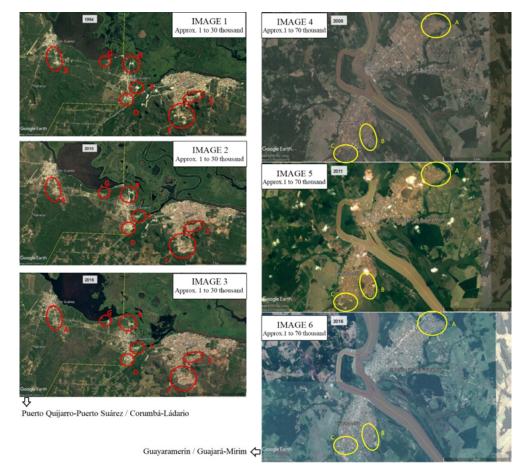


Source: created by the author based on the National Institute of Statistics (http://fichacomunidad.ine.gob.bo/)

<sup>&</sup>lt;sup>8</sup> According to Biministerial Resolution No. 034, dated October 18, 2010, of the Ministry of Economy and Public Finance of the Plurinational State of Bolivia.

<sup>&</sup>lt;sup>9</sup> Otuquis National Park and Integrated Management Natural Area and San Matías Integrated Management Natural Area, south and north of Puerto Quijarro. The Bolivian Pantanal Ramsar site coincides with similar efforts in Brazil and Paraguay, which have sought to coordinate conservation of the wetland, considered the largest in the world (see https://www.ramsar.org/fr/node/48235).

dense evergreen forest, and the Beni Cerrado. Although several kilometers to the north there is a departmental protected area that protects this type of ecosystem,<sup>10</sup> there are no biodiversity protection measures adjacent to the border crossing.



#### Figure 3. Expansion of urban areas over time

Source: created by Huascar Morales for this document, based on Google Earth

The images on the left in Figure 3 show the expansion of border agglomerations on both sides of the border. Bolivian cities are growing more in both cases than Brazilian cities in built-up areas. Between 1984 and 1990, this phenomenon gained momentum in Puerto Suárez and then moved to Puerto Quijarro, where a greater expansion is evident, mainly at points B and C corresponding to the soybean wharves and at point D, where the land border crossing is located on a bridge that joins both countries at Arroyo Concepción. In Guayaramerín, urban expansion starts on the banks of the Mamoré River and continues perpendicular to its course (point C). The ports on the riverbank are the central points with the highest density of activities. There are also biophysical limitations that would seem to hinder urban growth, the airport (point B), and the body of water running from southwest to northeast.



<sup>&</sup>lt;sup>10</sup> Bruno Racua Wildlife Reserve, in the department of Pando.

The information for both cases shows border areas with particular connections to the country's interior and to the Brazilian side, with contrasting economic practices, demographic characteristics, and particular relations with the border bodies of water. While the urban centers of the marshlands in the Puerto Quijarro-Puerto Suarez area are growing in population, in the Amazon region between Riberalta and Guayaramerín there is apparent population stagnation. It should be added that national and international transport connections in the Pantanal are better, both by land and river, while in the Amazon, the border—at the time of the fieldwork—there were not any paved connection or a bridge to facilitate connections between Bolivia and Brazil over the Mamoré. The following section proposes some landscape interpretations for these contexts.

## Border waterscapes in Puerto Quijarro and Guayaramerín

The cases contrast in their contemporary dynamics, but how are these characteristics linked to their history? How is temporal thickness expressed in their territory from the urban experience of their inhabitants? The landscapes proposed from three different scales explore these questions.

## Historic landscapes of isolation and walls

The idea of isolation associated with the border precedes the demarcation of the Bolivian border with Brazil. Its roots are in the conceptions of the "colonial conquest front", explored by Perrier Bruslé (2007). Inaccessibility has been associated with the entire East, even though in the 18th century there were open routes around Santa Cruz and to the network of settlements, especially those established by the Jesuit missions of Chiquitanía and Moxos (Orsag Molina, 2021; Roca, 2001). Likewise, it was sought to establish communication routes from the Cochabamba and La Paz valleys, linked to coca cultivation toward the Amazon region, given its prompt colonial commercialization (Spedding Paller, 2021). These advances pursued common objectives: to discover treasures (some mythical such as El Dorado or El Patití), to defend the Spanish empire from the Portuguese, to subordinate jungle groups as labor, and to exploit tropical resources (Van den Berg, 2008). Despite this, according to Van den Berg, the Spanish colony preferred to avoid opening official routes and prioritized the role of a defensive wall given to the Amazon. Its impenetrability deterred illicit trade and the advance of the *Bandeirantes*, who arrived from Portugal.

The figure of the Amazon rainforest as a protective wall survived during the first decades of Bolivian independence until certain natural resources were discovered and required by the industrial market. First, chains of quinine extraction and commercialization were developed through northern La Paz and Alto Beni; then came the exploitation of rubber, mainly in the National Territory of Colonies, established in the second half of the 19th century (Álvarez et al., 2002; Gamarra Téllez, 2018). The exploration and exploitation of the Amazon was initially fluvial. Among the business interests, local and global, a relevant aspect of the landscape was that produced by

the *cachuelas*. These are geological structures, shared with Brazil, formed by rocky outcrops present in the sub-basins of the Madera River that impede navigation in the dry season (De Marchi-Moyano & Arraya-Pareja, 2021; López Beltrán, 2001). As the map fragments in Figure 4 and Figure 5 show, by the beginning of the 20th century, Brazilian cartography identified them with perpendicular lines along the course of the Mamoré River. Guayaramerín is precisely in one of them.

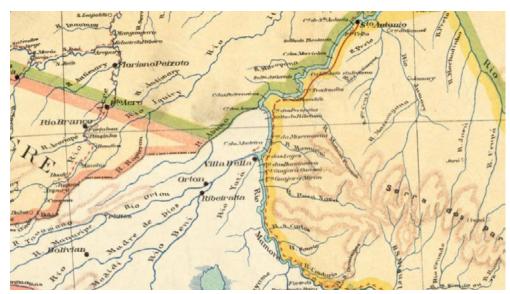
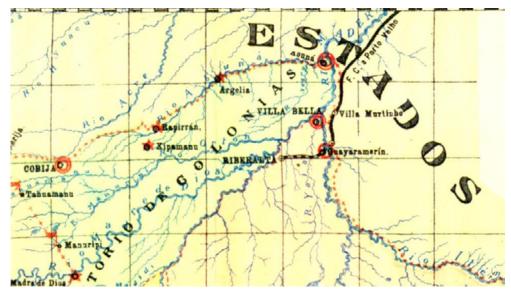


Figure 4. Fragment of early 20th-century cartography of Bolivia around Guayaramerín

Source: Mappa Geral do Brasil (Hartmann-Reichenbach, 1911)

Figure 5. Fragment of Brazilian cartography



Source: Customs map of Bolivia (Aguirre Achá, 1913)

For this reason, the negotiations that took place after the end of the Acre conflict with Brazil in 1903 focused on consolidating the installation of a railroad to overcome these difficulties (Auad Sotomayor, 2013). The Amazonian rivers were axes of displacement in the area, marking the installation of settlements. Nevertheless, they also constituted severe obstacles, contributing to the idea of isolation from the Andean political center of the country and the world's commercial centers (De Marchi Moyano et al., 2018). Although the rubber trade also relied on the opening of paths and roads between the rivers of the area (López Beltrán, 2001; Orsag Molina, 2021), the difficulties of that circulation were equally determined by the hydric characteristics of the region and the complexity of facilitating drainage on the roads. Land transit was (and is) a challenge. Even so, as Orsag Molina (2012) shows, the rubber trade initiated at the beginning of the 20th century reached the Pantanal region. The customs office that reported the second-highest movement of rubber-related cargoes was located there: Puerto Suárez.

Indeed, the foundation of this port on the Cáceres lagoon dates back to 1874 (De Marchi Moyano et al., 2019), taking advantage of the Jesuit roads between San Ignacio and San José de Chiquitos. The map fragments in Figure 6 and Figure 7 enable the observation of its land connection from the Cáceres Lagoon toward the country's interior.

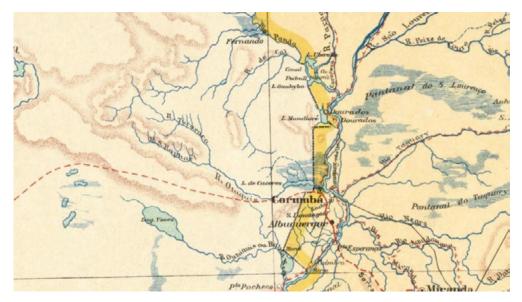


Figure 6. Fragment of 20th-century Bolivian cartography around Puerto Suarez (and Puerto Quijarro)

Source: Mappa Geral do Brasil (Hartmann-Reichenbach, 1911)



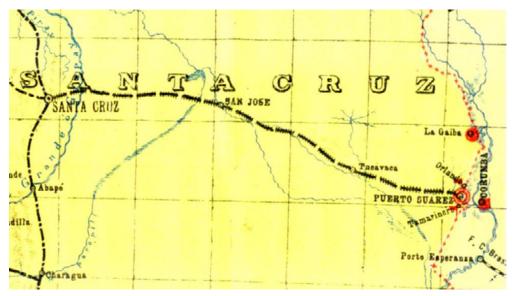


Figure 7. Fragment of early 20th-century Brazilian cartography around Puerto Suarez (and Puerto Quijarro)

Source: Customs map of Bolivia (Aguirre Achá, 1913)

Puerto Suárez, as a fluvial artery from the Cáceres Lagoon, was founded less than a decade after the signing of the Treaty of Ayacucho in 1867. Even then, it was connected to a passable road, which enabled the idea of isolation for the Bolivian marshlands to be relativized. This port was an entry point for importing products from Buenos Aires to Santa Cruz and then to the north's rubber-producing areas. The historical relation between navigation and border waters seems less problematic than that established in the Amazon. It can be argued that Santa Cruz Creoles, entrepreneurs, and traders knew about it and circulated frequently, although the Andean political elites had little comprehension of eastern geography (Aguirre Lavayén, 2000; Roca, 2001). This Andean ignorance seems to have been sustained, for example, in the 1940s when, according to Roca:

(...) the Cáceres lagoon was left without water due to the damming of the Tuyuyú canal on the Brazilian side to benefit cattle ranchers of that nationality. It was an illegal and arrogant act carried out by citizens of the neighboring country, and no energetic and decisive steps have been taken on the part of Bolivia to repair this attack. (Roca, 2001, p. 51)

The author's denunciation of the lack of a Bolivian claim against the Brazilians underlines precisely the ignorance of the central government, mainly Andean, about the business requirements of Santa Cruz and its interests in commercial navigation. Thus, the landscape of eastern isolation is combined with a regionalist and activist process, which has already been studied by other authors (Castro Bozo, 2013; Peña Hasbún, 2022; Peña et al., 2003; Sandoval Arenas et al., 2003). Against this background, the founding of Puerto Quijarro is related both to the inauguration of the railroads in 1955 (De Marchi Moyano et al., 2019) and to the need to find new navigable access points toward the Paraná-Paraguay waterway, this time on the Tamengo canal. Bolivia has a direct outlet at Puerto Bush on the Paraguay River further south. Its use depends on the maintenance of a difficult road due to the flooding characteristics of the area. In this regard, Bazoberry records floods that would have covered the road for almost two decades, between 1970 and 1990, "rendering access to the Puerto Busch pontoon useless" (Bazoberry Q., 2004, p. 66).

It is possible to argue that in both cases, border waterscapes were composed more of regional isolation than of connection with the rest of the country. This representation is shared in both places, but the challenges for navigation of the Amazonian rivers around Guayaramerín persist in the area and limit its accessibility toward the Bolivian interior. In contrast, the possibilities of connection and navigability around Puerto Quijarro determine its growth (beyond Puerto Suárez) from the mid-twentieth century to the present. These water-related aspects, on a broad spatio-temporal scale, explain the demographic growth of Puerto Quijarro and the production of an urban waterscape discussed below.

## Landscape in the Puerto Quijarro mural

When visiting Puerto Quijarro in 2018, it was impossible to tour the Bolivian side of the Tamengo canal. Its right bank, adjacent to the urban area, was protected and controlled. Private and military gates were the devices that registered and prevented any activity of entry and exit of people, cargo, and vehicles toward the ports and over the canal. Unlike governmental control, which is highly fragmented and usually shows signs of little coordination,<sup>11</sup> military and, above all, private corporate naval control seemed more efficient in regulating, making decisions about, and navigating the Tamengo canal. No local boat traffic was observed through this body of water. During the fieldwork, only three boats were recorded that did not belong to the port companies or the Bolivian Navy's naval force, but these were abandoned and not seaworthy. This absence of domestic and local river mobility, confirmed by the port captaincy command and other naval officials, coincides with the low amount of fishing recorded in the last agricultural census in the area.<sup>12</sup>

Figure 8 shows that the canal's waterfront accessible to the local population does not exceed 200 meters. Of the 11 kilometers of the canal bank, 8.3 kilometers are owned by private companies, which control hundreds of square meters between the

<sup>&</sup>lt;sup>11</sup> "Entrepreneurs have no country" stated in October 2018 the person in charge of the Bolivian International Ship Registry, the only official of the naval military unit. One of the aspects highlighted is the lack of coordination between different state dependencies to provide security and control to private ports (migration, customs and police registry, mainly) in the Tamengo canal.

<sup>&</sup>lt;sup>12</sup> In the 2013 census, the National Institute of Statistics recorded the number of agricultural production units related to fish farming. In Puerto Suárez, there are 157 agricultural production units at the municipal level that conduct fishing activities, which contrasts sharply with 12 agricultural production units in Puerto Quijarro (see Table 1).

population center and the ports on the canal's banks. In this space, they guarantee the safety of the personnel of each site, the integrity of the equipment, and the infrastructure of the ports. Informational conversations with some workers at the Aguirre port plant suggest that control is not strict, but there is a single entry point; it is difficult to circumvent the mesh fence that protects the premises. They indicated that "no one would enter through the canal; no one gets through there". Indeed, the export dynamics related to various entrepreneurs, institutions and international capital are exclusive (and excluding). They express a significant dominion over this border water zone.



Figure 8. Waterfront controlled by category of actors present in the Tamengo canal

Source: created by Huascar Morales for this document, based on Google Earth

The private companies and military zones that control the Tamengo canal, the waterfront and the banks of the main body of water impose the direction of urban growth following a pattern in Puerto Quijarro during the railroad boom. Thus, two centralities are confirmed, the first determined by the railroad and its station, around which blocks have been built where some stores and the main square are located, and the second centrality to the south, following the railroad tracks, where the rails and the road intersect; this last road goes to the neuralgic point of commerce of the city: the border crossing over the Concepción stream.

In the first central location, on the front of the Puerto Quijarro railroad station, a striking mural was observed to analyze the urban-scale landscape around water. It

should be remembered that although the town was founded in 1940, the municipality was founded in 1991; the 2000s and later were the most important decade for urban expansion and the densification of economic activities for Bolivia and Puerto Quijarro, so almost 50% of the population is composed of immigrants. Within this context, this mural of approximately 60 meters in length stood out as an attempt to construct local memory (see Figure 9), but under the leadership of the business ethos that dominates the Tamengo canal and its navigation. Its composition summoned elements that can be grouped into four categories: 1) transportation and industry; 2) natural environment; 3 indigenous population; and, 4) historical characters.

In transportation and industry, the mural elements showed three different moments. A wagon, "progress" gears, and an old locomotive were on the far left. In the center were container barges, a deep-draft vessel (maritime perhaps), silos and warehouses, an airplane and a more modern railroad locomotive with a long line of freight cars. A passenger bus, a heavy-duty truck and a railbus car appeared on the far right. The three parts seemed to chronologically illustrate the arrival of modern modes of transportation to the study site: the railroad (the first to connect the area), then ships and airplanes,<sup>13</sup> and most recently, buses and heavy trucks, with the completion of the asphalting of the bioceanic highway in 2013.

Another category featured was the archetypal image of the natural landscape of eastern Bolivia, dispersed throughout the mural. The dominant colors were green and blue in the vegetal and aquatic environment of the Bolivian lowland border. The central-right part of the mural highlights the water environment with plants, birds and a sunset, similar to that commonly observed in places such as the Cáceres lagoon in Puerto Suárez or observed in the port of Corumbá on the Brazilian side, but little present in the urban environment and in the daily experience of the inhabitants of Puerto Quijarro, where the Tamengo canal can hardly be seen. Further to the right, the mural pullulated with eastern Bolivian animal species, even incorporating more Amazonian species such as monkeys and forest *parabas*. Perhaps the most prominent absence was that of the *capybaras*, an emblematic species of the Río de la Plata basin, but absent in the painting.

A third category referred to the indigenous population interwoven with the natural environment in the mural, which was mentioned in the previous paragraph. The portraits of indigenous people were predominantly female. The figure of one of these women carried the catch of the day over her shoulder with the help of a rod. This image was the only reference in the entire mural to a direct utilization of the body of water by the local inhabitants, and nevertheless, the portrait was vague and almost generic. It was a woman with indigenous phenotypical features in a body of water that could be anywhere in eastern Bolivia.

The last category consisted of prominent figures. The busts of three male figures stood out to the left-center of the mural, right in the middle of the first two transport moments. Their position among the transports evoked their relation to achievements in regional transport links. The first character was Lieutenant Colonel Germán Bush, the Bolivian president credited with initiating the railroad construction in 1938-1939.



<sup>&</sup>lt;sup>13</sup> It is worth mentioning that in 2018 regular commercial flights to the region had been suspended.

The second figure appeared to be the former Bolivian minister Antonio Quijarro, responsible for border negotiations with Brazil and whose surname gives the settlement its name. The third figure could not be recognized. All the people interviewed were consulted about him during the fieldwork, and no response was obtained. Due to the institution credited in the mural, Shopping China operating in the free zone authorized in Puerto Aguirre, he could be linked to that enterprise. Possibly, he is Joaquín Aguirre Lavayén, founder of the first commercial port in the area and Bolivian diplomat and writer (Aguirre Lavayén, 2000). The Aguirre port plant, founded in 1988, built the country's first commercial-free trade zone in 1991, a precursor to the contemporary commercial growth of Puerto Quijarro. Thus, it is a business representation of the Pantanal, whose body of water is hidden behind the port and road infrastructure for exports.

Figure 9. Photographs of the mural on the front of the train station in Puerto Quijarro



Source: photographs by Huascar Morales, 2018

To summarize, the composition of the mural emphasized the regional and, to a certain extent, nationalist entrepreneurial role, a determining factor in the construction of the settlement's landscape and in the way in which the urban fabric, marked by transportation, was developed. The memory of private enterprises, mainly from Santa Cruz, marked the region and shaped the landscape, strengthening the importance of their achievements to coordinate with exports and the canal. Nevertheless, although elements referred to the Pantanal, the water, and its use, these were alien to the everyday urban life observed in Puerto Quijarro. The inhabitants, who had only recently settled in the city because of their commercial and employment opportunities, experienced an indirect relation with the marshy aquatic environment. At the same time, they were much more intensely linked to cargo movement and the border's daily commerce.

That lack of relation to the border water, as an absent scene of urban experiences, was in contrast to what was observed in Guayaramerín. Although commerce was similar in both settlements, the centrality of the watercourse in the Amazonian urban environment is undeniable (De Marchi-Moyano & Arraya-Pareja, 2021). The following landscape analysis further investigates these aspects.

## Landscape from the river island

A Bolivian businessman settled for more than 30 years in the Brazilian city of Guajará-Mirim and interviewed on the ground commented on his indignation at the blockade and the closure suffered by the port on the other side, that is, on the Bolivian side of the Mamoré River. Indeed, on December 6, 2018, there was broad compliance with a civic strike<sup>14</sup> in Guayaramerín and its major port. Of the four main entities at that Bolivian border crossing—Migration, Police, Navy and Customs—that day, only the last two maintained their services. On the other hand, the Migration and Police facilities, located in the same building as the port station, did not serve the public. The entrance to the building was sealed with a Bolivian flag on the steps, as shown in Figure 10. This action was a sign of compliance with the measure by the Bolivian transport services on the river, essential vessels for the border operation.

Several relevant aspects of this blockade highlight the particular landscape logic of this Amazonian water border. One that stands out is that the blockade's effectiveness could be attributed to the summoning of regional civic actors and the strong and organized local support linked to national demand. That support, rooted in the border territory, was coordinated and organized through unions and associations of merchants and transporters, whose social makeup is similar to that found in the rest of the country (De Marchi Moyano et al., 2020; Tassi & Canedo, 2018). On the Bolivian borders, this type of organization dominates the mobility (legal and illegal [Rabossi,



<sup>&</sup>lt;sup>14</sup> Regarding the reasons for this social mobilization, the press release "El paro cívico reaviva la polarización en Bolivia", December 6, 2018, of the newspaper *La Razón* can be reviewed, as well as the journalism around that date throughout the country.

2019]) of goods and people, including on the border river. Whether to other Amazonian cities and, in some cases, to the country's interior, these associative actors largely define what moves where.



Figure 10. Guayaramerín port terminal and unloading port on blockade day

Source: photographs by the author, 2018

Unions and associations are actors that differ from each other, complement each other, or compete for the modes of transport and types of waterways they control. For example, the vessels observed in 2018 plying the Mamoré, from the port on the Bolivian side to the Brazilian side, were part of the Nicolás Suárez River Carriers Association, created in 1990. This organization, formalized in its service and recognized by the different State border control authorities, was dedicated to facilitating the passage of passengers between the two countries from Bolivia. Its service was different from that offered by other organizations, also river-based, but which sailed in small boats (*peque-peques*<sup>15</sup>) and docked at the cargo port between the port terminal and the Naval District of Guayaramerín (see Figure 10). These transporters coordinated their work with other interprovincial operators of land transport, motorcycles, trucks, and other modes of transport, generally dedicated to cargo transport. This relation helps explain the domestic logistics of the circulation of low-value goods (with little or no customs control) from Brazil toward the interior of the Amazon and—mainly—to the city of Riberalta, Guayaramerín's neighbor.

In addition to the disembarkation around the official port, it was learned in the field that there were other points where boats docked along the Mamoré, through which local organizations carried out less formalized movements of products and people. This movement was a concern for Bolivian customs control at the border, which did not have enough resources to control it. The testimonies of different actors interviewed in the field suggest that most of the families living in the area in 2018 were directly or indirectly linked to smuggling and considered it an inevitable and almost necessary



<sup>&</sup>lt;sup>15</sup> These are wooden boats with a capacity of five people and are usually used with an outboard motor. The unloading of products was observed; they are generally piloted by the helmsman and, in some cases, a passenger who assists in docking and unloading the cargo.

form of income generation, something similar to what happens in most border settlements in South America (Dorfman, 2020). In an interview conducted with Bolivian customs personnel, the complexity of the fuel trade was highlighted as one of the most frequent.<sup>16</sup> This trade was a central economic activity for the population of Guayamerín. Thus, throughout the city, there were advertisements for *bimbos*, that is, disposable plastic beverage bottles, which were reused to transport and sell gasoline on both sides of the border. On street corners there were also stalls selling fuel in these plastic bottles for the motorcycles that served as the main mode of transportation in the city. Both the *bimbo* gasoline vendors and the motorcycle taxi drivers were again organized in associations or unions.

The relation between these local organizations and commercial networks of Andean origin is not simple and requires further ethnographic research. The trade, which was observed in the market and mainly in the stores on Román Avenue in Guayaramerín, was fed by supply chains associated with products (often Asian) imported through the Pacific ports in Chile and which crossed the mountain range to reach the Brazilian border. Nevertheless, their dynamics and territorial control did not seem effective enough to cross the river: "They did not manage to pass to the other side," as the local publication would say. The mighty and rugged Mamoré River and its navigation are a border that requires knowledge and expertise to cross. These skills, developed with time and experience, would not necessarily be shared with the Andean traders who arrived a few years ago. At the same time, the river and its banks were shown to be an essential part of urban life, with a promenade and playground on the Bolivian banks used by the border population.

The businessman whose testimony is quoted at the beginning of the subtitle, despite having a family of *colla* origin,<sup>17</sup> was born in the area and had extensive experience on the river. He managed a shipyard that provided mechanical services to various Bolivian vessels, including naval vessels. He was also the owner of one of the six Brazilian companies that provided passenger boats on the Mamoré from Brazil to Bolivia and was also the leader of the association that coordinated this service. The Brazilian boats that carried passengers, like those of the interviewee's company, complied with the regulations established by that country's navigation standards. On board the Brazilian transport, students did not pay for the trip; the seats, windows and decks were reinforced, and the helmsman wore the company's uniform. The Bolivian syndicate providing services at the same border crossing clearly distinguished itself by complying with much less stringent regulations.



<sup>&</sup>lt;sup>16</sup> Since the late 1960s, Guayaramerín has enabled the official distribution of hydrocarbons in the northern Bolivian Amazon. The transportation of fuels by road or tank barges on the Ichilo-Mamoré waterway involves a significant subsidy from the Bolivian State. To understand the state logistics that guarantees the distribution of fuels in the area, see the note from Yacimientos Petrolíferos Fiscales Bolivianos (YPFB), published on November 14, 2018, entitled YPFB garantiza el abastecimiento de carburantes en el departamento del Beni (YPFB *guarantees fuel supply in the department of Beni*).

<sup>&</sup>lt;sup>17</sup> This refers to Andean people, as opposed to lowlanders, who are called *cambas* in Bolivia. The interviewee's family is originally from Cochabamba and has lived in the region for a generation.

The interviewee's link to the water border was not only associated with cross-border transportation. In 1985, he bought the right to use Suárez Island (or Guajará-Mirim, for Brazil), which is in the Mamoré between the banks of the two countries and has an area of more than four hectares (see Figure 11) next to the *cachuela*. According to his testimony, when he made this purchase, he planned to invest in developing tourism activities, but he soon learned that it was one of the few portions of land in dispute between Bolivia and Brazil. The case of this island has been studied as a reference for Delivic's dislocation provide a studied as a reference for

Bolivia's diplomatic relations in the area (Perrier-Bruslé, 2015). The Bolivian version of the possession of the island is based on the fact that the last recognized owner was Nicolás Suárez, the country's main rubber entrepreneur. Thus, a principle of *utis possidetis* would have been recognized by the Roboré treaty of 1955 (Mesopotamia Beniana, 2007, p. 43). Although the Brazilian version had its own arguments, the conflict was not active, and both diplomacies concentrated their efforts on more relevant issues. This place and its landscape are not a priority in any bilateral dispute.

#### Figure 11. Satellite image and photographs of the Bolivian shore from Suárez Island



Source: Google Earth and author's photograph, 2018

In the field, when the "owner of the island" was encountered through the recommendation of the naval personnel and other interviewees from Guayaramerín, everyone recognized him as such. According to his testimony, he would be the third to buy the right to use the island after Suárez. Nevertheless, given the international litigation, he preferred not to risk making major investments until 2018, so he used it for minor livestock activities. He even permitted Bolivian families to use part of the land for subsistence agriculture. The idea of helping "less fortunate" Bolivians was recurrent throughout the conversation. From the Brazilian side of the Mamoré, he recognized himself as a sort of "Bolivian consul" in Guajará-Mirim, always ready to collaborate with his fellow citizens. At the same time, he lamented how Bolivians and the country were seen from the Brazilian side of the border. They would go "to Guayaramerín to do what they do not do in their country," he stated. For him, Bolivia was a territory with less strict or often ignored regulations, where the authorities were not very effective. This borderscape confirmed the presence of the river, frequently crossed in the absence of a bridge, with a central island heir to an almost indifferent dispute and which, on the Bolivian side, offered many activities for enjoyment, fun and trade.



## Conclusions

The study identified certain narratives to synthesize key information about the cases in question: isolation, walls, murals and islands, for example, are spatial metaphors associated with the water borders researched as landscapes. They are representations composed from different scales, in specific interpretative relations established with them and that dialogue with each place to understand its link with water. The borders with Brazil, its historical isolation and its overcoming with modern modes of transportation were expressed in a mural in Puerto Quijarro, where the Tamengo canal was shown as an almost exclusively business opportunity for fluvial mobility. In the case of Guayaramerín, the wall of the Amazon jungle and the challenges of its water system have partially remained as obstacles, which is expressed in the prominence of its river, which is frequently crossed, despite the latent litigation over Suárez Island.

The cases presented and their comprehension in terms of landscape show how the relations with border water resources are specific and historical in each case. Puerto Quijarro was spatially and discursively better connected with the country's interior, based on the strategic business value of the Tamengo canal and its export capacity. Nevertheless, this effective coordination had an exclusive urban appropriation regarding using the border watercourse in daily urban life. The area's population did not resist its exclusive navigation, with little memory and appropriation of the marshy aquatic environment. The case of Guayaramerín, on the other hand, showed a watercourse strongly appropriated and monopolized by local actors, deeply anchored in the history of the place, but this did not produce a greater presence of this water border in the discourse or its connection with the rest of Bolivia. The Suárez Island dispute, indifferent to its diplomatic resolution, could be understood as a significant indicator of its lack of relevance for the contemporary relation with Brazil when fieldwork was conducted.

The analysis developed also enables the exploration of other clues related to the landscape. It is interesting to note that, to observe and enjoy a watercourse, the inhabitants of Puerto Quijarro traveled to the wharf of the Cáceres Lagoon in Puerto Suárez or crossed the border toward Corumbá. In contrast, the Bolivian port on the Mamoré permitted it to be enjoyed on a promenade with a specific urban layout and constant local navigation. Thus, Corumbá, Puerto Suárez and Guayaramerín would seem to be border cities that incorporated their water mirrors into the urban experience, while Puerto Quijarro and Guajará-Mirim grew with their backs to the shared water. This particularity would seem to justify a communication that, despite their differences, would imply certain shared territorial dynamics and more or less complementary urban amenities concerning the enjoyment of water.

Regarding sociocultural and economic aspects, both cases enabled the identification of a relation between social organizations and entrepreneurs, which form the complexity of the Bolivian border social fabric and its unequal relation with water and its navigation. Nevertheless, it would be a mistake to assume that these are actors in opposition: of a private versus a collective process or, even worse, of a capitalist versus an exclusively communitarian economy. Rather, they correspond to



modes of socioeconomic activities that are to some extent complementary, despite their tensions, conflicts and competition, with exclusions and selectivity in the use of border watercourses, with a heterogeneity of asymmetries between and within them. These forms of coordination reach the border and mark the particular Bolivian social conditions, especially those associated with transporting and circulating goods.

Finally, it should be noted that the category water and borderscape, applied with the proposed scales, made it possible to construct the analysis of the cases through their history, particular urban morphology and the spatial experience of their actors. Considering the particularity of the Bolivian borders and the country's strategic situation for transboundary waters, it is essential to expand these explorations. These are not exhaustive studies; research can probably be developed with more updated sources, emphasizing the relation between shared water resources and their economic dimension. Similarly, it is possible to suggest further ethnographic investigation of the relations between business, unionized, cross-border or Andean, regional and local actors. Thus, the idea of landscape can be incorporated into these new inquiries, emphasizing other narratives and descriptions in new contexts, which enable a better understanding of these borders.

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