

# Resistance in the Atlantic Forest

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# 1. Abstract

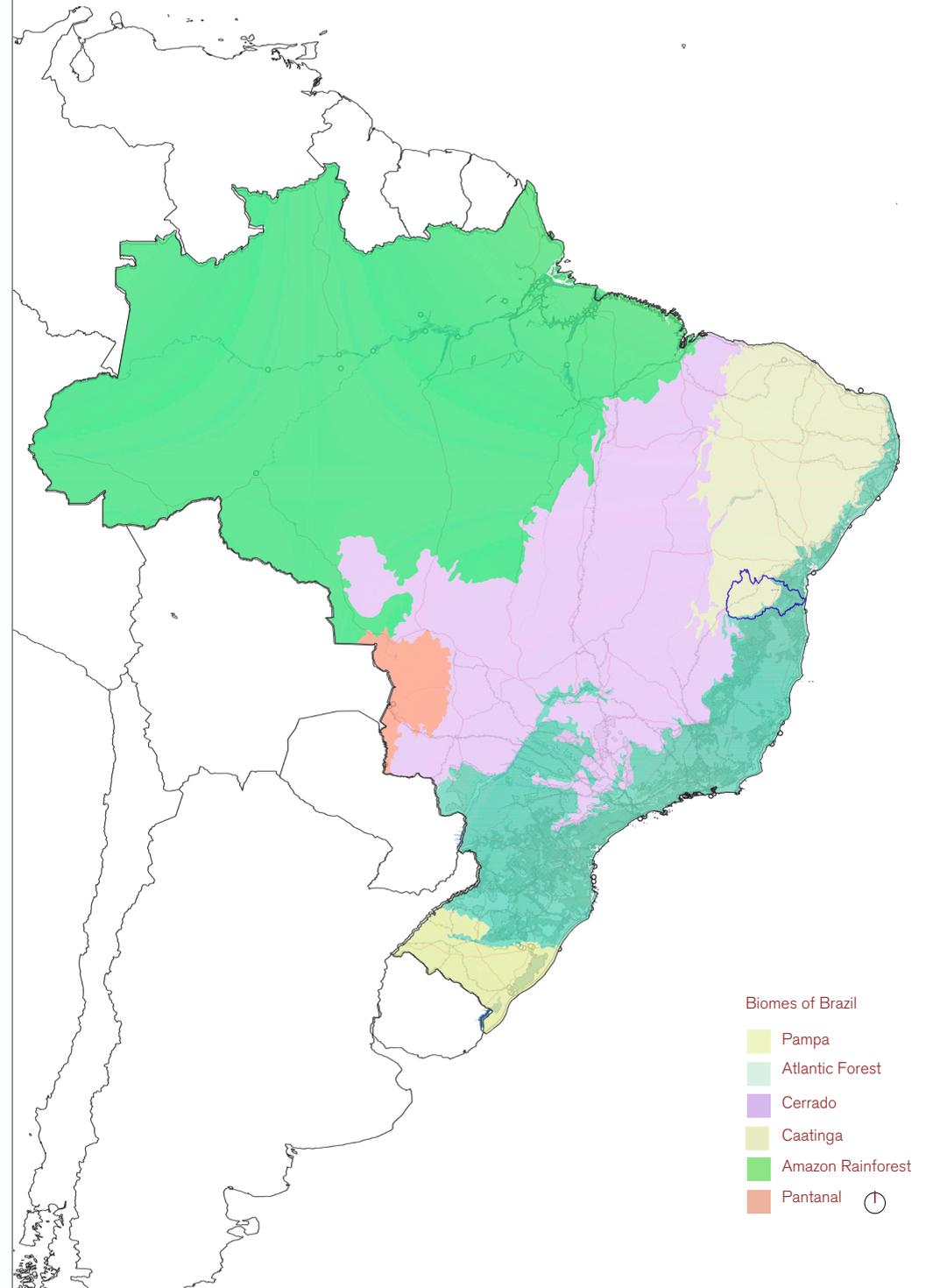
The Atlantic Forest (Mata Atlântica) is a unique and shrinking biome, with less than 20% of its original coverage remaining. It has played a pivotal role in Brazil's history, serving as the entry point for colonization and the centre of numerous economic cycles. This thesis explores the historical, environmental, and socio-economic transformations of Southern Bahia region near where the Portuguese first arrived in Brazil in 1500.

Deforestation and degradation due to extractive economies, agricultural expansion, urban development, and industrialization have diminished the forest, exacerbated climate change, and caused frequent environmental disasters. These activities have also led to the impoverishment and displacement of those with ancestral ties to the land. The core issues of land ownership and power concentration have fragmented communities and biomes, leading to severe socio-environmental consequences.

This thesis highlights the importance of revisiting the historical narrative of the Atlantic Forest landscape, by focusing on local communities' perspectives and knowledge. These communities possess valuable practices that enable subsistence while preserving the environment. Their inclusion in territorial planning is crucial for sustainable futures.

## Glossary

Quilombo	Quilombos are communities organized by fugitive slaves in colonial Brazil. Quilombos were located in inaccessible hidden areas.
Quilombola	People who are born and live in a Quilombo
Pau Brasil	Tree that has red pigment inside - first brazilian commodity
Aldeia indígena	Indigenous community settlement
Mata Atlântica	Brazilian biome of tropical forest
Settlements	Previously unproductive or uninhabited rural territories that peasants or landless workers live permanently practicing rural subsistence
Cosmocentric	A vision of reality that places the highest importance or emphasis in the universe or nature, as opposite to an anthropocentric vision, which strongly focuses on humankind as the most important element of existence.



# 1.1 Thesis Positioning

The Atlantic Forest (Mata Atlântica) is a unique and shrinking biome characterized by its high level of endemism and biodiversity. Currently, only 29% of its original natural coverage remains. This region has played a pivotal role in Brazil's history, serving as the entry point for colonization and the center for numerous economic cycles that have shaped the country's identity and landscape. The areas once rich in natural resources have now transformed into Brazil's most densely populated and urbanized regions, housing the nation's largest cities. The thesis seeks to explore one of these regions in depth, located closely to the site where first Portuguese colonizers arrived in Brazil, examining its historical, environmental, and socio-economic transformations.

This biome has been subjected historically to deforestation and environmental degradation due to extractive foreign economies, agricultural expansion, urban development, and industrialization. These activities have not only diminished the forest coverage but also exacerbated global warming and frequent environmental disasters. The socio-economic paradigm resulting from these changes has led to the impoverishment and displacement of native

populations within their own territory.

As we know, the disastrous effect of the current status quo of modern urbanization in Brazil, where natural features were completely ignored while massive roads and constructions were built rapidly, there is a need to envision different trajectories for the future. But before looking forward, understanding the landscape and territory of the Atlantic Forest from a local perspective is essential.

There is a critical need for an intentional revision of the historical narrative surrounding the Atlantic Forest. Traditional urban analysis often overlook the perspectives and experiences of local communities who have lived in and depended on this biome for centuries. These communities own precious knowledge not only about the biome and its diversity, but they have multiple interactive practices that enable their subsistence while preserving the environment. It is time for these practices to be in the center of territorial planning. The effort throughout this research is to amplify these local narratives and knowledges, understanding what could be a future endemic narrative for this specific landscape.



source: World Wildlife foundation, 2017

# 1.2 Problem Statement

## *Atlantic Forest: a history of colonization*

The relentless shrinkage of the Atlantic Forest poses a significant threat to global warming, exacerbating an already dire environmental situation. This biome is a critical repository of biodiversity, housing over 52% of its tree species and 92% of its amphibians, which are endemic and found nowhere else in the world. The historical pattern of colonization in this region has not only led to the decimation of its ecosystems but has also entrenched severe socio-economic inequalities and chronic racism in Brazil. The concentration of land ownership in the hands of a small elite has forced marginalized communities to struggle for subsistence and farming land, leading to rural exodus and the overpopulation of urban areas, thereby perpetuating cycles of poverty.

Moreover, individuals with ancestral ties to the land, who possess invaluable knowledge on sustainable and synergistic land use, often find themselves displaced to the peripheries of large cities. Here, they live in poor conditions and engage in informal employment, unable to apply their sustainable practices. The rapid and poorly planned urban expansion in Brazil, often

disconnected from the natural morphology of the terrain, results in frequent environmental disasters. The core issues of land ownership and power concentration have fragmented both communities and the biomes they inhabit, leading to severe socio-environmental consequences.

This thesis aims to explore these interconnected challenges, focusing on how historical land ownership patterns and socio-political power dynamics have contributed to environmental degradation, socio-economic disparities, and the disintegration of both human and natural communities in Brazil. It will investigate potential pathways towards more equitable and sustainable land use practices that honor the knowledge of indigenous and local populations, aiming to foster both environmental conservation and social justice.



Image: Giacomo Gastaldi -Brasil (1556)  
 source: [https://www.researchgate.net/figure/Giacomo-Gastaldi-Brasil-1556\\_fig1\\_272437898](https://www.researchgate.net/figure/Giacomo-Gastaldi-Brasil-1556_fig1_272437898)

extraction



territory



pau-brasil

XVI - XVII



sugar cane

XVII



gold

XVIII

coffee

XIX until  
beginning of  
XX



cocoa

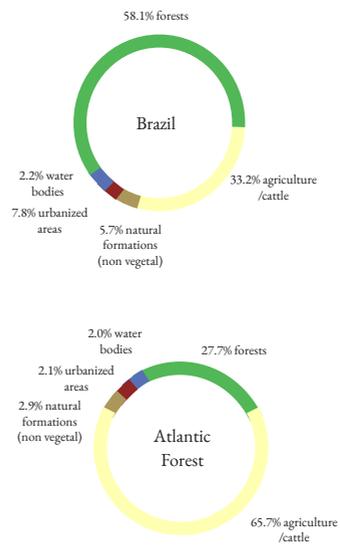
Carregamento de cacau e despacho no porto de Ilheus no início do século XX - Arquivo/Prefeitura de Ilheus



rubber

XIX until  
beginning of  
XX

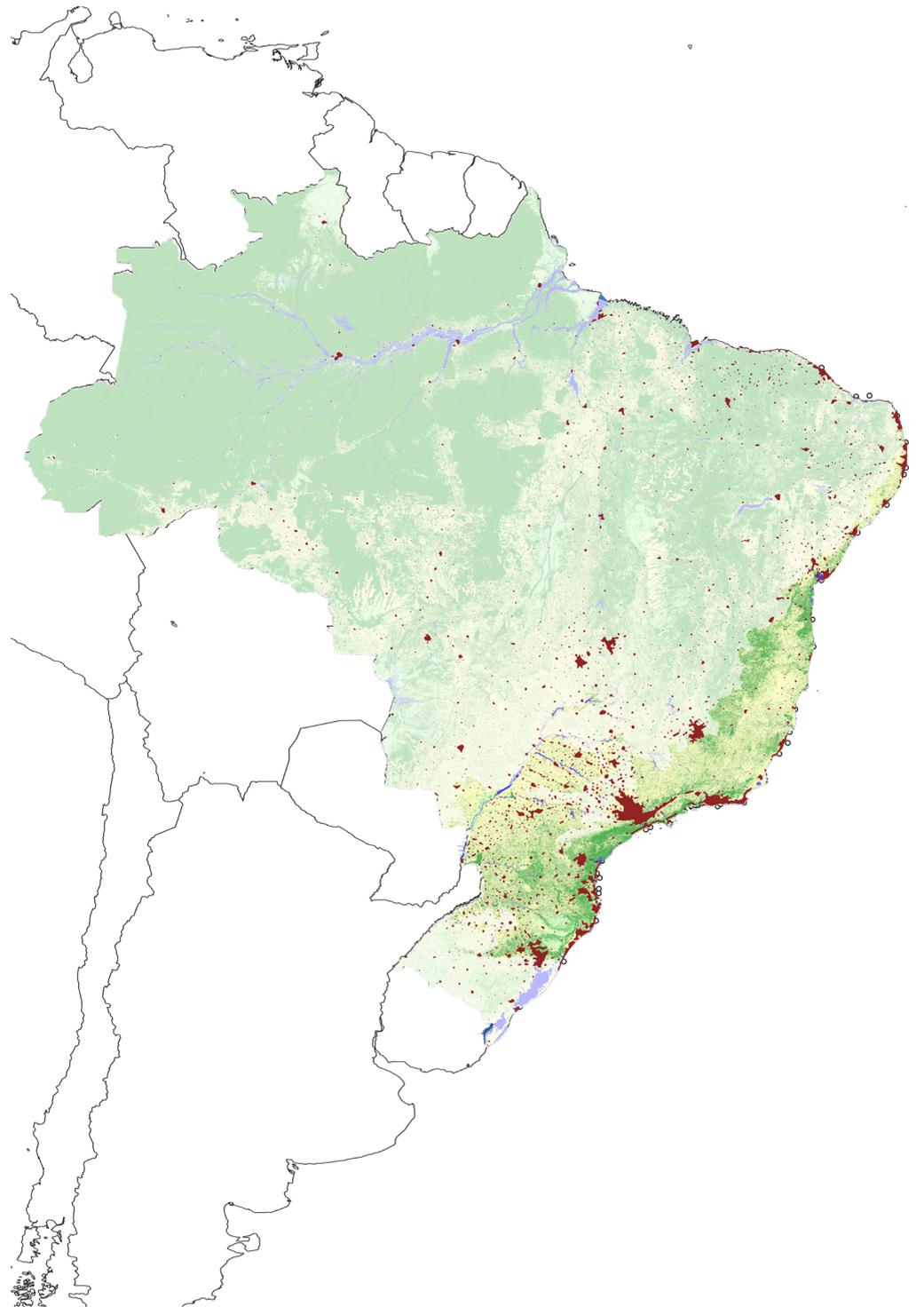




### Land Use - Atlantic Forest Biome Area

In this map we see how the biggest cities in Brazil are located in the Atlantic Forest strip, and how the Forest has been largely turned into agriculture (mainly monoculture farming)

- Forest - Preserved
- Natural (not forest)
- Agriculture
- Cattle farming
- Urbanized area





Alterations/ Interactions  
 Mata Atlântica - urbanized forest

In this map we can see how the farming and infrastructure took over the Atlantic forest. It is clear how this forest has always been the main starting point to the placement of all infrastructure that slowly spread inland.

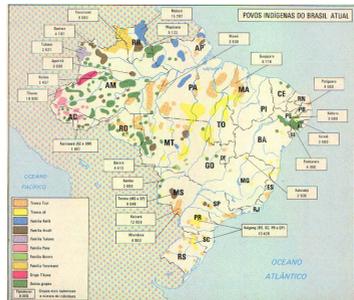
- Farming
- Threatened forest
- Preserved forest
- train line
- main roads
- infrastructure waterways
- port





Indigenous territories before 1500

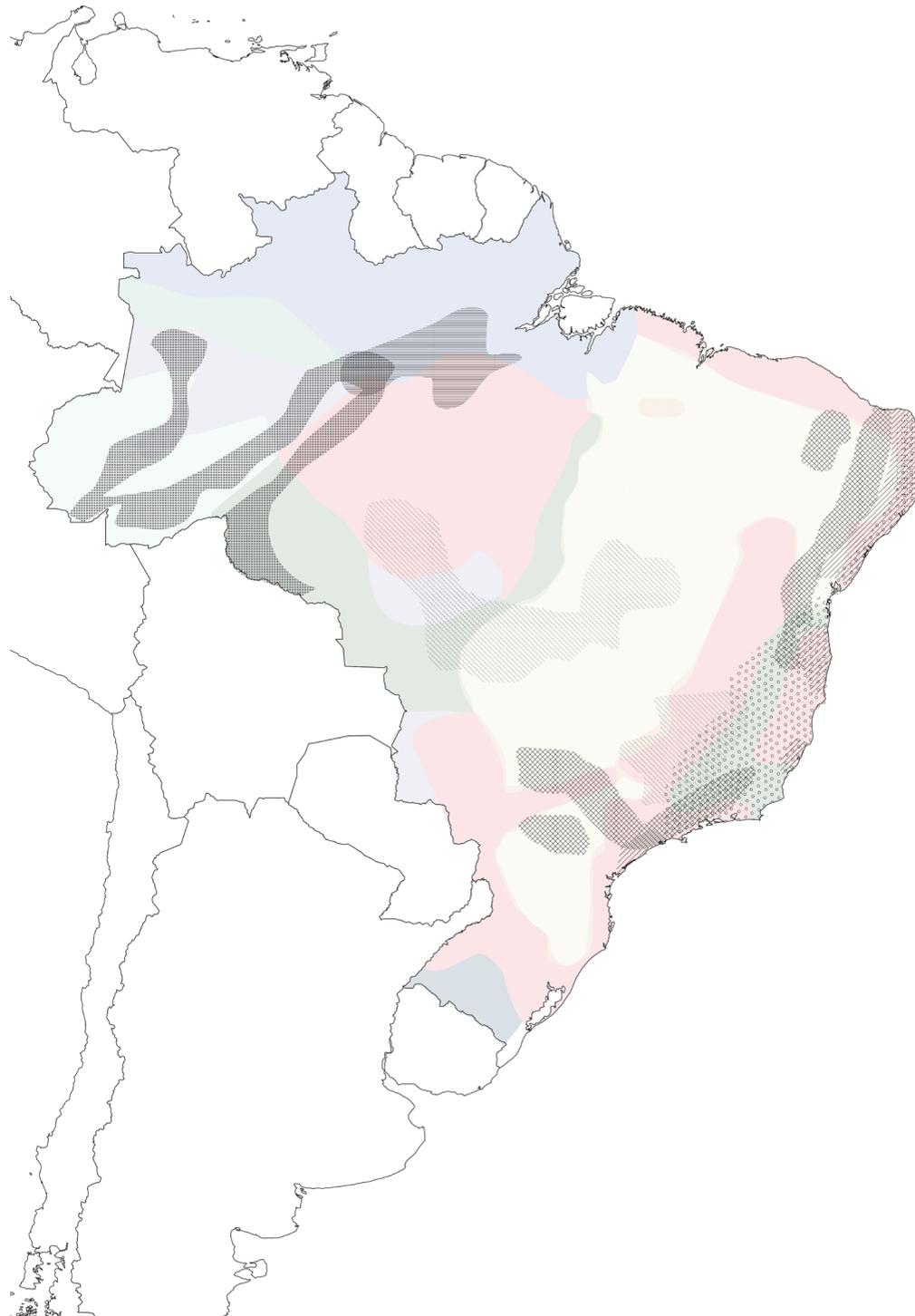
Source: <https://atresillando.wordpress.com/2015/03/21/los-indios-de-brasil/>



Indigenous territories 2000

### Palimpsest Economic cycles and indigenous tribes occupa- tion before 1500

In this map there is an overlay of the main economic cycles of Brazil (based on natural resources exploitation) with the occupation of the land before colonization. It brings out the question of how these interactions occurred and how distinct these occupations are regarding their impacts on the environment.



## 2. Landing

### 2.1 Historical context

*“The beginning of the European invasion brought into conflict two completely opposing worldviews: those who saw the land as an asset to be exploited, and those who perceived and felt it as part of themselves. The ensuing centuries were tragic.*

*The territorial division into hereditary captaincies by the Portuguese crown drew lines separating a previously integrated territory, as there were no boundaries before. From the premise of property and colonization, enslavement and the decimation of indigenous culture followed. The land began to be exploited extensively, and for more than four hundred years, almost all the wealth generated from it was sent abroad in a true colonialist plunder.” P.30*

Pelo fim das metrópoles : manifesto por um biorregionalismo brasileiro / Marta Leite Montagnana, Mathews Vichr Lopes, Jérôme Alexandre Sensier. -- 1. ed. -- Baependi, MG : Rizomar, 2023.

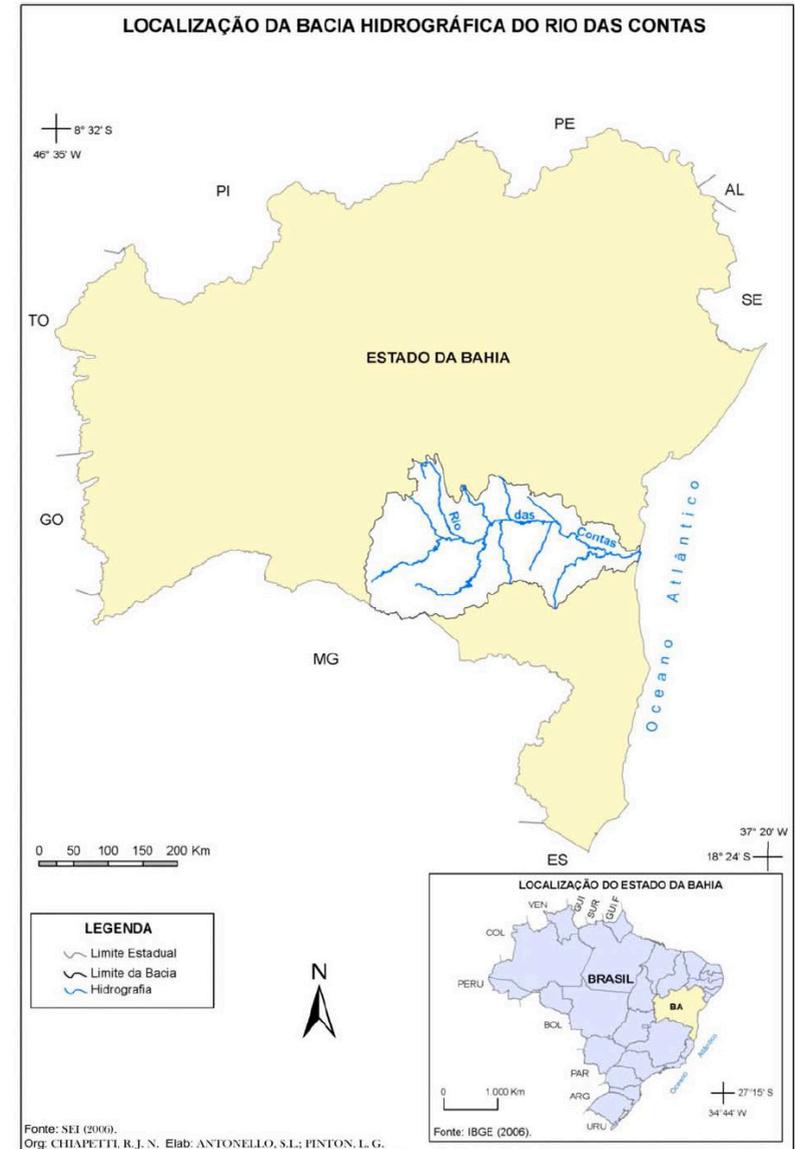
The site chosen for this research is in the northeast region of Brazil, inside the fourth largest Brazilian state called Bahia. The city chosen as a start point for the investigation is called Itacaré and has been one of the first locations where colonizers named and settled base. The city is located by the beach and the Atlantic Ocean and by the river mouth of Rio das Contas River. This strategic location between two main waterways made this site very relevant through all the economic cycles that shaped Brazilian history. In understanding this landscape, water access and rivers emerge as a guiding forces, unveiling the intricate pathways of people and commodities

across the territory.

It is a relevant site to analyze environmental transformations over the last 500 years and to investigate how the landscape has been shaped by human occupation of various forms. Itacaré’s history in many ways serves as a site-specific example of Brazil’s history.

The similarities range over topics such as the relations between different extractive and productive regimes and the landscape, the foundations of economic and political relations between different regions of Brazil, land ownership and its intricate relationship with political power, differences in social classes, the development of urban spaces and its impact over the natural environment.

In structuring this landscape biography, I opted to align the chapters with the chronological divisions found in Christian Palmer’s book “Piratas, Jesuítas, Quilombolas, Coronéis, Pescadores e Surfistas: Uma pequena história ambiental de Itacaré” (Palmer 2021). Through a detailed History Line, it is possible to understand the city’s formation as a dynamic interplay between periods of economic fast urban sprawl leading to exhaustion and moments of stagnation. Typical oscillation of a capitalist urbanization approach, always catering to external economic demands. It also becomes clear how the construction of infrastructure such as dams, roads and ports can completely change the social dynamic of a place and become crucial starting points of the modification of the landscape.



# Jesuits and Pau Brasil

The colonial process in Brazil unfolded in 1530, marked by the division of the land into 13 captaincies, each spanning 50 to 100 leagues from the coastline. Nobles were entrusted with investing, protecting, and developing these lands, aiming to distribute the costs of colonization and reward political supporters. While the Crown retained ownership, nobles were granted the right to utilize the land. In 1535, George Figueiredo Correia established the Captaincy of Ilhéus, impacting areas such as Itacaré. Within each captaincy, the Donatário, or designated owner, allocated sesmarias to loyal followers, fostering a concentrated land ownership pattern that persists today in Brazil's land use.

Itacaré's history intertwines with the African slave trade, European religious developments, conflicts between Catholicism and Enlightenment theologies, and was involving the Dutch, Spanish, and Portuguese. The town's connections to global events since colonization reflect its integration into a progressively interconnected world.

The Atlantic Forest, along Brazil's coast, endured extensive exploitation until the 1970s, providing up to 50% of the country's wood. It faced deforestation for sugar, coffee, cocoa, and cattle plantations, as well as logging for various industrial uses. Brazil's economic development from 1500 to 1970 heavily relied on extracting value from the Atlantic Forest's biodiversity, biomass, and soil fertility. The prevailing institutional framework encouraged rapid conversion of forests for immediate profits, leading to substantial alterations in 93% of the forest since 1500.



Map of the Capitánias Hereditárias land division scheme from 1574

The economic landscape during this period was characterized by an imperial and mercantile structure, shaped by personal and patriarchal power dynamics rather than capitalist principles.

source: <https://historiadoriparatodos.com.br/timeline/1534-capitanias-hereditarias/>

Indigenous existences transition from hunt and harvesting systems to agriculture

10000 bc

1000 bc

1500

1535

1563

1580

Indigenous existences remaining show that they were altering the forest through a social system of Hunt and Harvesting

They had demographic growth control because of their subsistence practices promoting a balanced relationship with the environment

Portuguese arrive in Brazil - Pau Brazil economic cycle



French Painting sec XVI  
source: <https://ensinarhistoria.com.br/exploracao-do-pau-brasil/>

During the division of land in Capitánias Hereditárias in colonial Brazil, a deep concentration of land ownership began, leading to long term informalities in land properties.

The Portuguese Crown sent 250 men to the Capitania of Ilhéus (70km from Itacaré). In each Capitania, the designated owner could sell or donate sesmarias, smaller land portions, to reduce maintenance and surveillance costs for Portugal. Sesmarias, initially vast tracts of land, marked the onset of the enduring Brazilian pattern of concentrated land ownership among a small elite.

Start of Iberic Union period where the Spanish Crown controls the Portuguese and the Dutch territories. The Dutch fought for their independence in the northeast of Brazil.

The Sesmaria owner near Itacaré (near Rio das Contas and Baía de Camamu) donates land to the Jesuits to educate local indigenous people.

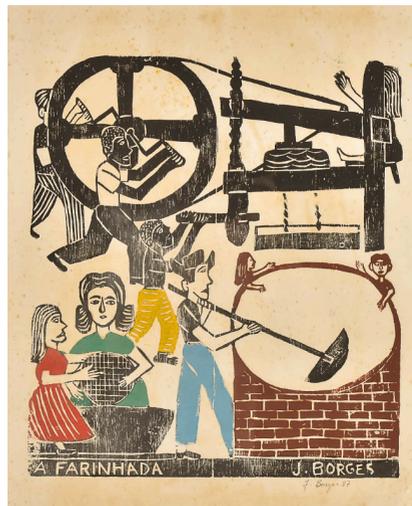
For instance, in Bahia, Jesuits founded 12 villages between 1550 and 1560, housing a combined population of 40,000 indigenous people. Epidemics of smallpox and measles from 1560 to 1563 resulted in significant casualties, leaving only three villages with 4,000 inhabitants by 1590.

# Sugar Cane and War

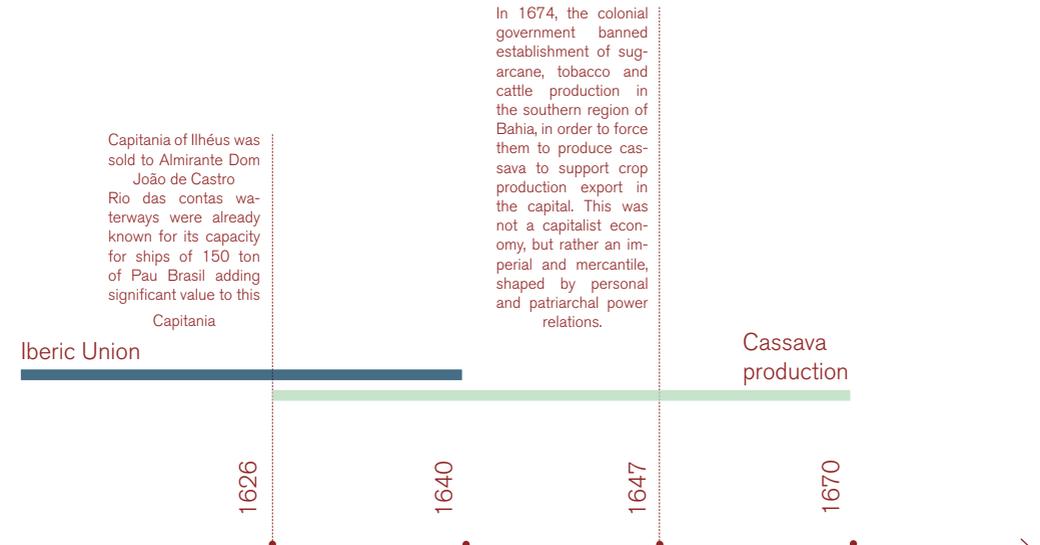
The cultivation of sugarcane originated in Southeast Asia and was introduced to the Western world through the Islamic realm during the Middle Ages. It found its way to the Americas from the Portuguese islands of Madeira and the Azores in the Atlantic, swiftly becoming the primary agricultural activity across Brazil and the Caribbean (Palmer, 2021). However, the sugarcane cycle faced challenges in certain regions due to natural conditions and indigenous resistance. In Ilhéus, despite the favorable natural conditions in the river valley, indigenous opposition led the Portuguese to concentrate sugarcane production in the Recôncavo, overcoming impediments and establishing it as a major export.

In the early decades of Portuguese colonization, Ilhéus witnessed the rapid establishment of several sugar mills, reaching eight by 1546. Yet, mismanagement, labor shortages, insufficient investments, and indigenous resistance caused a decline to four mills in the subsequent 85 years. In contrast, other regions experienced significant growth during the same period. The extensive deforestation for sugarcane cultivation, coupled with the demand for wood to process sugar, prompted early colonial attempts to limit deforestation. The limited sugarcane production in Ilhéus, while posing challenges, also spared the region from some of the negative consequences associated with sugarcane plantations, such as slavery expansion, environmental degradation, and the industrial revolutions in Europe.

During this period, Itacaré played a distinctive role in supporting the war effort against the Netherlands in Northeast Brazil. Rather than engaging in the sugarcane industry prevalent in other regions, Itacaré predominantly focused on cassava cultivation to feed the army. Amidst the conflict, under the governance of Diogo Luís de Oliveira (1627-1635), new laws were enacted compelling lower towns, including Itacaré, to supply flour for the troops stationed in Morro de São Paulo. These soldiers defended the area against the constant threat of Dutch attacks.



Cassava flour production - J. BORGES (Pernambuco, 1935). "A Farinhada", source: <https://www.centuryarteeloes.com.br/peca.asp?ID=80909>



The Iberian union ended in 1640 after the Portuguese Restoration War when the Portuguese army defeated Spain.

Until 1670 Itacaré is forced to produce Cassava flour for the troops fighting against the Dutch in Morro de São Paulo



Map of Salvador 1624, before the dutch invasion <https://www.bahia.ws/historia-da-bahia/>

# Gold and Diamonds

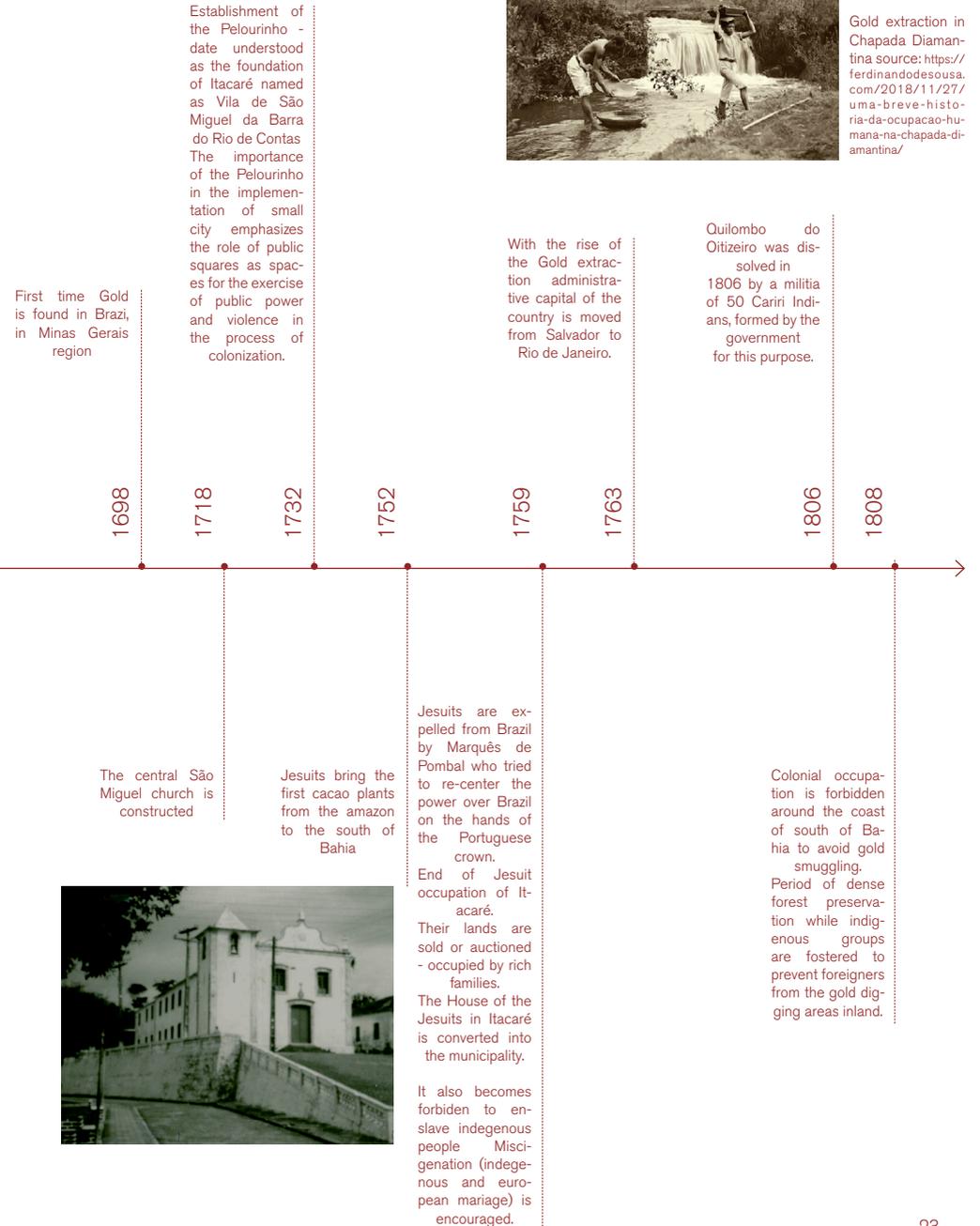
The discovery of gold in the interior of Minas Gerais in 1697 and diamonds in 1720 marked the onset of a gold rush, redirecting Portuguese colonial focus from the coast to the interior (Palmer, 2021). Throughout the 18th century, Brazil yielded over 3 million carats of gold and over 1 million carats of diamonds. From 1700 to 1770, more gold was extracted from Brazil than the rest of the Americas combined from 1492 to 1850 (Palmer, 2021). This massive boom, attracting over 450,000 Portuguese settlers, transformed the economic and political landscape. Portuguese supplanted Tupi as the primary language in southeastern Brazil, intensifying conflicts between new and old colonizers. In response to labor shortages in Portugal, a law was enacted in 1720 prohibiting migration to Brazil (Palmer, 2021).

This gold rush had profound effects on Brazil—agriculture and livestock expanded to sustain burgeoning mining populations, shifting economic and political power from the Northeast to the Southeast. It prompted the relocation of the capital from Salvador to Rio de Janeiro in 1763. The geology of Minas Gerais facilitated widespread gold deposits, resulting in an illicit market for gold smuggling with implications for Itacaré. Excluded from

sugar production and restrained from inland occupation during the mining era, Itacaré remained on the sidelines, yet its development was intricately connected to broader imperial and international policies, migrations, and administrations.



São Miguel Church Square by the water, next page, São Miguel Church. Source: <https://biblioteca.ibge.gov.br/index.php/biblioteca-catalogo?acervo=todos&campo=todos&notqry=&opeqry=&texto=itacar%C3%A9&digital=false&fraseexata=>



# Cacao

The enduring and transformative cycle that significantly shaped Itacaré's landscape was the cocoa cycle. While various crops like rice, beans, sugarcane, and coffee were attempted in the Rio de Contas Valley, it was cocoa that thrived and flourished in the fertile alluvial lands. This cycle, spanning from the late 19th century to the late 20th century, not only influenced the humanistic and infrastructural aspects but also molded the municipality itself. The Jesuit cycle left its mark in the form of the church, a lasting structure initiated in the late 17th century and completed in 1723 under Jesuit influence.

For decades, the Southern Bahia region, including Itacaré, thrived as a cocoa-producing hub. The area was initially densely forested, its trees lining the water's edge. However, extensive deforestation occurred over the centuries, driven by the demand for shipbuilding timber in Salvador, a major supplier for the Portuguese Navy. The conservation efforts around valuable hardwoods, though largely ineffective, highlighted the limited influence of the Crown in Brazilian economic activities.

The expulsion of the Jesuits paved the way for economic diversification, and Itacaré, initially modest in size, emerged as a crucial center for cocoa export in the late 19th century. The riverside town witnessed the construction of numerous colonial-style houses, reflecting the economic prosperity brought about by the cocoa cycle.

The thrival of cocoa economy attracted individ-

uals from all over Brazil who saw the possibility of becoming rich with the cocoa industry. These individuals, the Coronéis, illegally occupied land and fought indigenous people and traditional communities out of their lands. This period was marked by the extreme brutality of this process of rapid wealth accumulation.

Cacao production in Bahia State (year - tons)

1925	70.468
1935	120.162
1945	114.406
1955	144.584

Fonte: SANTOS (1957, p.102)

An estimated 5.9 million Africans were brought to Brazil as slaves, about 40% of all slaves brought to America. In 1819, about 1/3 of the settlers in Brazil were slaves, although this percentage decreased gradually over time as more Europeans immigrated to Brazil.



Port of Ilhéus, sec XX.  
Source: municipality of Ilhéus



Port of Itacaré, sec XX.  
Source: municipality of Ilhéus

Large ports are forbidden to commercialize slaves - Itacaré continues with the activity because its considered a small port.

Implementation of Lei Aurea - end of slavery

1819

1836

1850

1877

1888

Start of cacao cultivation in the south of Bahia

Big drought event brings a lot of agricultural workers from inland towards the cacao plantations close to the shore

Cacao Production



Urban growth of Itacaré, sec XX.  
Source: itacare.com.br/itacare/portal



# Fishermen

As shifting transportation networks isolated Itacaré, causing its port to silt up and prompting cocoa producers to relocate to growing inland cities. For those who remained, fishing became a vital economic alternative. Local fishermen emphasize Itacaré's convenience for their trade. Along the Brazilian Atlantic coast, the most productive fishing zones are the transition areas where the shallow continental shelf meets the deep blue ocean (Palmer, 2021). Given Itacaré's proximity to the relatively narrow continental shelf, around seven to eight kilometers from the coast, fishermen could go out fishing in the morning and return by afternoon. This geographical feature, attracting strong storms and waves, also attracted the first surfers.

Utilizing various ecological zones, including mangroves, rivers, tidal zones, mud banks, and coral reefs, fishermen navigated the rich marine landscape. Despite the ease of fishing and the area's productivity, generating income remained a challenge. Older fishermen recall the size and quantity of catches but ironically note that without buyers, they often ended up donating or exchanging their fishes within the town (Palmer, 2021). Patron-client relationships connected fishermen to larger markets, providing access to credit but in a subordinate, dependent position.

Established in 1965, the Z-18 Fishing Colony is Itacaré's oldest fishing organization, created

by the federal government to track and regulate artisanal fishing and serve as a potential pool for the Navy. With the decline of cocoa due to the Witch's Broom disease in the 1980s, many former cocoa plantation workers shifted to coastal areas, turning to fishing for survival. Scholars have documented the ethnoecology of Atlantic fishing communities, highlighting local fishermen's knowledge precision regarding fish reproduction and migration. This research highlights the effectiveness of local management practices and fishing techniques, based on oral transmitted knowledge fishermen in Itacaré know extremely well how to fish in the complex estuary area, the mangroves and in the ocean.



Urban growth of Itacaré, sec XX.  
Source: itacare.com.br/itacare/portal



Fisherman  
Source: waves.com

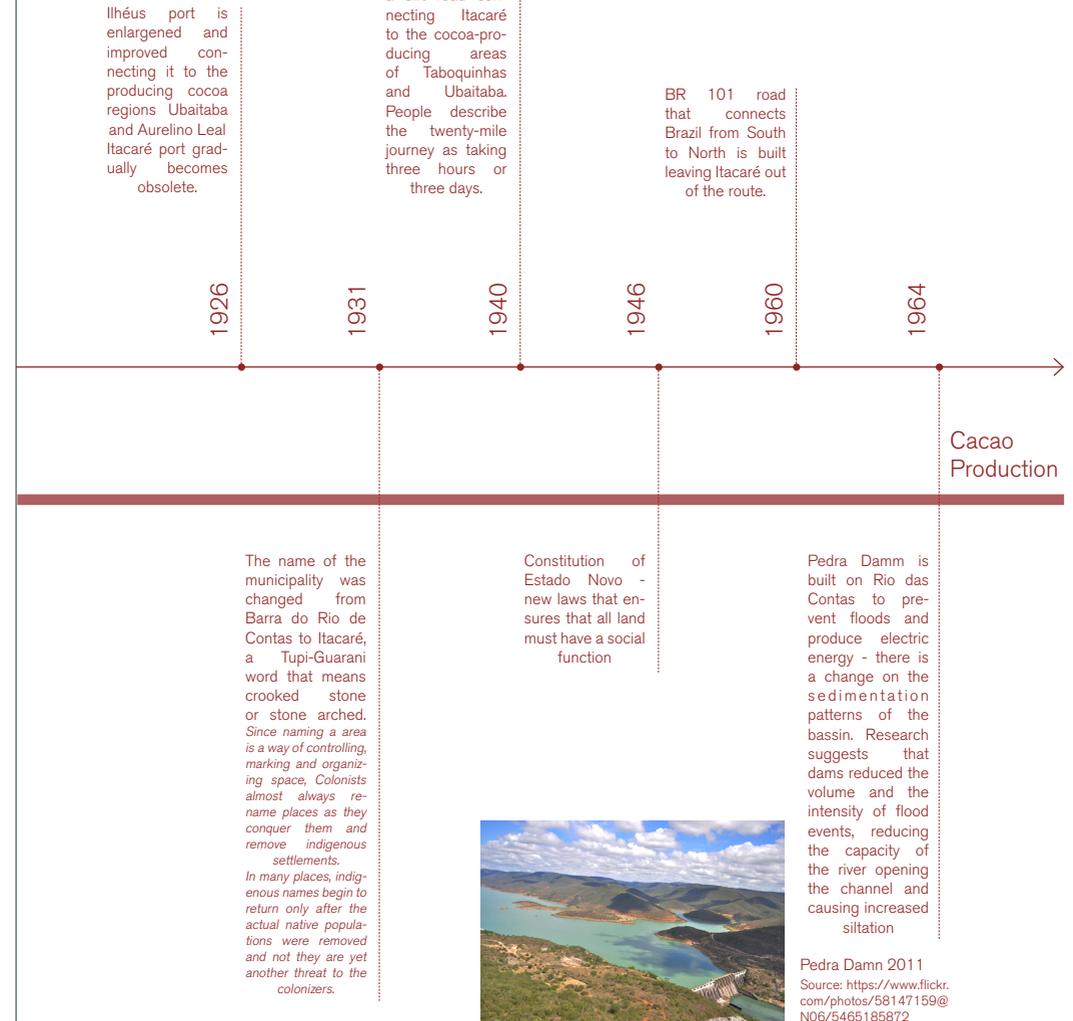
Ilhéus port is enlarged and improved connecting it to the producing cocoa regions Ubaítaba and Aurelino Leal Itacaré port gradually becomes obsolete.

In the 1940s, the trail leading out of the city was widened and gradually became a dirt road connecting Itacaré to the cocoa-producing areas of Taboquinhas and Ubaítaba. People describe the twenty-mile journey as taking three hours or three days.



Aerial view of Itacaré  
Source: <https://itacare.com.br/itacare/portal.php?content=galeria&lang=pt&galeria=antiga>

BR 101 road that connects Brazil from South to North is built leaving Itacaré out of the route.



# Surfers and Tourism

The arrival of surfers in Itacaré marked the beginning of a new trajectory towards a tourism-based economy. Surfers brought with them a cosmopolitan counterculture of social activism and environmental consciousness that influenced architectural styles, neighborhood development, and the establishment of protected areas in the municipality. Initially, local residents did not warmly receive surfers, whose alternative culture clashed with the conservative social norms of small-town life. The disapproval stemmed from the perceived association with drug use, hedonism, and the laid-back appearance of surfers (Palmer, 2021).

As surfing gained visibility for the town in regional and national media, contributing to the expansion of the local tourism industry, it gradually became an integral part of the local identity. Visiting surfers lent their boards to local children, fostering a connection that transcended cultural differences. In the early days, parents of the first local surfers often prohibited them from surfing due to the negative stereotypes associated with the sport. As a response, these resourceful youngsters hid their boards in the woods or a friend's house, engaging in the sport covertly.

The rise of surfing created economic opportunities through surf schools, repair shops, environmental NGOs, and surfing competitions. Recognized as an adventurous, youthful, and environmentally conscious sport, surfing positioned Itacaré nationally and internationally as an ecotourism destination. Surfers played a pivotal role in reshaping Itacaré's image, transforming

it from a mundane fishing village or prosperous port city into a paradise for wave enthusiasts, featuring warm waters, consistent surf, and tropical forests.

In the mid-1990s, PRODETUR (Action Program For Tourism Development In The Northeast) established Environmental Protection Areas (APAs) in Bahia's coastal regions to preserve scenic beauty for a new tourism-based economy. The first unit, APA Itacaré-Serra Grande (1993), aimed to protect a coastal strip but excluded ecologically valuable inland territories and local existences emphasizing coastal tourism over biodiversity and social development.

Legislation in 1993 banned logging in the Atlantic Forest, leading to forest reserve initiatives. By 1997 and 2003, key ecological areas were preserved with the Serra do Conduru State Park and APA expansion.

APAs served in a tourism development strategy to protect areas from degradation. APA creation transformed coastlines into public spaces, managed by councils comprising civil society, public sector, and local business representatives.

Despite lacking legal mandates, these councils, notably the APA Management Council, became model of a multidisciplinary group of various specialists and locals, fostering debate on the region's development, rejecting questionable projects, and shaping local opinion and policy.

Next page : Aerial view of Itacaré 1900

Source: <https://itacare.com.br/itacare/portal.php?content=galeria&lang=pt&galeria=antiga>

Aerial view of Itacaré Today  
Source: <https://norddestetur.com.br/itacare-o-paraiso-baiano/webp>

Funil Damm is built on Rio das Contas to prevent floods and produce electric energy.

Despite the violence, the region's economic growth depended on cocoa. However, in 1989, the **Witch's Broom fungus**, endemic to the Amazon, attacked cocoa plantations, causing a 75% drop in production and leading to the abandonment of many cocoa plantations in the region. Large landowners have switched to cattle ranching, logging and eucalyptus plantations, with around 80% of cabruca cocoa converted to other uses since the



Pictures by surfer Bruno Alves in the 70's 80's Itacaré  
Source: waves.com



Federal and state legislation prohibited all logging in the Atlantic Forest, requiring that 20% of private land be maintained in a forest reserve and work began to create a series of parks, corridors and protected areas to protect the remaining areas.



Revision of APA plan, shifting the focus on Tourism to a more inclusive environmental approach



New Brazilian constitution defines that land can be expropriated in order to have a social function



In the mid-1990s, PRODETUR established a series of Environmental Protection Areas (APAs) throughout the state of Bahia, all in coastal areas, to preserve the scenic beauty that would be the basis of a new tourist economy. This change valued the natural environment as an essential component for the production of a tourist landscape in the region.

The first conservation unit in the territory was the Itacaré-Serra Grande Environmental Protection Area (APA), which in 1993 protected a five-kilometer strip of land from the Rio de Contas along the coast. Ironically, the designation excluded some of the most ecologically valuable land in the area further inland, indicating that the APA was created to promote the development of coastal tourism and not just to conserve biodiversity.

Paving of BR 101 road connecting Itacaré to a larger transport network financed by PRODETUR - National Tourism Development Program. The Government invested 670 millions of reais in Northeast region of Brazil between 1996 and 1999. At least half of it was spent on roads and airports.

Cacao Production

320m bridge is built over Rio de Contas connecting Itacaré to Camamu. As Itacaré is no longer at the end of the road, tourists can now come to Itacaré for just a few nights while they head up or down the coast to other small coastal towns.

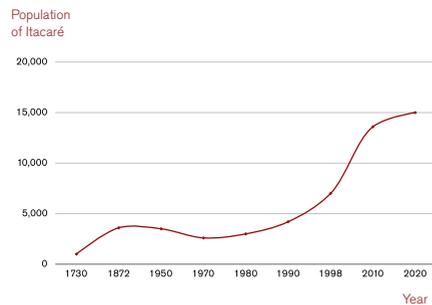
## 2.1 Itacaré today - Tourism Environmental Challenges

In the context of Itacaré, a small town heavily reliant on tourism, the urban growth is intricately linked to environmental challenges. The prevailing tourism paradigm treats space as a consumable “product,” leading to urban infrastructures primarily designed to serve tourists, often neglecting the pre-existing dynamics of the local community and environment. This approach results in a skewed prioritization, leaving minimal consideration for the town’s historical essence and the well-being of its residents.

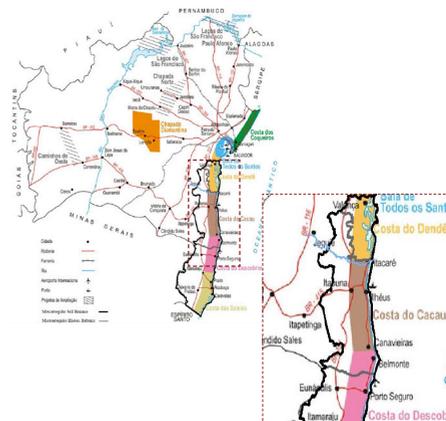
Cities dependent on tourism face heightened vulnerability to climate disasters, and Itacaré is no exception. The very economic foundation tied to tourism renders the town extra susceptible

to environmental crises. The relentless focus on catering to the needs and satisfaction of tourists amplifies the environmental strain and exacerbates the town’s vulnerability.

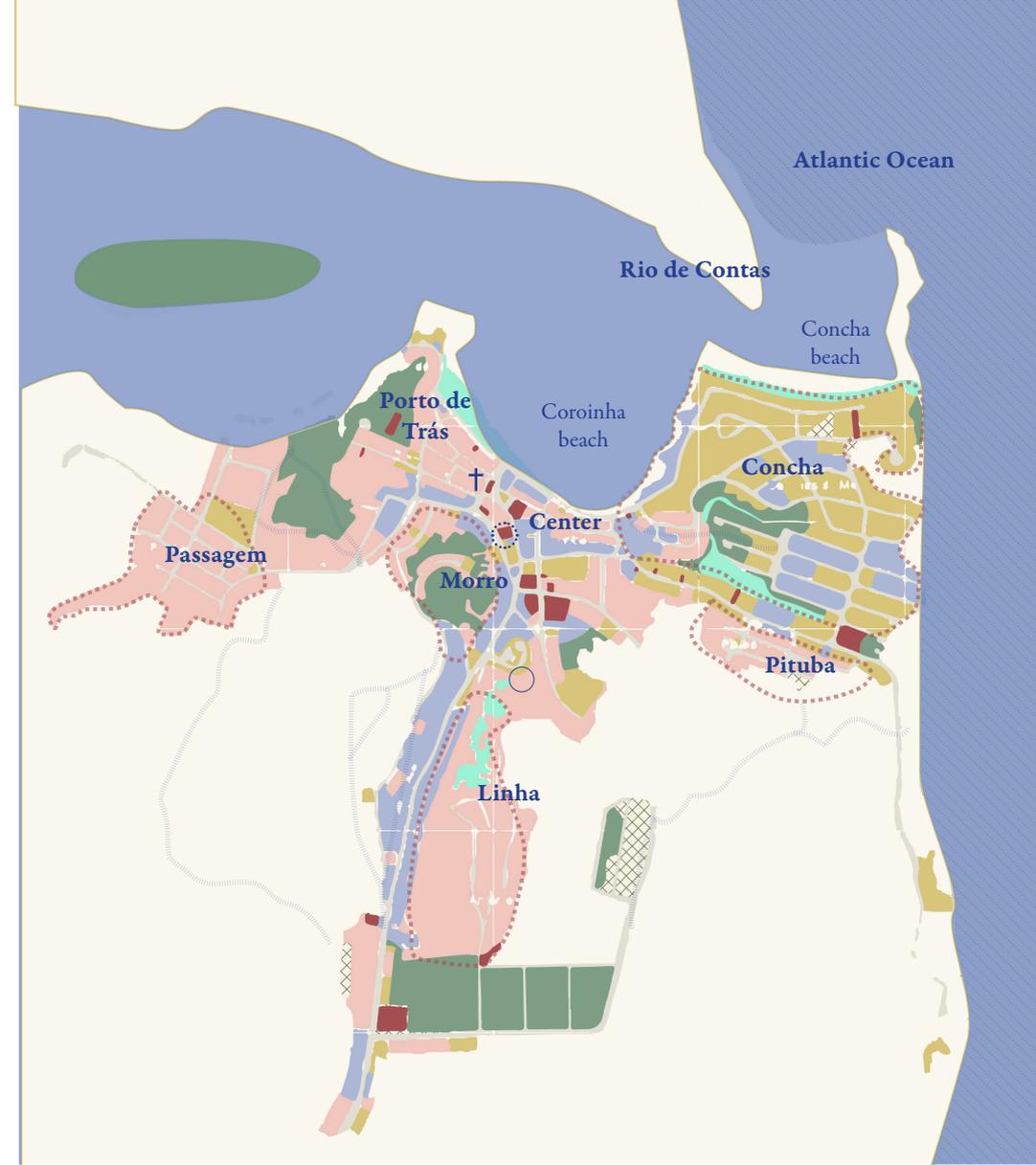
The environmental challenges in Itacaré are further underscored by the transformation of its spaces into commodities, emphasizing the imperative to revisit urban planning strategies. Addressing environmental consequences calls for a holistic approach that prioritizes sustainable development over short-term economic gains. Therefore, vulnerability assessment must consider the intricate interplay of community characteristics, environmental sensitivity, exposure levels, and adaptive capacity.



Population growth in Itacaré, source: Palmer, Christian. Piratas, jesuítas, quilombolas, coronéis, pescadores e surfistas : uma pequena história ambiental de Itacaré. Ed. Santo André, SP: Ed do Autor, 2021.



Touristic regions of the State of Bahia - Cacao region highlighted  
source: <https://www.brasil-turismo.com/bahia/mapa-turismo.htm>



## 2.2 Landing

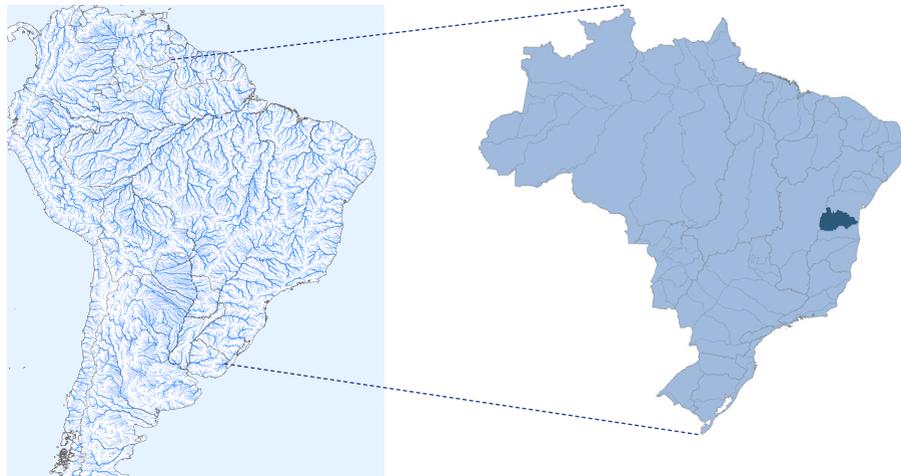
### Morphological Context

*“Understanding river basins and their boundaries is a fundamental element within bioregionalism. A river basin is simply a drainage area of a main river and its tributaries. Any drop of rain that falls within this specific area will end up feeding a spring through infiltration into the groundwater table; the springs will generate streams, and the runoff from thousands of watercourses will converge this flow into a larger river, located in the lowest area of the basin. In other words, a river basin is a natural rainwater catchment area that converges the runoff to a single exit point.”*

Pelo fim das metrópoles : manifesto por um biorregionalismo brasileiro / Marta Leite Montagnana, Mathews Vichr Lopes, Jérôme Alexandre Sensier. -- 1. ed. -- Baependi, MG : Rizomar, 2023. P.50

The Rio das Contas river basin is chosen as the scale of analysis due to its ability to showcase both environmental aspects and patterns of human occupation. This basin spans two of Brazil's most distinct biomes: the Mata Atlântica and the Caatinga, the driest biome in the country. Notably, nestled within this basin lies the renowned Chapada Diamantina, a natural park famous for its periods of gold and diamond extraction. The Rio das Contas basin encompasses 74 municipalities, with approximately 1.55 million residents, and is marked by diverse economic activities ranging from agriculture to tourism, reflective of its rich environmental and cultural heritage.

The Mata Atlântica within the basin has been extensively replaced by agricultural crops. De

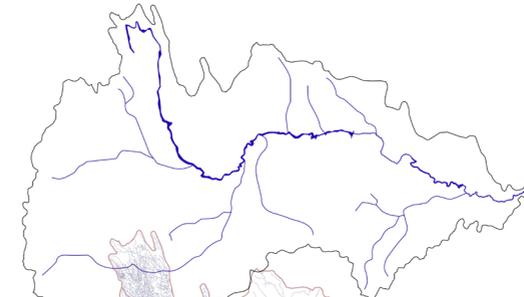


Water: a way into the territory

Map of main rivers in South America and Map of Brazil Highlighting Das Contas River Basin, source: the author 2024

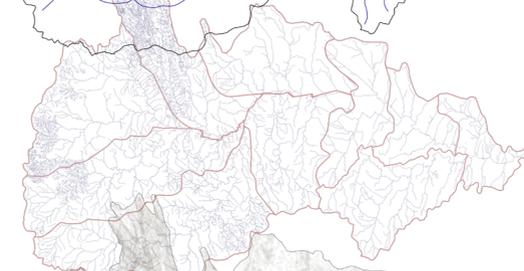
## Das Contas River Basin

### Rio das Contas and main tributaries



### Rivers and subbasins

network that affect all practices



### Topography

from the shore to Chapada Diamantina



### Biomes

from Mata Atlântica to Caatinga  
most tropical - to driest



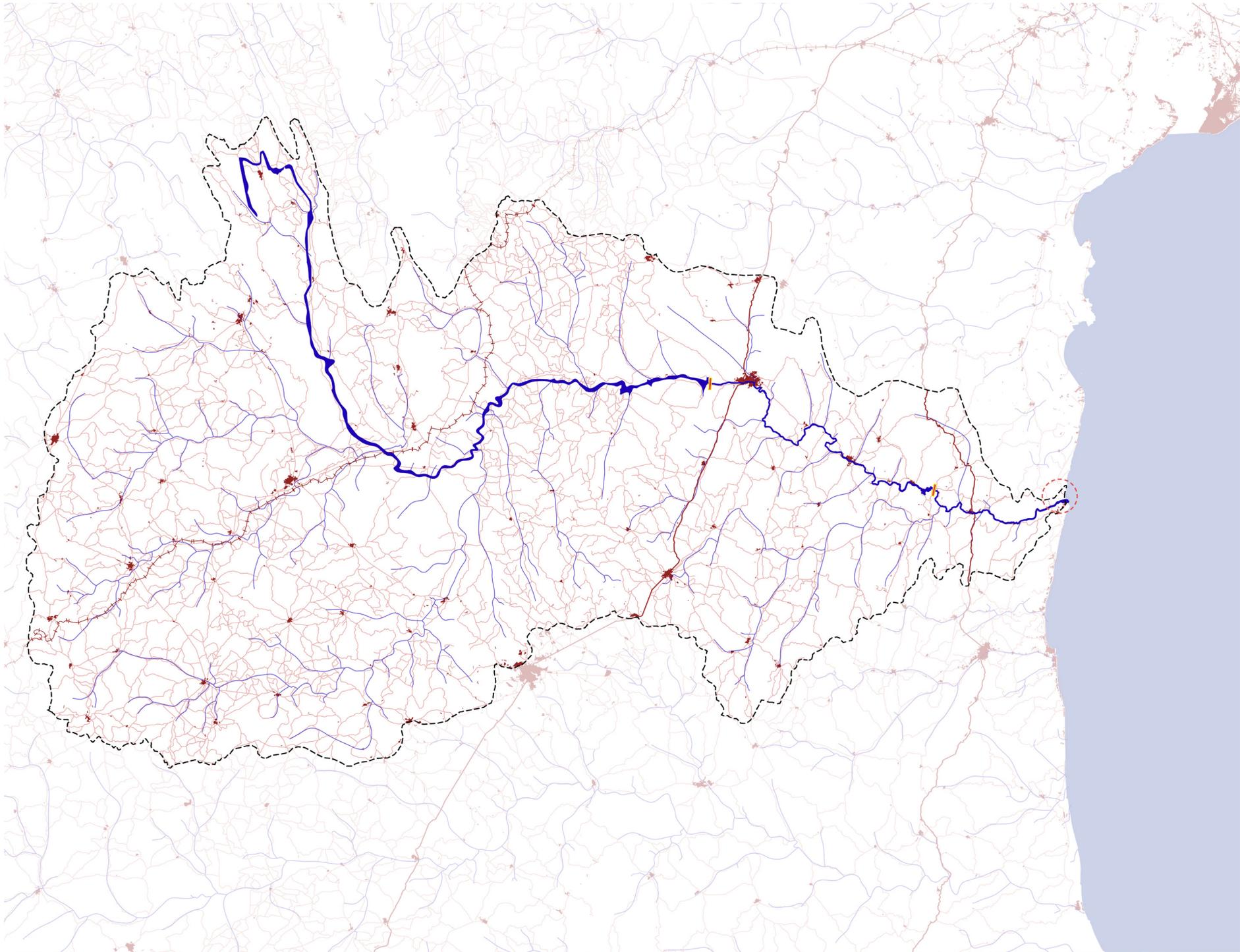


Composition  
Landuse South of Bahia State

In this map we can clearly understand the increase of farming areas towards the Atlantic forest, and the presence of urbanized areas within this biome.

- remaining Atlantic forest
- farming
- urbanized areas
- rivers
- Itacaré

0 50 km



Composition  
Transportation infrastructure  
and main Rivers

- urbanized areas
- rivers
- Itacaré
- Main Highways
- ++ Train Rails
- Dams



forestation and conversion to pasturelands have accelerated erosive processes, particularly in areas utilized for cattle grazing. However, remnants of the Mata Atlântica are found in tabular reliefs of the Coastal Plateau and in shade-grown cacao plantations, the “cabruca” systems, which mitigate deforestation. Towards the river mouth of the Rio das Contas, where the river meets the Atlantic Ocean, mangroves and restingas (characteristic coastal vegetation) struggle to survive and used to host very intense traditional fishing activities that are nowadays in decline.

The coastline washed by the Atlantic Ocean has a very important morphological characteristic: its continental slope is located only 7-8 km from the shore. Usually, this distance is much greater, averaging around 80 km. This proximity means that activities such as fishing or surfing can take place

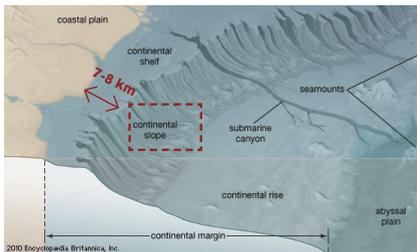


Diagram for the ocean morphology  
source: Encyclopædia Britannica, 2010

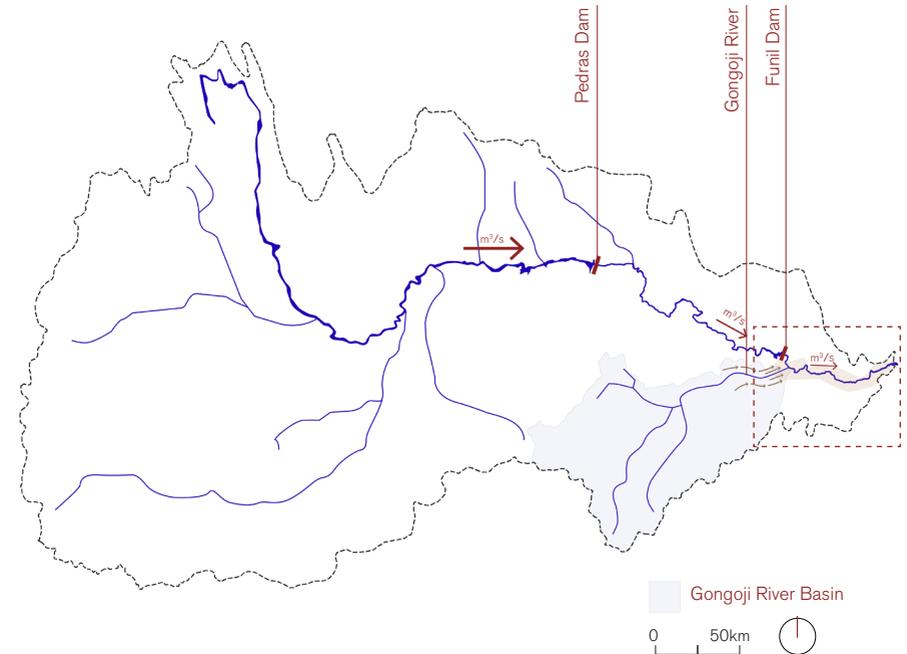
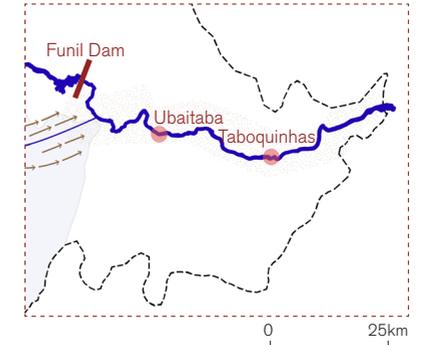
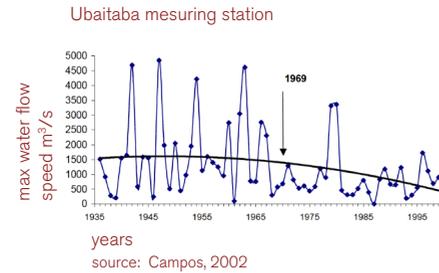
closer to the shore, making it a very privileged spot for both activities. Fishing, in particular, benefits greatly from this proximity, as it allows fishermen to go out to fish and return on the same day without having to spend nights at sea.

The main ecological disturbance of the river happened due to the construction of two large dams, Pedra and Funil, built in 1964 and 1969 on the Rio de Contas for flood control and hydroelectric power generation. Their construction altered the sedimentation patterns of the lower Rio de Contas. Research suggests that the dams have reduced the volume and intensity of flooding events, decreasing the river’s ability to open its channel and causing an increase in sedimentation.

There are two main consequences of the dams that cause disturbances to the hydrological cycle



Schematic models for the location of the dams, the measuring station and Gongoji River, source: Campos, 2002



of the Das Contas River. First, the regularization of discharge causes a reduction in the average annual flow, decreases the seasonal variation of flow, alters the timing of extreme water events, and reduces the magnitude of floods. Secondly, and most disturbing in the lower part of the basin, is the severe reduction in the speed of the downstream river flow, which favors the reduction of transport capacity and the early deposition of sediments.

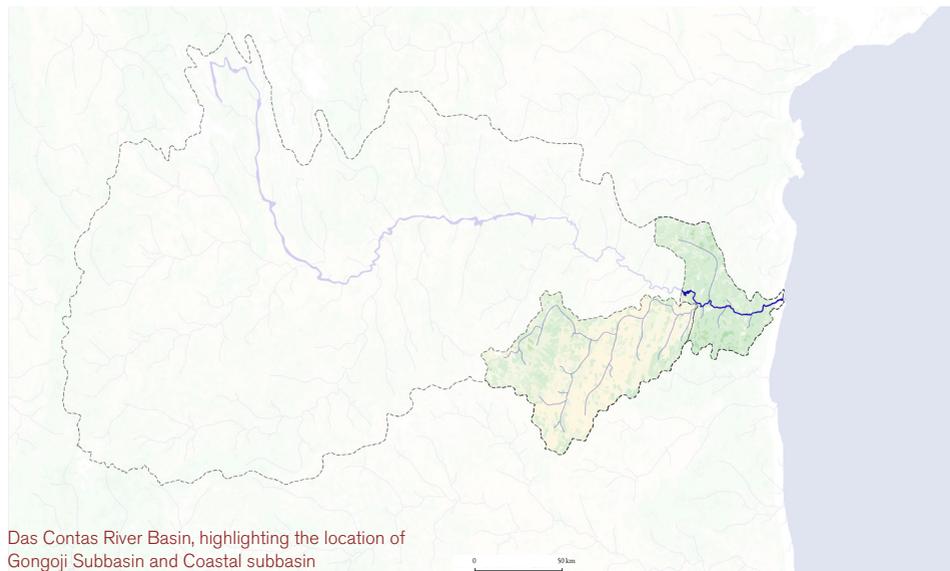
This effect can extend to the mouth where deposition processes predominate and where tidal influence occurs.

At the river mouth, the reduction in liquid flow can be associated with the progressive narrowing of the mouth due to the reduced effectiveness of the hydraulic jet produced by the river flow. This causes the sandbar to consolidate in positions

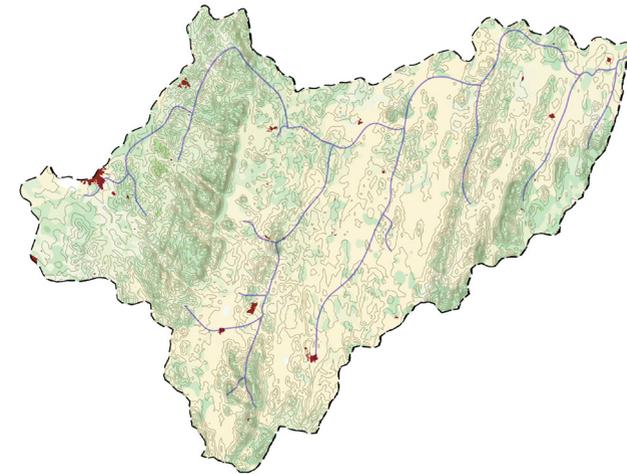
further seaward of the longshore current, resulting in a decreased channel width. This narrowing may have increased its asymmetry and contributed to the formation of a flood-tide delta. The historical clogging of the port may also be caused by marine sands.

The sediments currently clogging the riverbed are of continental origin, suggesting that a significant portion may be supplied by tributaries located downstream of the Funil dam, as the sediment load produced in the upper and middle portions of the basin is retained by the dams (Campos, 2002).

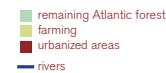
In the lower portion of the basin, the most important tributary is the Gongoji River, and having a closer look at this river's basin (a subbasin of the Das Contas river basin), it is easy to see the predominance of monoculture and cattle farm



Das Contas River Basin, highlighting the location of Gongoji Subbasin and Coastal subbasin



Above :Gongoji subbasin and its predominant farming landuse, below Coastal subbasin and its preserved forest predominance.



ing. The degradation of the original vegetative cover of the Gongoji River basin can be considered the major focus of sediment deposition and siltation in the lower part of the Das Contas river basin, drastically affecting the morphology of the estuary.

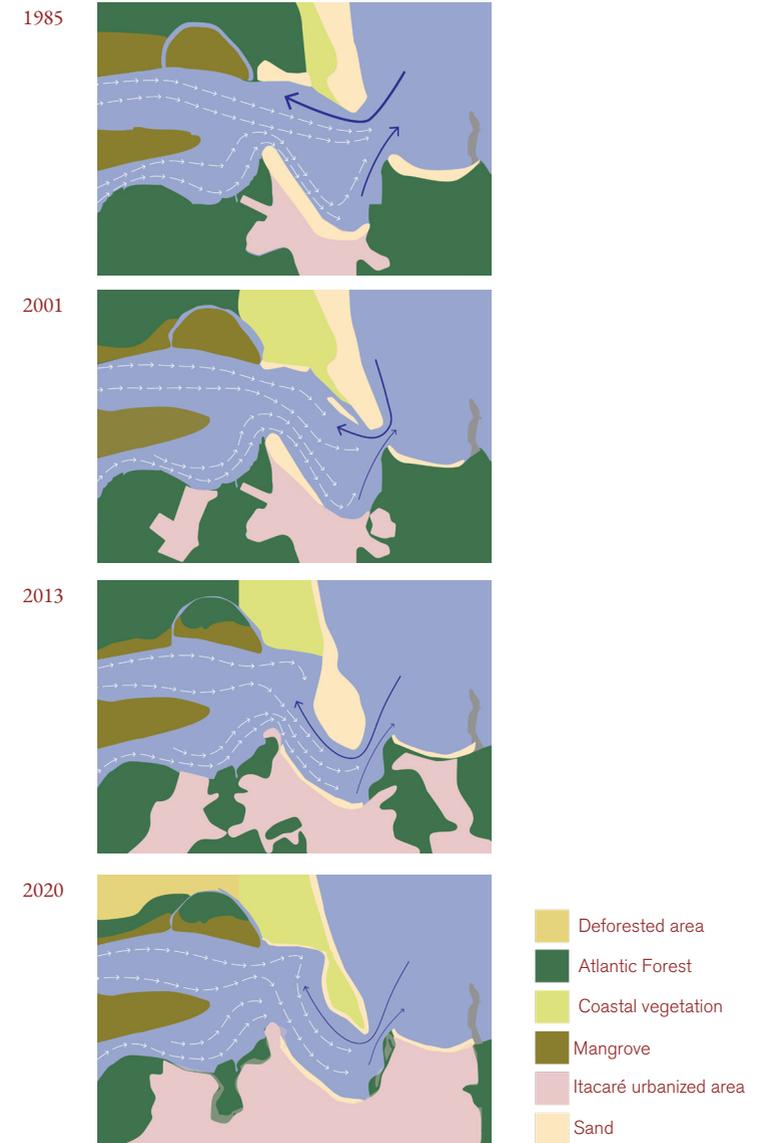
One of the many effects of this hydrological disturbance is the threat to mangrove vegetation. Mangroves rely on a delicate balance between saline and fresh river water to thrive, as this mix provides the unique brackish environment necessary for their growth. This equilibrium ensures the proper distribution of nutrients and sediments, which are crucial for the development and sustainability of mangrove ecosystems. In conversations with representatives of the fishing community of Itacaré, a large decrease in the availability of seafood in the mangroves was re-

ported. This has led the younger generations to abandon the ancestral activity and work mainly in the tourism economy, causing severe disruption to the local community's quality of life and affecting local food security.

The most immediate solution would be to reforest the fragmented mangrove area, but research highlights that reforested areas often do not suffice for ecosystem recovery, sometimes even delaying natural self-recovery, especially in mangroves. Effective restoration requires long-term monitoring to avoid creating "empty forests" and addressing disturbance factors affecting resource inflow and tidal dynamics. A shift towards natural recovery processes, like hydrological restoration and reestablishing natural topography, is necessary.

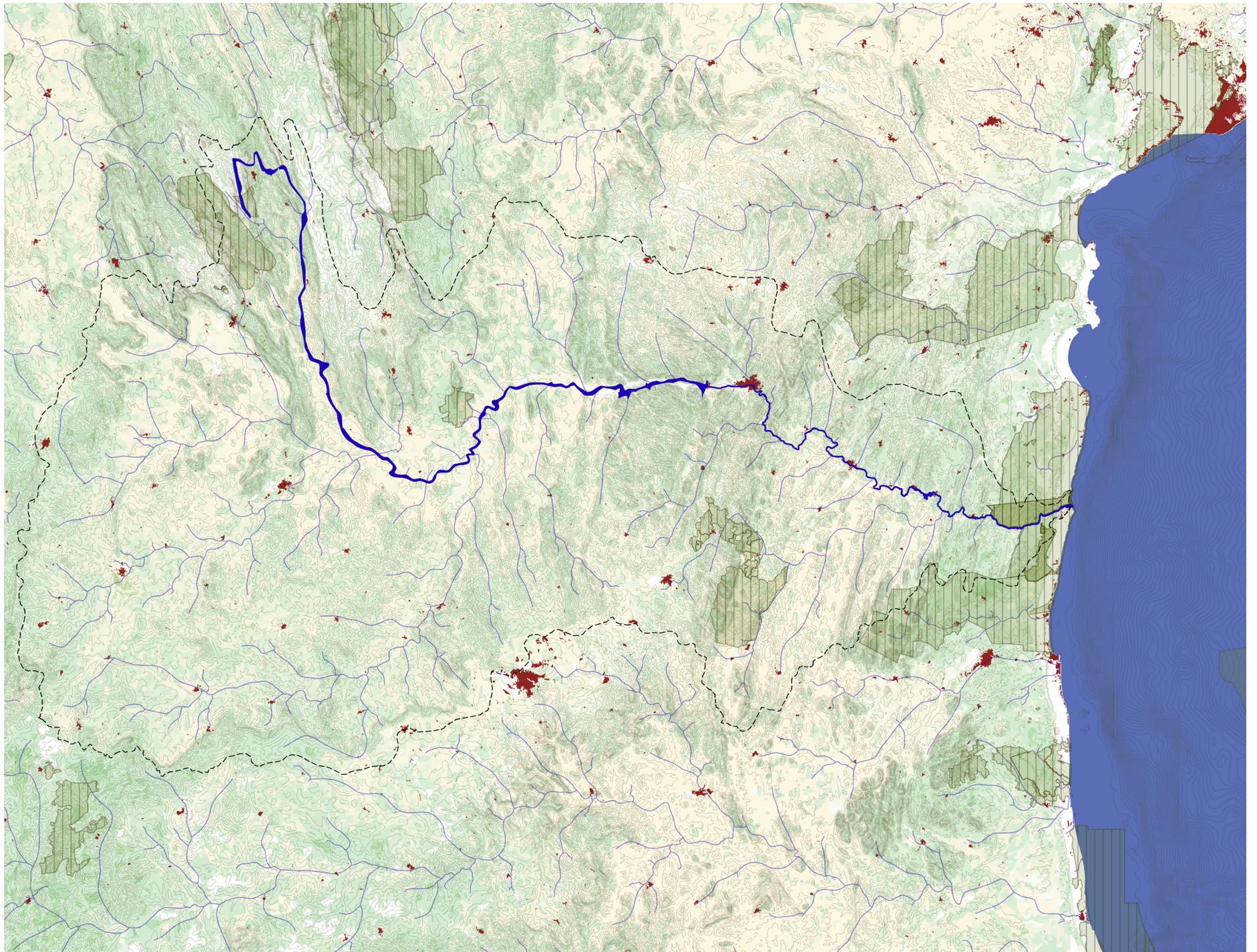


Sea Currents in Brazil and the direction of the Atlantic ocean flow, Brazil Current



Composition  
Preservation Areas and  
Urban occupation

- environmental conservation unit
- remaining Atlantic forest and farming
- Itacaré city
- Urbanized areas
- rivers



## 2.4 Resistance in the forest

Extending the concept of endemism within the Atlantic Forest involves recognizing human occupancies and practices that are intricate to this biome, such as the ecological distinctiveness found in endemic animal and vegetation species.

### Quilombo

One such endemic form of resistance is the establishment of Quilombos. Enslaved peoples, through extra work activities and savings, purchased their freedom or escaped and formed Quilombos on the outskirts of villages, maintaining independence through organized societies capable of defending against government forces. Quilombolas (inhabitants of a quilombo) self-define themselves as such by their common relationships with a land, family lines, territory, ancestry, traditions, and own cultural practices. Their knowledge is mainly passed on orally and has been ignored by traditional scholarship for centuries.

The majority of Quilombos in Brazil are located within the State of Bahia due to its first occupation by the Portuguese colonizers.

There are over 500 Quilombos in Bahia, but most of them has not been legally recognized. There are rural and urban quilombos, always occupying land that has been left out of formal occupation usually due to their physical characteristics that are usually of challenging settlements. Either too slopy, or too floodable, these communities have been accumulating knowledge and

extremely powerful solutions for territorial management and subsistence in symbiosis with the environment. This social groups have been historically marginalized in Brazil. With land rights guaranteed by the 1988 Constitution, quilombos, like Indigenous communities, can claim communal land based on their shared cultural history and connection to specific territories.

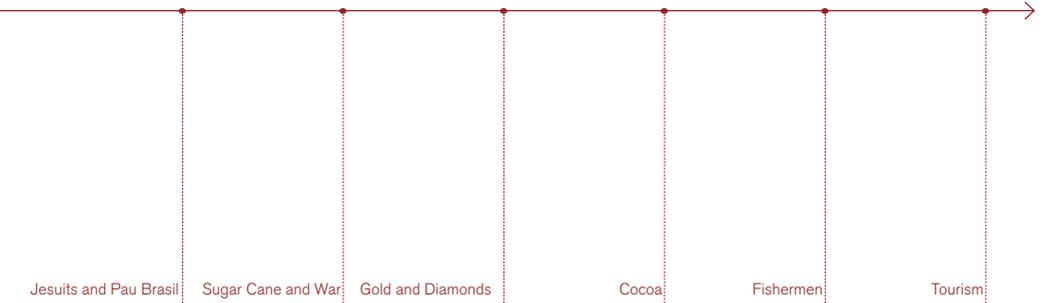
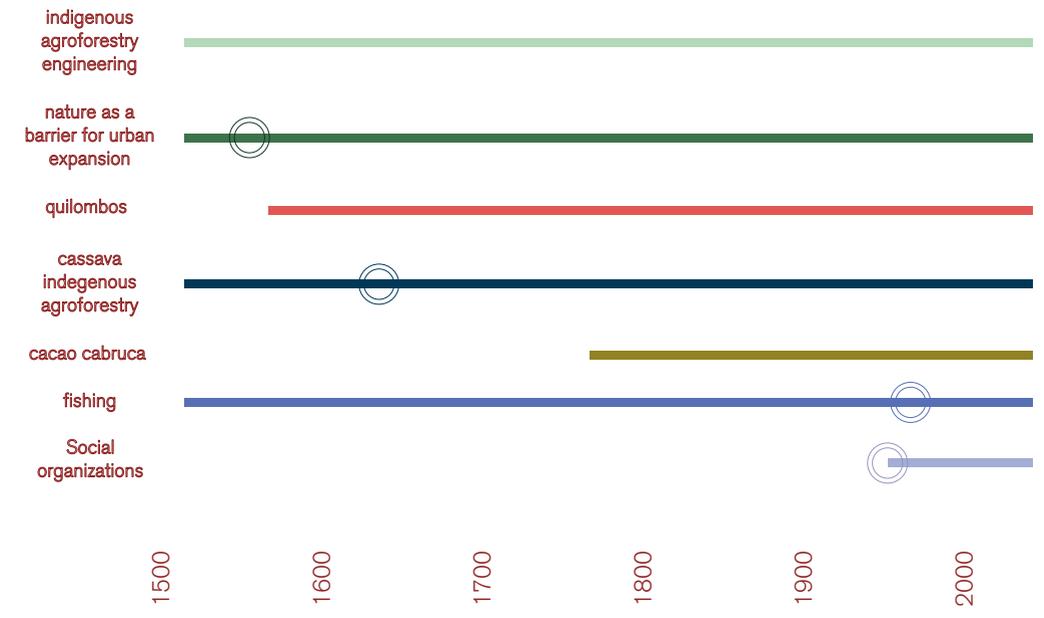
### Settlements

The sesmaria system and the prevalence of slavery in Brazil meant that most land was owned by a small percentage of the population. Lands granted by the Crown were to be cultivated within five years or returned, though this was rarely enforced. This precedent established that land should be used productively. The sesmaria system ended in 1822 when Brazil declared independence from Portugal.

In 1850, a new Land Law was enacted, creating private property but requiring land to be acquired by inheritance or purchase. Unoccupied lands belonged to the state and had to be bought. This law aimed to ensure labor by preventing freed slaves and immigrants from claiming new lands, thereby consolidating land ownership among the elite.

The 1946 Constitution recognized land's social function, but it was only with the 1988 Constitution that the state could expropriate land for agrarian reform. This reform was based on using land productively, allowing small farmers to

### Resistance Practices



○ moment when the activity has a decisive role on the landscape of Itacaré

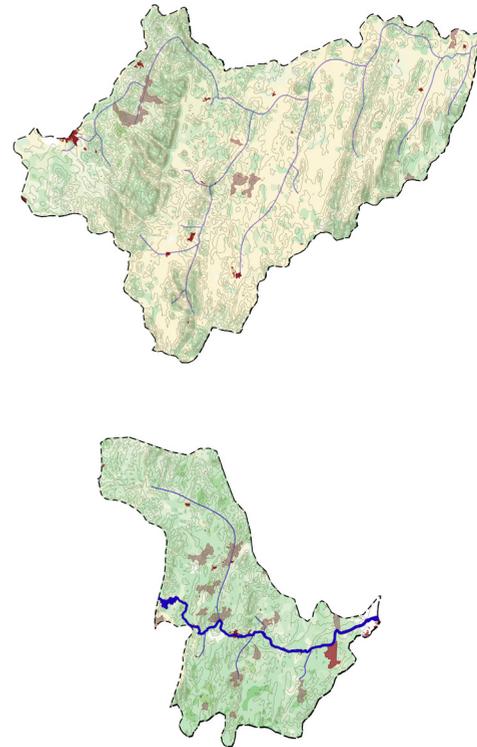
claim it. Following the collapse of the cocoa economy in southern Bahia in the late 1980s, abandoned farms became targets for landless workers who established agrarian settlements.

These settlements, often initially illegal, were later legitimized by the National Institute for Colonization and Agrarian Reform (INCRA). Over time, environmental legislation changed to protect forests, affecting land use policies. Tourism has complicated land values, as agrarian reform lands are often sold for higher prices, altering the social fabric of areas like Itacaré.

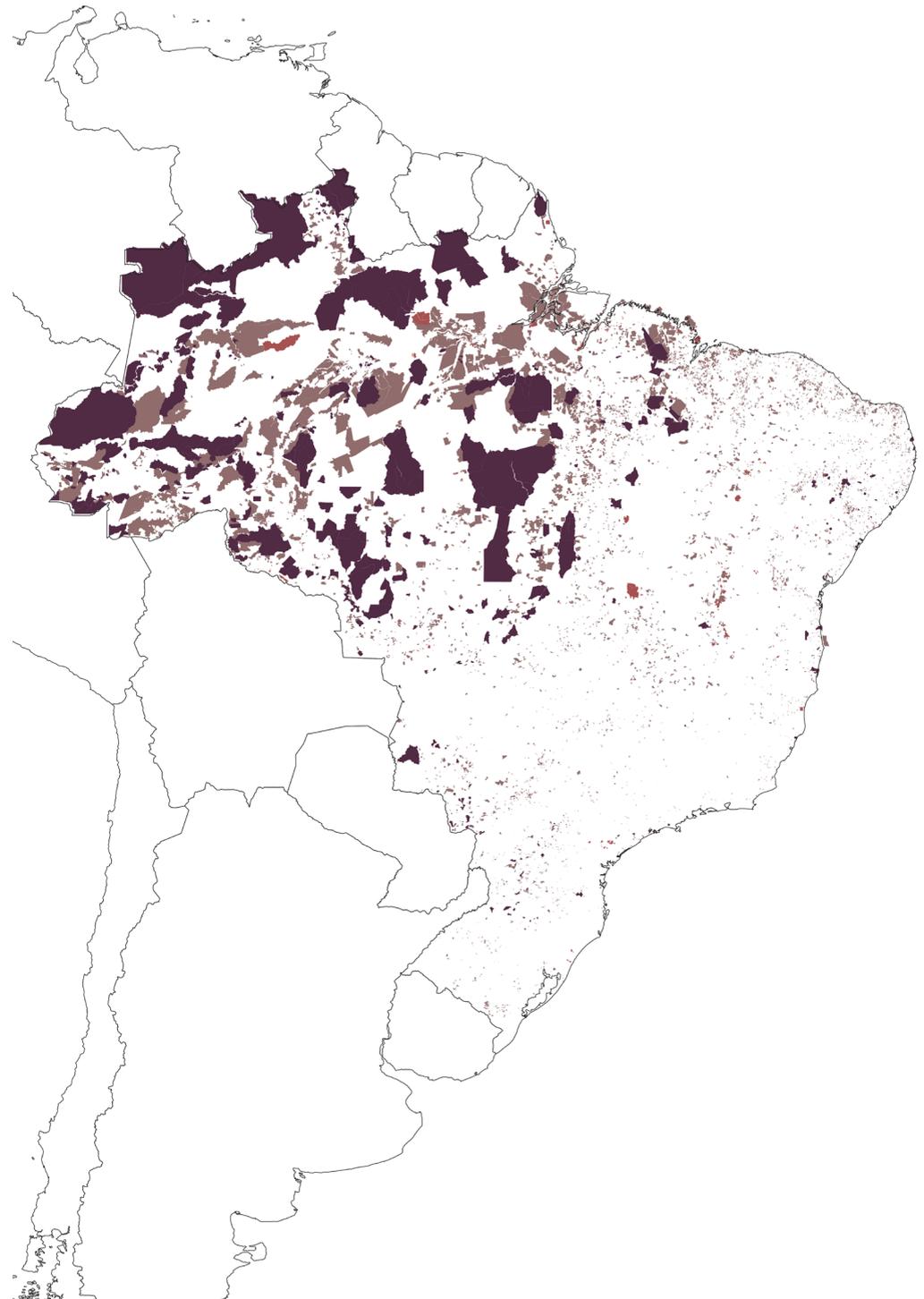
**ESTATÍSTICA**

Estado	Comunidade(s) certificada(s)	Comunidade(s) titulada(s)
AL	69	0
AM	8	0
AP	40	0
<b>BA</b>	<b>543</b>	<b>1</b>
CE	37	0
ES	27	0
GO	23	0
MA	463	1
MG	13	0
MS	22	2
MT	70	0
PA	11	0
PB	7	0
PE	3	0
PI	5	0
PR	36	0
RJ	43	3
RN	33	0

Amount of Quilombos by state in Brazil. Highlighted Bahia State.  
source: <https://kn.org.br/atlasquilombola/estatistica>



Territories of traditional communities in Brasil  
Comparison between Gongoji and Coastal Subbasins, it is possible to notice the largest amount of these communities on the Coastal subbasin

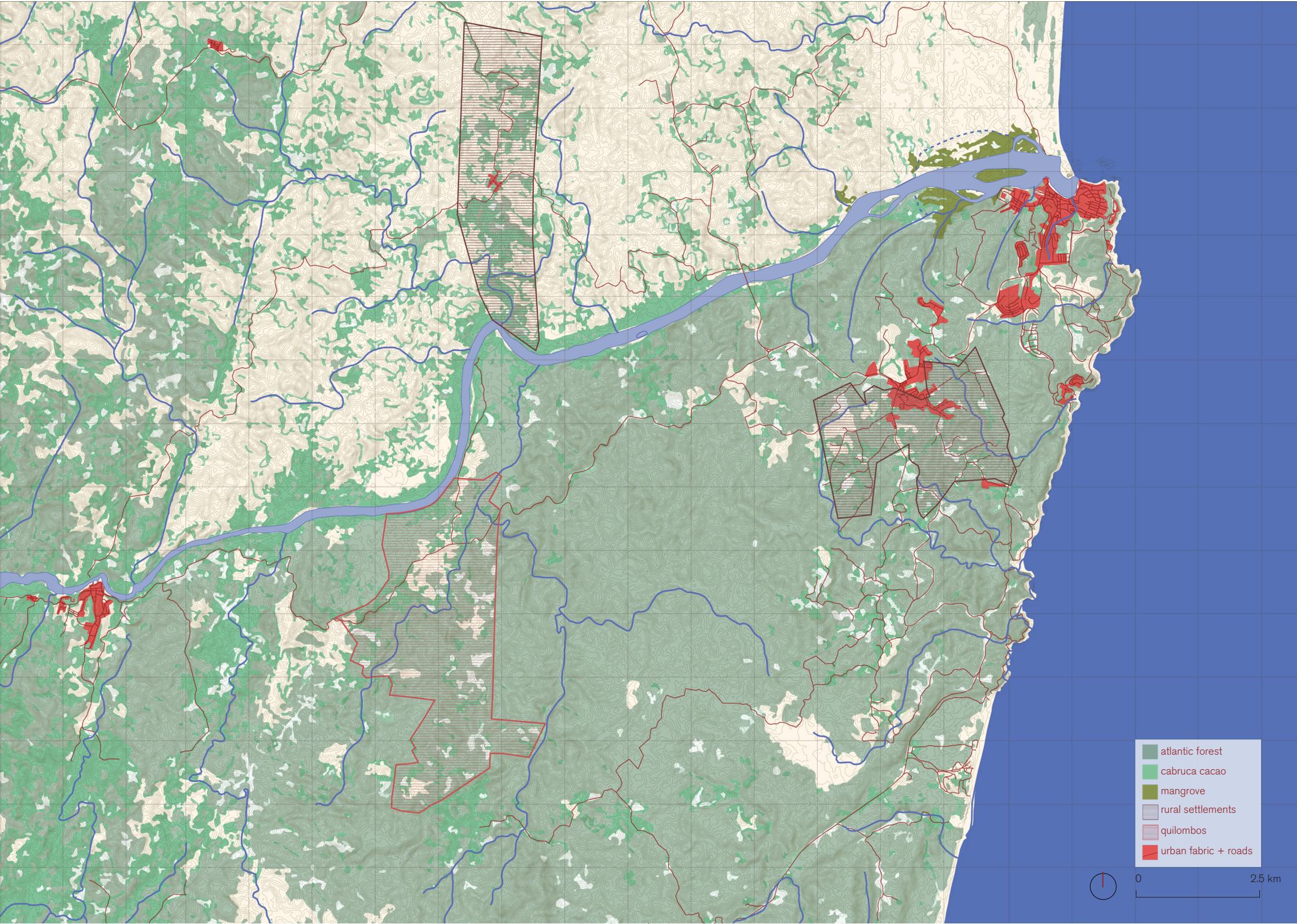




Social Territorialization and Infrastructure

- Urbanized areas
- Settlement
- Quilombo
- Indigenous Territory
- - - Rio das Contas Basin and subbasins
- zoom in next page

0 50 km



- atlantic forest
- cabruca cacao
- mangrove
- rural settlements
- quilombos
- urban fabric + roads





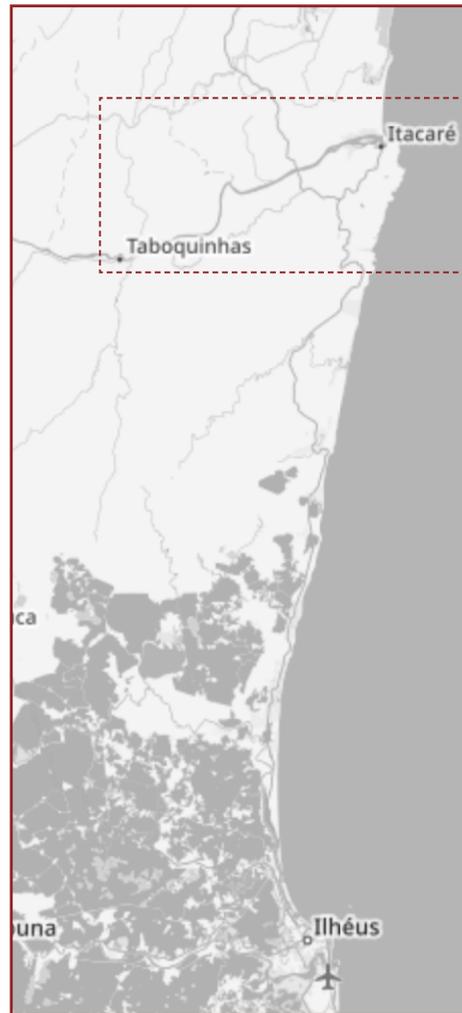
screenshots of the documentary Biatatá produced by Llibre Obert Barcelona, immersive video-filmed in the Porto de Trás Quilombo in 2001 available at: <https://www.youtube.com/watch?v=1Jk-3r4pSFg&t=5s>

### 3. Approximation *fieldtrip*

The fieldtrip happened on March 2024, when I had the opportunity to travel to Itacaré for five days. I arrived in the airport in Ilhéus and headed to the bus station where I took a public bus to Itacaré. During the bus trip I could start seeing the landscape marked by enormous patches of greenery intercalated with entrances to small towns, to rural properties and to luxurious condominiums. I held four interviews with inhabitants of three different places connected to the Das Contas River.



0 200 km



0 10 km



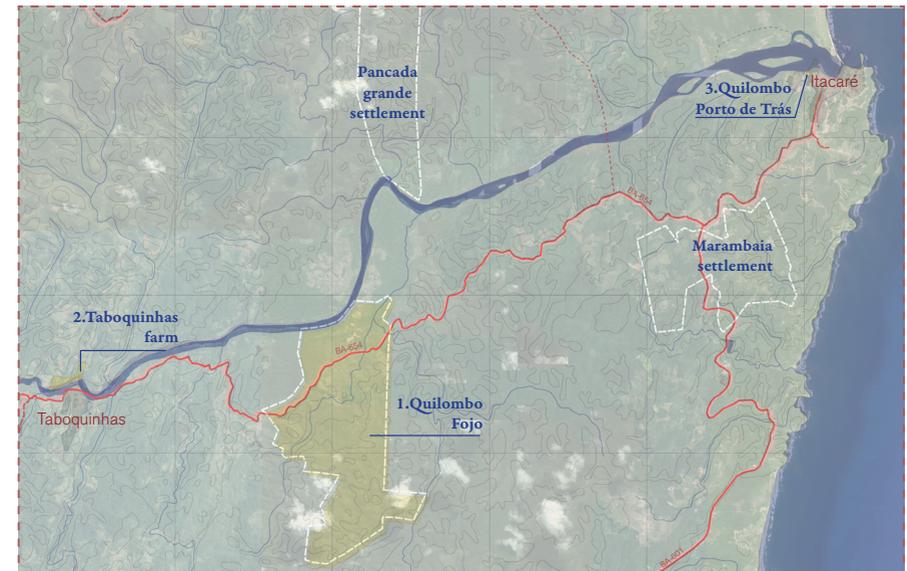
2. Taboquinhas



1. Fojo Rural Quilombo



3. Porto de Trás



0 5 km

# Fojo Rural Quilombo

## 18/03/2024

First and second interviews happened with Fojo's Quilombo residents.

First one, Biro, who is also a City Councilor of the municipality of Itacaré, told me about his experience over the last years as a politician and of the needs of the rural settlement of Fojo. After the interview I asked if I could go to the Quilombo and he kindly offered to take me on his car with his assessor and a young man who they were providing assistance to formalize his personal documents. It became clear that the role of politicians in small towns and communities like the Quilombos goes beyond than just formal public engagements, but also embrace helping in daily life issues and struggles of the people from their communities.

When I arrived at the Quilombo I was taken to the house of an elder man called Miguel, who agreed be interviewed. He began by noting that he was not originally from this quilombo. He highlighted their biggest struggle: gaining land ownership recognition to access bank credit and

improve agricultural activities, emphasizing that land ownership equates to freedom. Over the years, they have refined their planting methods to respect the ecosystem, avoiding land-burning practices that can kill the soil. I observed that all houses in the quilombo have small agroforestry setups in their backyards for self-consumption. There is a strong sense of community, yet with a respect for privacy and individual housing. Mr. Miguel stressed the urgent need for tractors and better transportation infrastructure. He also pointed out the stream at the end of the street, which is fully utilized by children and serves as a leisure spot for the community. Then he took me to see his backyard filled with agroforestry, where he produced his daily food. His neighbor was also kind to show me her backyard highlighting all fruits present in her agroforestry. I took a walk around their street and saw this stream being used by kids to play and swim.





# Taboquinhas Cacao Farm

## 19/03/2024

The next day I took a boat trip to the city of Taboquinhas, I had a very good one-hour immersion on the landscape of cacao. The cacao trees were vastly spread all along the margins of the Das Contas River. There were small simple houses but also still some old mansions remaining from the Cacao boom during the beginning of the twentieth century.

On the other side of the River from Taboquinhas city is the agroecological cacao farm from Mr. Osvaldo. He kindly received me, and we talked for more than two hours about his life story, how he chose to settle in this land, and the importance of reforestation and agroecology on all his land occupation. He shared the challenges he faced in replanting the ciliary forest three times

due to the extreme water level and flow increases caused by upstream dam releases. This has led to significant vegetation loss and heightened vulnerability for the forest, river, and surrounding communities. Mr. Osvaldo highlighted the crucial role of cabruca cacao in preserving the remaining forests in the region and pointed out that the area's topography has helped prevent the encroachment of large-scale agribusiness. He emphasized cacao's vital role in providing both social and ecological structure to the local context. During the interview, Mr. Osvaldo demonstrated the entire cacao planting and chocolate processing process, showcasing his expertise. We concluded our visit with a boat ride back to Itacaré.



# Porto de Trás urban Quilombo

## 20/03/2024

Lastly I visited the urban Quilombo of Porto de Trás, located inside Itacaré city. I met with Darlan, a community leader. We discussed the decline of the fishing tradition in Porto de Trás, largely due to floods that have decimated seafood populations, forcing many residents to seek work in the tourism industry. He emphasized the rich quilombola culture of Porto de Trás, highlighting the urgent need to restore cultural sites to preserve their heritage. Darlan also spoke passionately about revitalizing the local seafood association and improving infrastructure to strengthen both leisure and economic activities in the mangrove and river areas. He believes that fishing remains a vital activity for ensuring the community's social autonomy. With a clear vision for the future, Darlan outlined his plans for developing the port area into a community place, introducing more infrastructure for leisure and for fishing activities.

Porto de Trás is often described as the oldest neighborhood in the city, predating even the central church the neighborhood is often seen as the city's original slave quarter. Geographically, it reflects social hierarchies, with Black residents historically confined to the lowlands near the river, while the cocoa elite occupied the small hill around the church in the city center by the sea. (Palmer, 2021)

Porto de Trás has been redefined by tourism promoters and Afro-Brazilian activists as Itacaré's cultural and ethnic heart, boosting its role in the tourism economy. This shift has led to development projects and fostered cultural pride among residents, though it hasn't necessarily

spurred economic growth.

The neighborhood is centered around a main street that ends at the river. The houses are old and built right up to the sidewalk, typical of the area. The street concludes with steps leading down to the river, where canoes are tucked away among the mangroves.

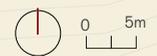
In December 2012, the Fundação Cultural Palmares recognized Porto de Trás as an urban quilombo, a community linked to historical slave escapee settlements. Porto de Trás, along with six other rural quilombos in the municipality, is connected to the historical quilombo of Oitizeiro, located upstream on the Rio de Contas (Palmer, 2021).

This recognition can attract new investments. For example, in 2008, a Swedish corporation, SVEA, constructed a large community cultural center as a counterpart to a major hotel project near Resende Beach. These projects are often public works by companies seeking community or government support. Tourism has fostered cultural awareness and developments tied to Afro-Brazilian identity in Porto de Trás. This cultural identity and community cohesion have largely protected it from crime problems typically linked to urban growth (Palmer, 2021).





- 1 - Existing cultural center
- 2 - Existing seafood association
- 3 - Existing small stage for events
- 4 - Existing community space



## 4. Research Questions

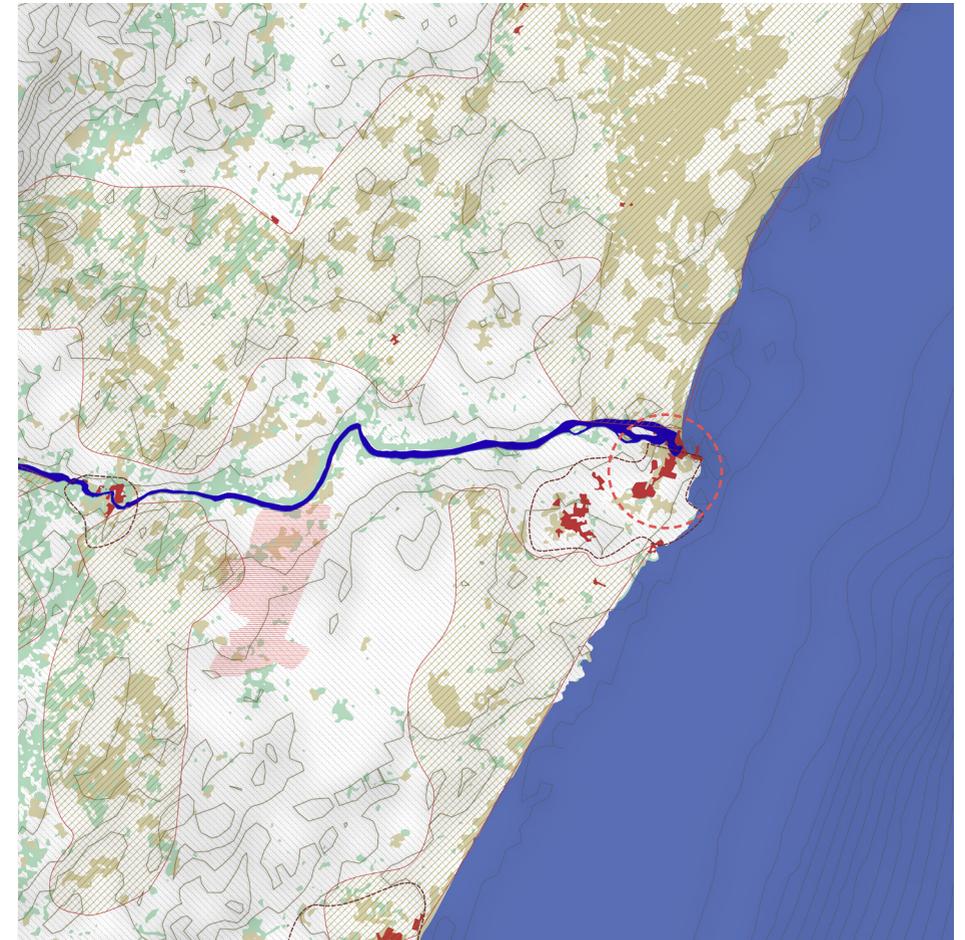
How to envision the future of Itacaré through a counter-colonizing approach that aims the restauration of ecological integrity of the Atlantic Forest?

*Subquestions:*

What is the current state of urbanization of Itacaré and what are the main concerns for the future?

How can the concept of counter-colonization become spatial in the context of the lower part of Das Contas River?

What are the main ecological qualities that need to be restored in the Atlantic Forest biome and how their consequences are affecting local existences in the region today?



Transposition  
Projections for 2050

What if the urban and farming expansions continue at the same pace? What will the landscape of this region look like? Does it impose a threat to the Quilombo and settlements areas? What will happen to all the forests that hold the cabruca plantations?

○ Itacaré city  
■ Urbanized areas  
■ Quilombo  
■ Cacau cabruca plantations  
■ Extensive farming  
■ Original forest  
□ Urban expansion 2050  
□ Extensive farming expansion 2050

# 5. Research Hypotesis

## *endemic urbanization*

The research hypotheses posit a fundamental shift in the urbanization paradigm, proposing a departure from the traditional modernist vision of progress shaped by external forces and economic competition. Instead, the focus is on embracing a new paradigm where urban expansion is driven by factors intrinsic to the social and morphological fabric of the community. This transformative approach aims to cultivate a more resilient form of urbanization capable of effectively navigating the escalating challenges posed by natural, social, and political crises.

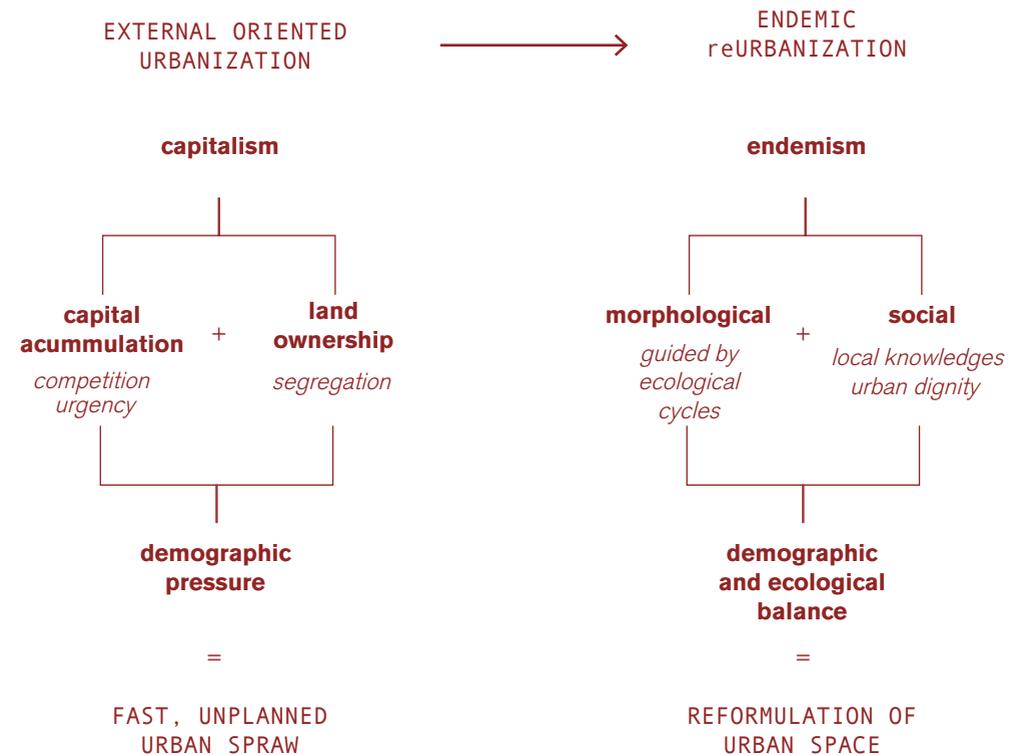
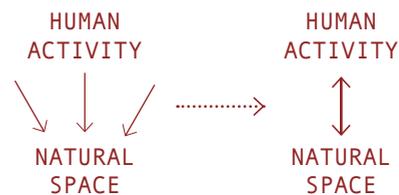
Central to the hypotheses is the concept of shielding the urbanization process from external influences, fostering a sustainable pace that aligns with the needs of the local community and of the natural environment. By divorcing the planning efforts from market fluctuations and external pressures, the research aims to unfold into small interventions that can serve as an alternative, where urban development is organically derived from endemic necessities. This shift intends to create an urban development that is not only more coherent with the unique socio-cultural context but is also better equipped to withstand the complexities of the contemporary era.

Fostering autonomy should be the key to any possible proposal, because it implies resilience. An autonomous community will be locally more resilient to global economic oscillations, as well as a landscape that is guided by the ecological cycles is also more resilient to disturbances and human alterations.

The challenge to restore a fragmented biome

implies a very deep understanding of the natural and morphological components of the landscape, their relations and of how they were altered through time. There is a clear limit of how much a foreigner can understand by technical research and synthetic knowledge. Although, there are no limitations to the depth of the knowledge of those who live this landscape and need it for survival. Indigenous people, Quilombolas, inhabitants of rural settlements and local farmers need to be in the centre of the rising discussions around climate resilience and biome restorations. Their knowledge goes beyond the biome but embraces forms of human existence within the biome and many creative economical solutions for this necessary coexistence.

When tackling possible reformulations for the urban growth of Itacaré, and for the development of the region, two main concepts came to light: Bioeconomy and Bioregionalism. They both depart from the focus on the existing and possible relations that can foster autonomy for all beings of the region.



# Bioeconomy

Bioeconomy refers to the development of economic activities that use natural resources sustainably and innovatively, promoting sustainable development and the well-being of populations. In the context of the Southern Coastal Territory (TLS) of Bahia, bioeconomy is strongly linked to cocoa farming, mainly through the cabruca system, where cocoa is cultivated under the shade of Atlantic Forest trees. This practice not only conserves biodiversity but also provides income to farmers. The shading provided by the cabruca system, where the shrub mass can represent up to 60% of the total carbon stock, has significant potential for carbon sequestration, which could enable access to global markets.

In TLS, 78% of enterprises utilize the cabruca system economically, with bananas being the most exploited product in 72% of these cases. Outside the cabruca system, the most common agroforestry consortia are cocoa-banana (present in 60.6% of consortia) and cocoa-rubber tree (41%). Cocoa, introduced in the 1980s, is considered a “perfect marriage” due to its advantages, such as integrating two commodities to distribute income throughout the year, reducing susceptibility to price fluctuations, conserving soil, and increasing productivity per area.

In addition to cocoa, other products like cajá, jackfruit, cupuaçu, and coconut are cultivated and sold both fresh and processed at various levels. The processing can include hot methods (such as making sweets, preserves, granolas, jams, and cereal bars) or cold methods (such as producing pulps, ice cream, and juices).

Despite the wide variety of economically potential products, the main challenges observed are related to processing, transportation, commercialization, and rural credit. Most producers are family farmers, and cocoa is their primary product, which can be sold without much difficulty. However, this leads to a gap in associativist practices, with only 34% of farmers participating in social organizations, according to Instituto Floresta Viva (2020). This limits the transformative synergies necessary for greater structuring of value chains and social practices.

In the region, full sun plantations make up 8.7% of the productive units, while agroforestry systems and consortium cultivations are more common. The National Plan for the Promotion of Sociobiodiversity Product Chains (PNPSB, 2009) emphasizes the importance of sustainable economic activities, particularly those that generate income while conserving biodiversity.

Most producers are from traditional communities, such as quilombola remnants or settlements. This makes cocoa farming a crucial factor for preserving the agroforestry mosaic landscape and biodiversity and maintaining traditional ways of life in the region. Recommendations include fostering local productive growth by strengthening the symbolic value of the territory and its identity based on cocoa and chocolate. Territorial transformation should support this important asset, considering synergies with other activities analyzed in the study.

Current challenges in structuring value chains in high biodiversity territories include strength

## Possible products to be combined with cabruca cacao

Eritrina



Açaí



Banana



Photos: Oportunidades da bioeconomia no território litoral Sul da Bahia: cadeias de valor e seu potencial estruturante / Artur Sgambatti Monteiro ... [et al.] – Ilhéus, BA : PCTSB, 2023.136 p. : il.

ening Traditional Peoples and Communities and Family Farmers (PCTAF) and recognizing sustainable practices in biodiversity conservation. Institutional and socioeconomic mechanisms that encourage income generation in these territories are also essential.

The TLS has been addressed by different territorial policies and defined as a Rural, Citizenship, and Identity Territory, emphasizing various criteria of importance. Despite its strong agro-pastoral production history, the region still suffers from economic slowdown due to the cocoa chain's decline since the 1990s. This decline and high land concentration have led to movements advocating for land access, resulting in numerous settlements and a strong presence of family farming.

Thus, the historical production process marked by cabruca systems and land access struggles by traditional and family farming communities highlights the need for production diversification to enhance socioeconomic dynamism, protect traditional populations, and conserve sociobiodiversity in TLS. Strengthening the bioeconomy, with a focus on biodiversity conservation and sustainable production, is key. State proactivity and the relevance of policies, programs, and practices for territorial strengthening are essential for long-term success.

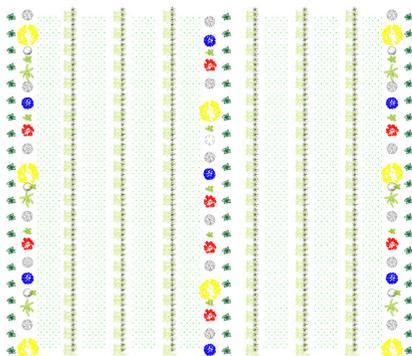
Local Productive Arrangements (APLs) are clusters of enterprises in the same sector within a territory, maintaining a certain level of articulation, interaction, and learning among themselves and with other local actors. Investing in

and strengthening APLs is crucial for territorial development, considering the need to combine biodiversity conservation with production and income generation activities.

### Key processes include

Education, research, management, production, processing, distribution, commercialization and consumption.

	name	spacing			
	Banana da Terra	7 x 3,5 m		Pau-Brazil	5,25 x 3,5 m
	Círcunia	0,5 x 1 m		Feijão de Pinto	0,5 m - 10x10x10
	Girindã	1,5 x 3,5 m		Ipê Fogueira	7 x 3,5 m
	Cacau	3,0 x 3,5 m		Louro Preto	7 x 3,5 m
	Eucalipto	1,5 x 3,5 m		Jaqueira	5,25 x 3,5 m
	Milho	0,12 m - linha apertada		Cacim Massal	Forragem



Agroforestry scheme for a family plot in South of Bahia (Nascimento, 2022)



Comparison between the three cultivation systems: 1. full sun, 2. cabruca and 3. consortium. Source photos: Oportunidades da bioeconomia no território litoral Sul da Bahia: cadeias de valor e seu potencial estruturante / Artur Sgambatti Monteiro ... [et al.]. – Ilhéus, BA : PCTSB, 2023.136 p. : il.



Some products derived from cocoa: Jam, nibs and cocoa butter. Source: Oportunidades da bioeconomia no território litoral Sul da Bahia: cadeias de valor e seu potencial estruturante / Artur Sgambatti Monteiro ... [et al.]. – Ilhéus, BA : PCTSB, 2023.136 p. : il.

# Bioregionalism

Bioregionalism proposes a redefinition of territorial organization to prioritize the well-being of humans and the entire biosphere. This approach is grounded in principles of self-determination and sustainability, aiming to promote greater autonomy and beneficial interconnections between nature and human activities. At its core, bioregionalism encourages communities to reterritorialize and relocalize their efforts, focusing on their bioregions as common goods. This involves viewing territories as living ecosystems where humans are a small part of a larger, interdependent system, and learning to inhabit these territories in a regenerative manner.

One of the key missions of bioregionalism is to foster a sense of affection and belonging to the places where people live. By creating a unique map of their bioregion, individuals can develop a personal vision of their environment, fostering community engagement and identifying local problems and potentials. This process helps people to coevolve with their environment over the long term, contrasting with the industrial civilization's disruption of the natural coevolutionary process, which has historically been between humans and their natural surroundings.

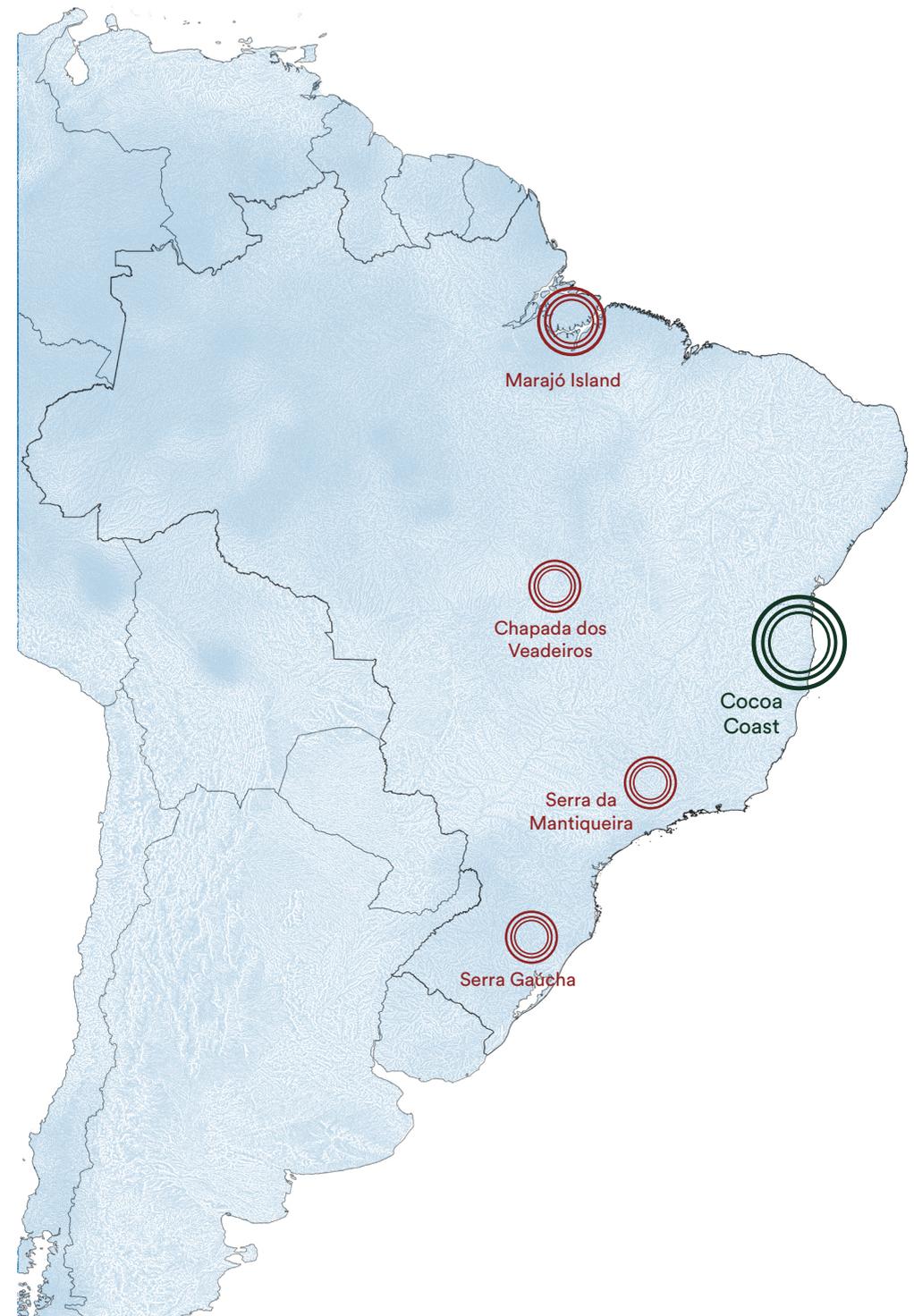
A fundamental aspect of bioregionalism is understanding the importance of River Basins and their boundaries. A River Basin is an area of land that drains all the streams and rainfall to a common outlet, such as a larger river. This natural drainage system ensures that any rainwater eventually feeds into a stream or river, highlighting the interconnectedness of water systems within

a region. Historically, human settlements, such as villages, were established near water bodies to ensure access to vital resources like water for drinking, hygiene, fishing, and irrigation. Communities living symbiotically with rivers needed to maintain control over the upper parts of their watersheds to ensure the flow of water to their settlements (Montagnana, Lopes, Sensier, 2023)

The delineation of watersheds often coincided with the territorial boundaries of traditional peoples, with ridgelines representing natural borders. These water-based boundaries underscored the critical role of water as a common good that needs to be preserved at a territorial scale. Thus, in defining their bioregion, communities should consider two primary territorial characteristics: ecological unity and sociocultural coherence.

Bioregionalism also advocates for the end of metropolitan dominance, suggesting that agroecological settlements should grow instead of cities. While ensuring access to city services is essential, the focus should be on expanding and enhancing rural and suburban areas where sustainable practices can thrive.

In essence, bioregionalism is about creating a harmonious relationship between humans and their environment, recognizing the importance of local ecosystems, and promoting sustainable and autonomous living practices. This approach aims to ensure that communities can thrive while maintaining the health and integrity of the biosphere (Montagnana, Lopes, Sensier, 2023).



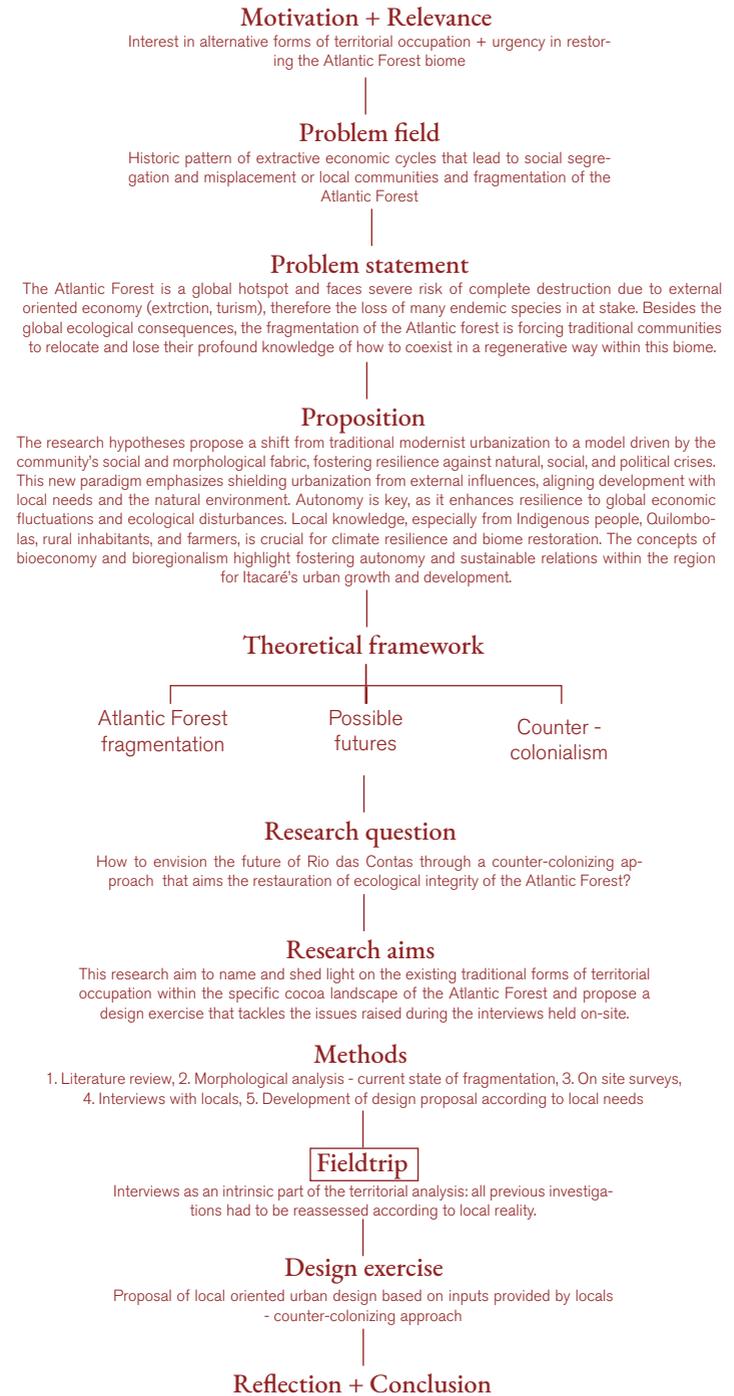
# 6. Methodology

The Interviews played a crucial role in the methodology of this research, bridging the gap between theoretical knowledge and the lived experiences of local communities.

The ethnographic approach, centered on hearing, observing, and learning from the locals, enabled me to develop a local design strategy, capable to enhancing the quality of local lives.

The interviews revealed a consistent desire for autonomy within these communities, challenging the colonialist structures of government. This insight suggested a dual-layered approach to territorial management, where local communities retain control over their lands, supported by government regulations to protect the environment.

In essence, the interviews were instrumental in shaping the research direction, providing a deep understanding of local needs and contexts, and fostering a design approach rooted in the lived realities of the communities. This methodology not only ensures relevance and effectiveness but also respects and empowers the local populations, aligning with the broader goal of ecological restoration and social justice previously set during the first parts of the research process.



# 7. Theoretical Framework

The theoretical framework of the research draws inspiration from Antonio Bispo's concepts outlined in the book "A terra dá, a terra quer" ("The earth gives, the earth wants", 2023). Antônio Bispo dos Santos (1959-2023) was a quilombola (member of a quilombo community) writer, poet, farmer, and he used to call himself "translator of knowledges," emphasizing the oral roots of knowledge sharing in the quilombola culture. The dichotomy between organic knowledge and synthetic knowledge is very present in his thinking, illustrating the historical suppression of organic wisdom. He was also a political activist, playing an important role in the fight for land ownership of the Quilombos and made a lot of effort to show the world the quilombola values and way of life.

Bispo departs from the concept of counter colonization, in opposition to the decolonization. In his understanding, decolonization is an effort to undo the scars of colonialism and therefore is only applicable for those who live under colonialist structures. He understands quilombos as a non-colonized structure of existing, where the

notions of sharing, circularity, confluence and ancestry are inherent to their way of life and existence in the world.

Counter-colonisation is to actively act against colonialism, for example, he states that naming is an act of colonization and therefore to counter-colonize the Portuguese language means to add words that counterpose other colonizing words:

"For example, if the enemy loves to say "development," we will say that development disconnects, that development is a variant of cosmophobia. We will say that cosmophobia is a pandemic virus and work to undermine the word "development." Because the good word is "involvement." To weaken sustainable development, we introduced biointeraction; for coincidence, we brought confluence; for synthetic knowledge, organic knowledge; for transportation, transfluence; for money (or exchange), sharing; for colonization, counter-colonization... and so on" (Bispo, 2023, p.14)

Bispo states that the quilombolas are 'sharers', meaning that everyone that holds a sense of be

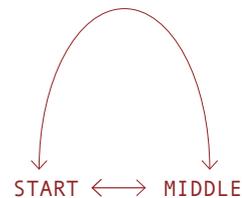
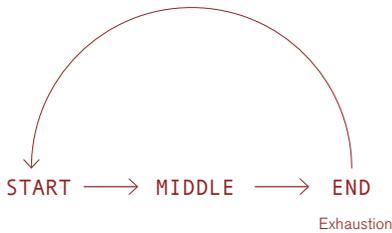
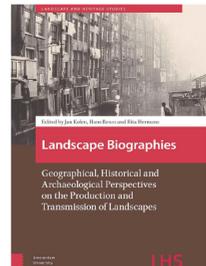
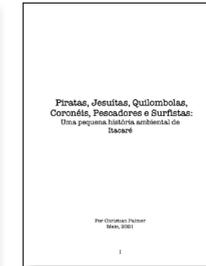


Diagram of the Concept of circularity of Antônio Bispo

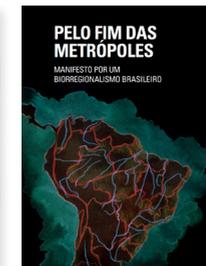
contra - colonialism  
how can the growth of Itacaré shift from global to local oriented?



Atlantic Forest fragmentation  
how did we reach this point?



possible futures  
how can concepts become spatial?



longing in their community becomes a sharer, because belonging means feeling a part of the environment. People therefore share their space with the same intention and value towards ecological existences as to other people in their community. He believes that land does not belong to people, and that people are the ones who belong to the land. This notion emphasizes the transformation from mere inhabitants to active participants in the ecosystem, fostering a profound sense of belonging and a holistic relationship with the environment, animals, and plants.

Circularity reflects the cyclical nature of societal processes—beginnings are intertwined with middles, forming an interconnected continuum. A crucial principle to his thinking is that local circumstances cannot be comprehensively assessed without delving into ancestral situations, emphasizing the necessity to analyse anything from the local to the global scale.

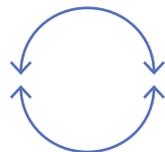
The concept of confluence emerges as a counterpoint to unification, highlighting the importance of diverse influences converging to shape a unique identity:



sharing



confluence



circularity



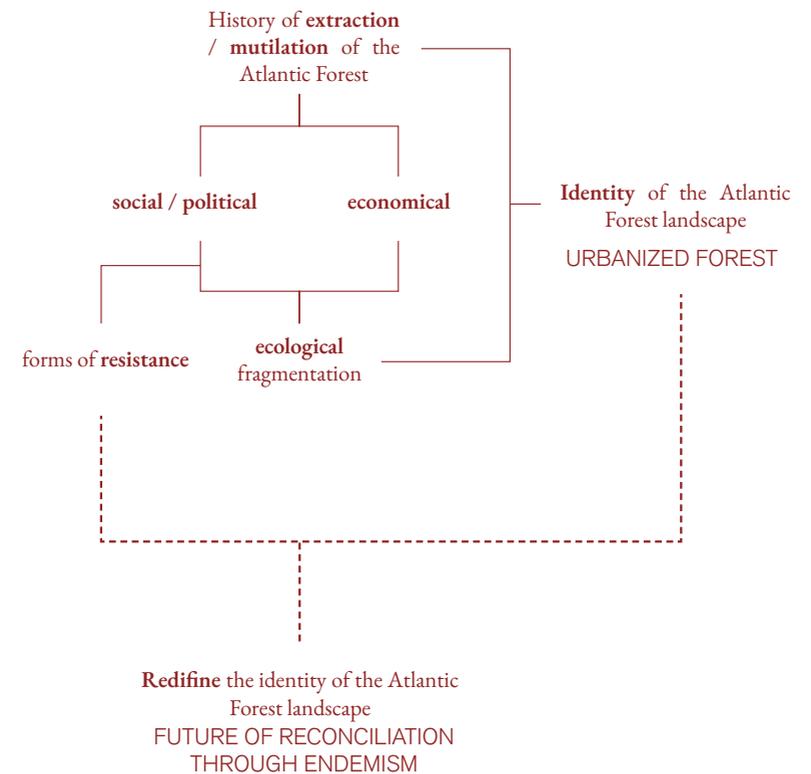
ancestry

*“A river does not cease to be a river because it converges with another river; on the contrary, it becomes itself and other rivers, it strengthens. When we confluence, we do not cease to be ourselves; we become ourselves and others – we thrive. Confluence is a force that thrives, that increases, that expands.” (Bispo, 2023, p.18)*

Bispo highlights that ancestry knowledge is passed on not only by humans but also by the Rivers, the nature and the animals. This knowledge is the core of their shared identity and is passed on orally and that is the main reason why it has been so easy to be neglected throughout history. He believed that living well through sharing and respecting Nature is the fight of the future. And native peoples are at the forefront of this debate.

The theoretical framework, grounded in these principles, seeks to unravel the intricacies of urbanization paradigms and proposes a shift towards a more resilient, locally driven model. This theoretical lens encourages a holistic examination of urban development, integrating local contexts, ancestral perspectives, and the critical need for a departure from colonialist ideologies.

## Research framework



“We arrive as inhabitants in any environment, and we gradually transform into sharers. In the quilombo, we are sharers, whether we were born here or have a sense of belonging. And when I talk about a sense of belonging to the quilombo, I mean a relationship with the environment as a whole, with the animals and plants.”

Antonio Bispo, 'A terra dá a terra quer' p.38

“The presence of other beings not only adds to the landscape I inhabit but also changes the world. This power of perceiving oneself as belonging to a whole and being able to change the world could be a good idea for education.”

Ailton Krenak, Futuro Ancestral p.103

“I have no doubt that confluence is the energy moving us towards sharing, recognition, and respect. A river does not cease to be a river because it converges with another river; on the contrary, it becomes itself and other rivers, it becomes stronger. When we confluence, we do not cease to be ourselves; we become ourselves and others – we thrive. Confluence is a force that thrives, that increases, that expands. That is the measure.”

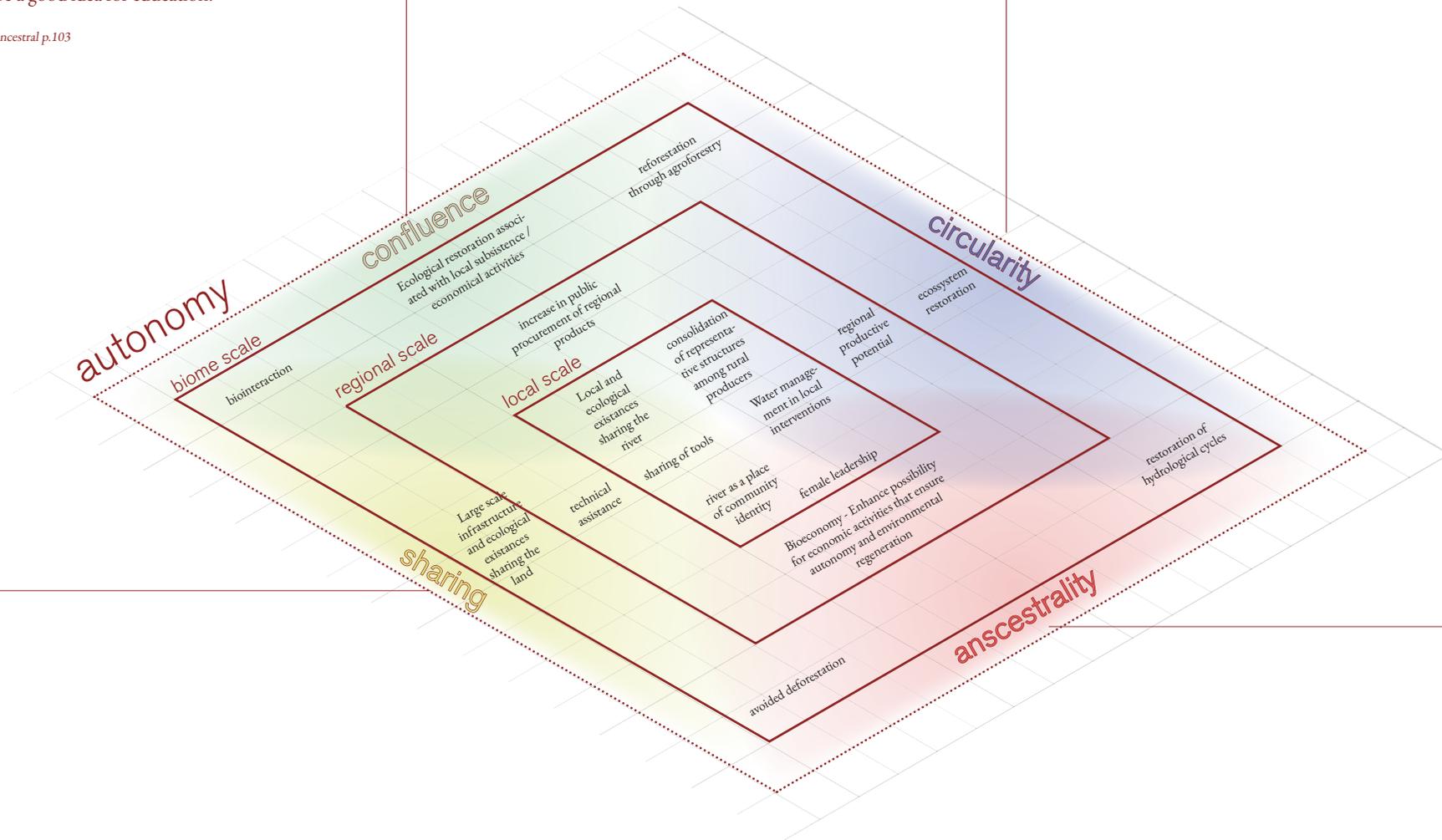
Antonio Bispo, 'A terra dá a terra quer' p.18

“We are people of trajectory, not people of theory. We belong to circularity: beginning, middle, and beginning. Our lives have no end. The grandparent generation is the beginning, the parent generation is the middle, and the grandchild generation is the beginning again.”

Antonio Bispo, 'A terra dá a terra quer' p.102

“The rivers, these beings that have always inhabited the worlds in different forms, are the ones who suggest to me that, if there is a future to be considered, this future is ancestral, because it was already here.”

Ailton Krenak, Futuro Ancestral p.11



# 8. Proposal

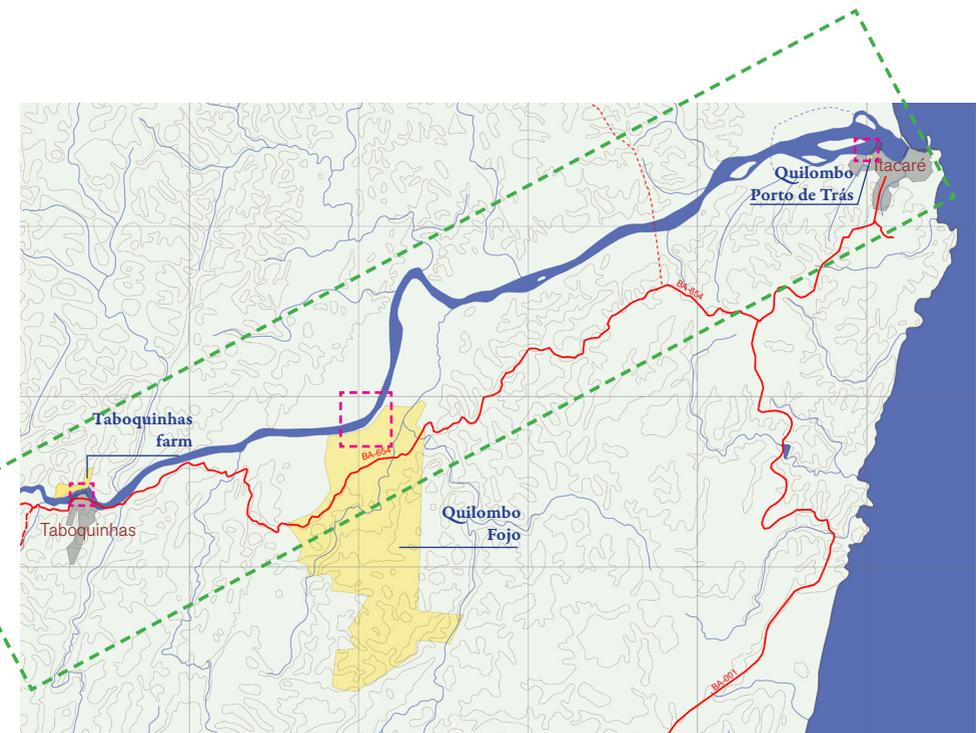
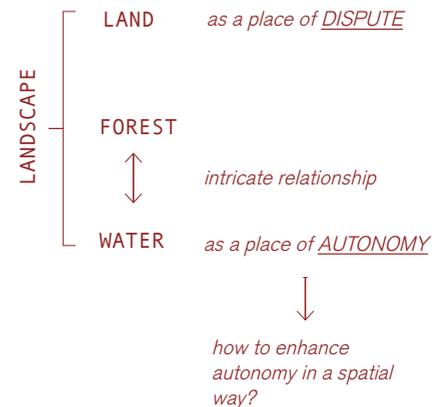
In the context of the cacao landscape, where land has historically been a place of intense dispute due to the patterns of land ownership in Brazil, this design proposal seeks to understand and leverage the autonomy that the Das Contas River represents for local communities. This scenario presents a unique design opportunity to envision ways to enhance this autonomy socioeconomically and from an identitarian perspective. The forest and the river share an intricate relationship, making it essential for all interventions to be symbiotic with both elements.

The idea of a floating module arose from a conversation with Darlan, the leader of Quilombo Porto de Trás. He asked for the design of a pier that could support fishing and social activities at the port. During a boat trip to Taboquinhas farm, it became clear how intensely local people use the river for canoeing and fishing. Additionally, a visit to Quilombo do Fojo highlighted how the community would greatly benefit from learning how to process cacao into derivatives and sharing the necessary infrastructure with other rural communities.

The river emerged as the natural framework for these small interventions, aiming to create a larger network that ensures autonomy and dignity for these communities while enhancing both their and the landscape's identity. The floating modules are envisioned as multifunctional platforms: piers for fishing and social gatherings, facilities for canoeing, and infrastructure for cacao processing. By situating these modules along the river, the design fosters a cohesive system that

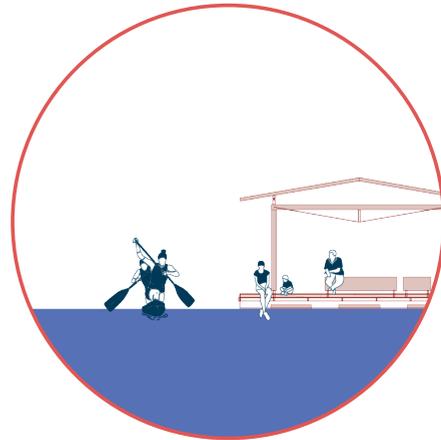
supports the ecological health of the river and the socio-economic well-being of the communities.

Through this approach, the design aims to establish interconnected nodes along the river that facilitate resource sharing, skill development, and community bonding. This proposal addresses the immediate infrastructural needs and fosters a deeper connection to the land and water, reinforcing the communities' identity and autonomy within the cacao landscape.



- AUTONOMY
- RESTORATION OF CULTURAL / SOCIAL IDENTITY
- RESTORATION OF LANDSCAPE IDENTITY ecological process scale

## 6.1 Design Principles



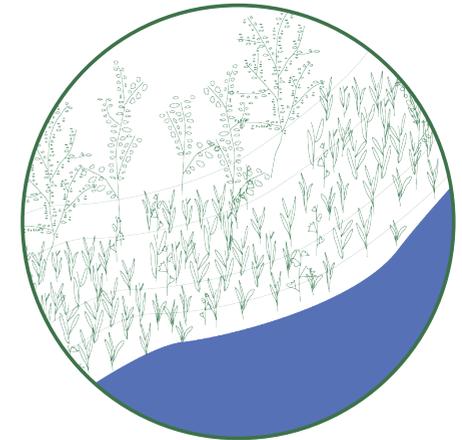
### RIVER AS A PLACE OF IDENTITY

Enhance cultural practices  
and leisure, restoration of  
the cultural identity of this  
landscape



### BIOECONOMY

Enhance possibility for  
economic activities that  
ensure autonomy and en-  
vironmental regeneration

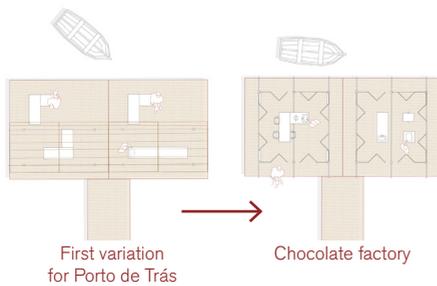


### ECOSSYSTEM RESTAURATION

Mangroves / Riparian forests  
/ Atlantic forest

# Floating Modules

I developed a floating module based on the pier I was asked to design by Darlan for Porto de Trás. I evolved the pier platforms into a module adjustable to local activities to support and intensify the use of the river, after concluding that the river plays a crucial role in the identity of these communities.

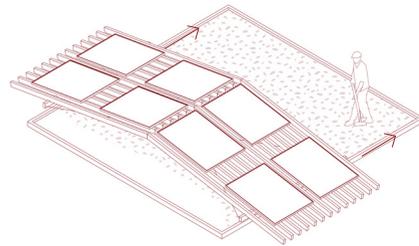


One variation aims to support fishing and sea-food collecting activities. In this use, the module provides shade for the shellfish cleaning procedure and a resting spot for the workers, improving their daily working conditions.

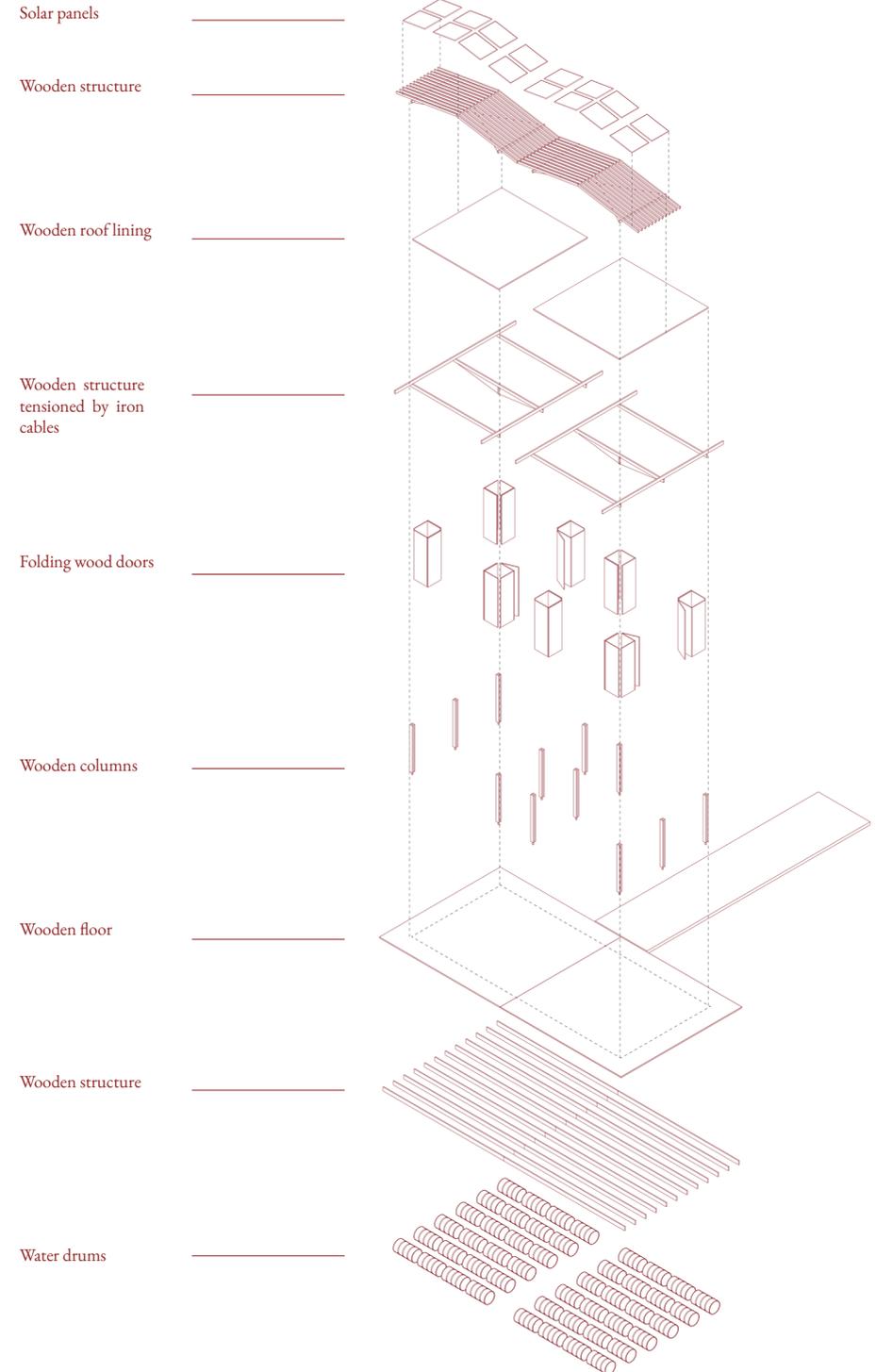
Another variation is a small chocolate factory. This module plays an important role in the economic autonomy of rural communities by providing the means for the rural community to process their products and benefit from the full value of their production. The idea is that these modules can travel the Das Contas River in a tool-sharing scheme where all communities benefit from this small-scale infrastructure. This variation is deeply based on the issues I gathered in my interview with Fojo's residents, where they told me about the lack of infrastructure to enhance

their agricultural production and maximize their underused workforce potential.

Other variations include a floating platform for knowledge sharing and local capacity building. People like Mr. Oswaldo can share their expertise and teach locals and tourists about sustainable practices such as Cabruca cacao production and the organic chocolate process. Additionally, the module supports the typical canoeing activity by providing athletes with a place to rest and fresh water to drink. These modules can reinforce the river's leisure potential and ensure it remains a place of identity for the local community.



Above: diagram showcasing the proposed retractable roof based on (below) local typology of Barcaças used to dry the cacao (image credit: <https://www.flickr.com/photos/fefreire/2605095545>)





### 1. Harvesting

Ripe cacao pods are harvested by hand, typically using machetes. The harvested pods are split open to reveal the cacao beans inside, surrounded by a sweet, white pulp.



### 2. Fermentation

Beans and pulp are scooped out of the pods and placed in shallow containers, often lined with banana leaves. The beans are left to ferment for several days (usually 5-7), during which the pulp liquefies and drains away. This process is crucial for developing the beans' flavor.



### 3. Drying

Fermented beans are spread out on drying racks or on barçaças. They are left to dry in the sun for several days to a week, reducing their moisture content from about 60% to around 7%.



### 4. Roasting

The dried beans are roasted at varying temperatures (typically between 120-175°C) for 30 minutes to 2 hours. Roasting further develops flavor and facilitates the removal of the shell. Roasted beans are cooled quickly to halt the roasting process.



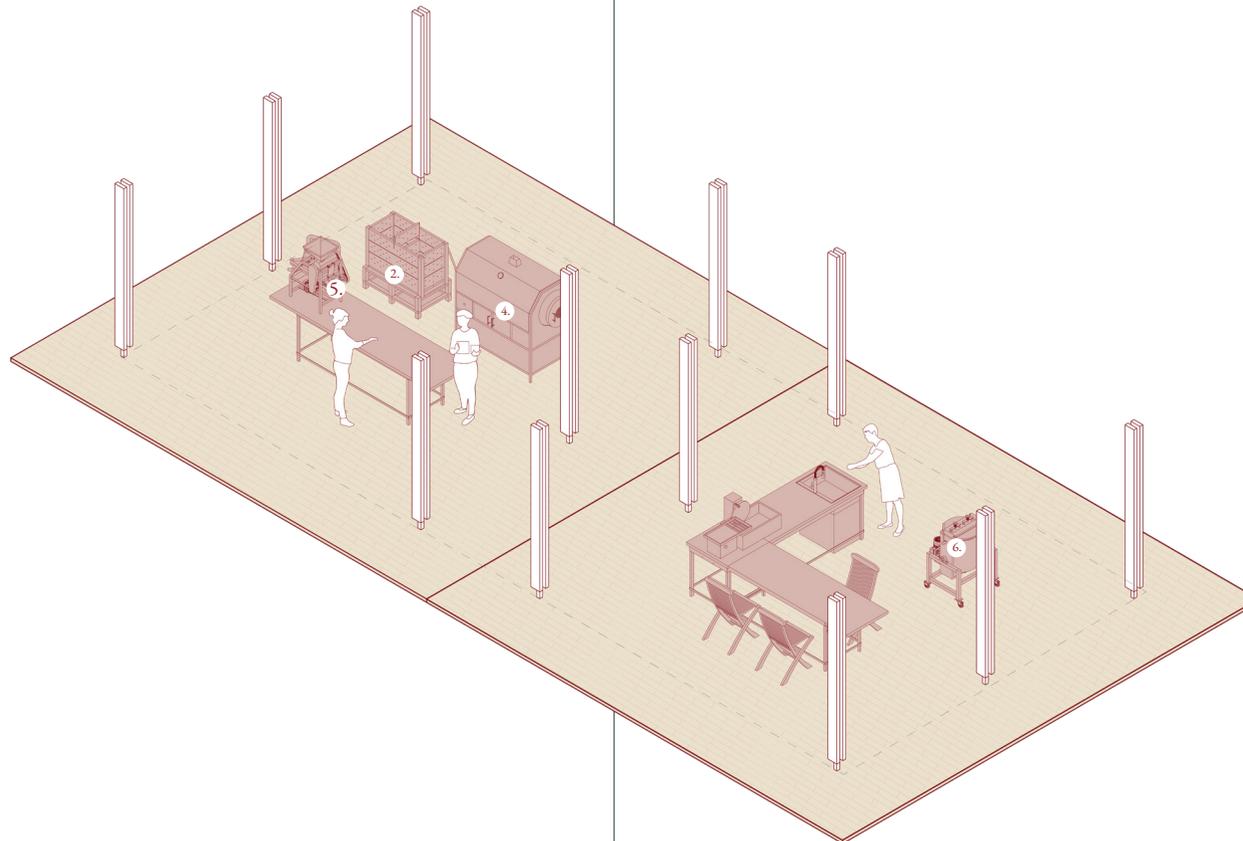
### 5. Cracking and Grinding

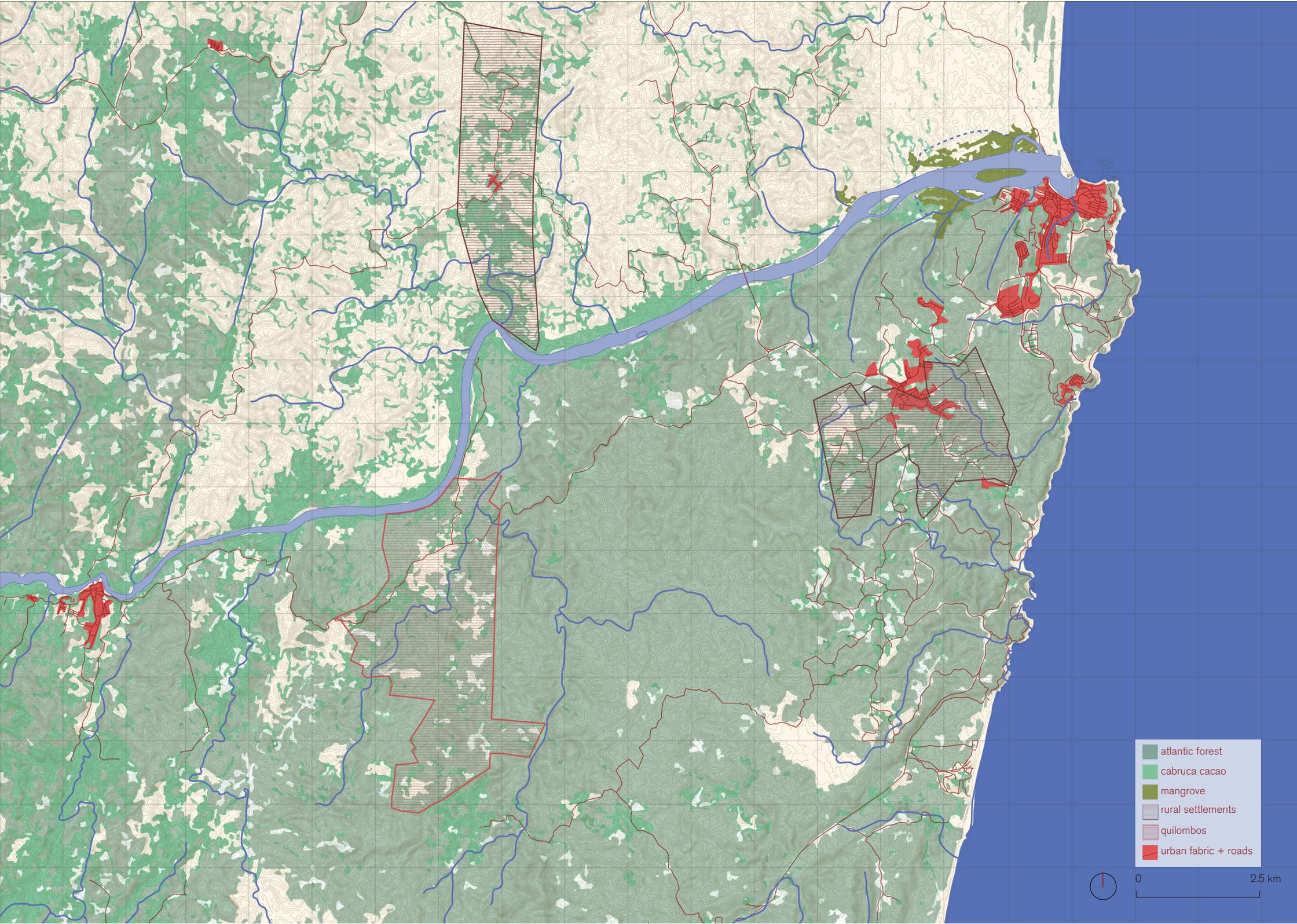
The cooled beans are cracked to break the shell and release the nibs (the edible part of the bean). The cracked mixture is winnowed, usually by a fan or machine, to separate the lighter shells from the heavier nibs. The nibs are ground into a thick paste known as cocoa mass or cocoa liquor. This process releases the fat within the nibs, known as cocoa butter.



### 6. Conching

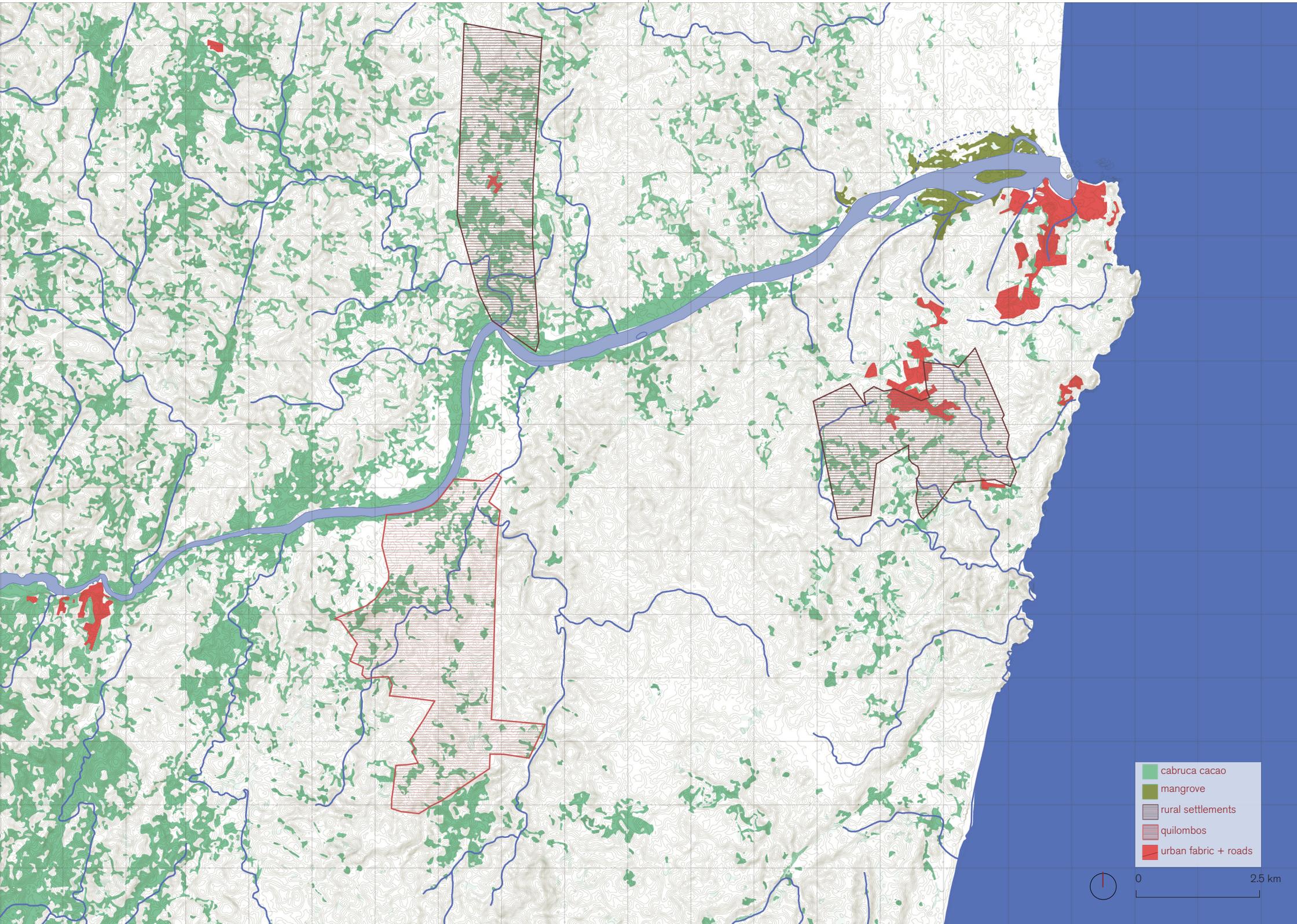
The refined chocolate mass is kneaded and aerated in a process called conching. This can last from several hours to several days, improving the flavor and texture. During conching, additional ingredients like sugar, milk powder (for milk chocolate), and more cocoa butter can be added. After this point the chocolate can be molded and colled.





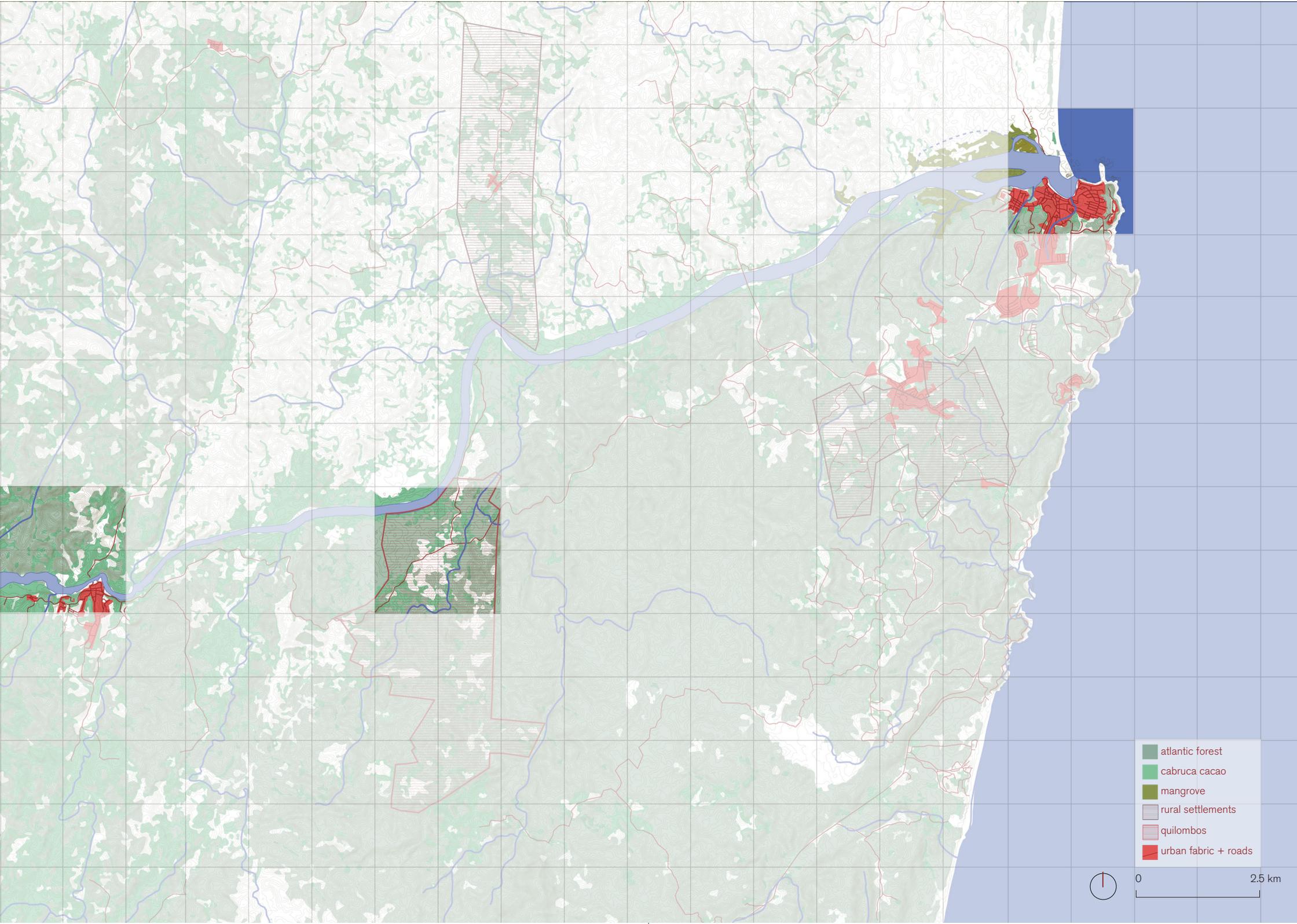
- atlantic forest
- cabruca cacao
- mangrove
- rural settlements
- quilombos
- urban fabric + roads



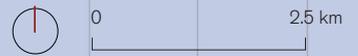


-  cabruca cacao
-  mangrove
-  rural settlements
-  quilombos
-  urban fabric + roads

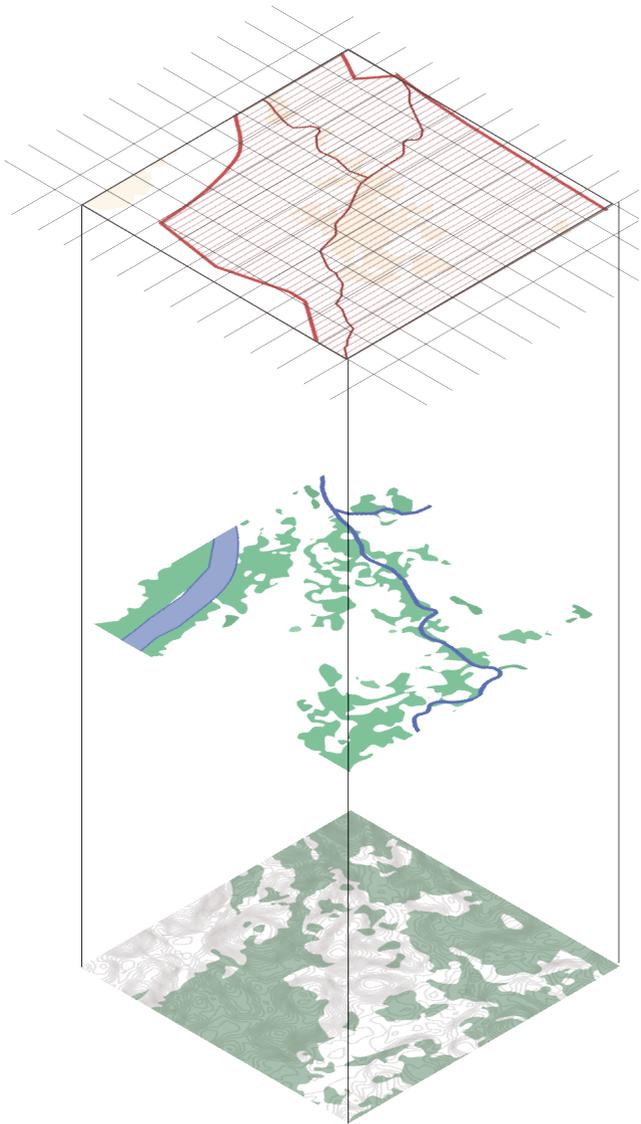




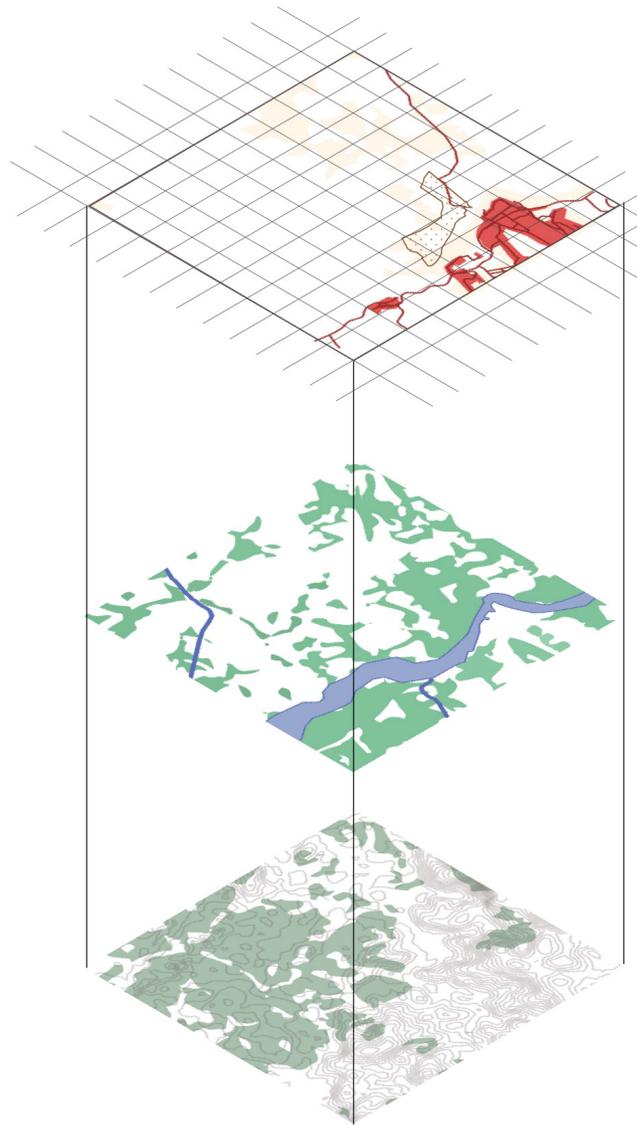
- atlantic forest
- cabruca cacao
- mangrove
- rural settlements
- quilombos
- urban fabric + roads



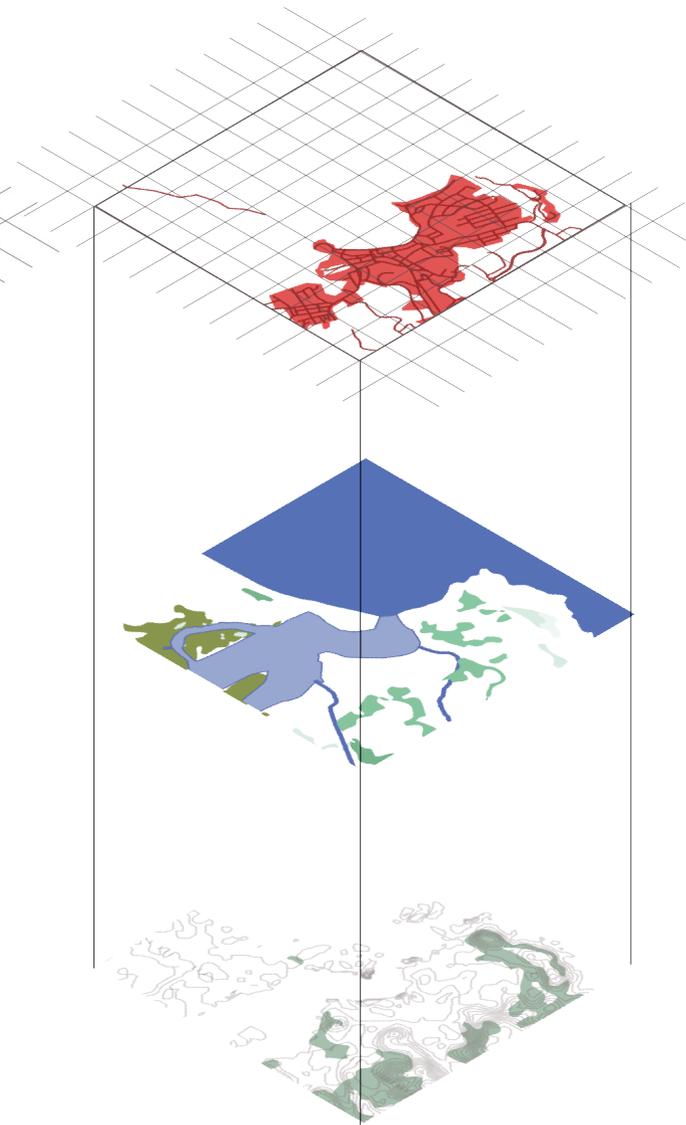
Fojo Quilombo



Taboquinhas



Itacaré - Porto de Trás Quilombo



human occupation

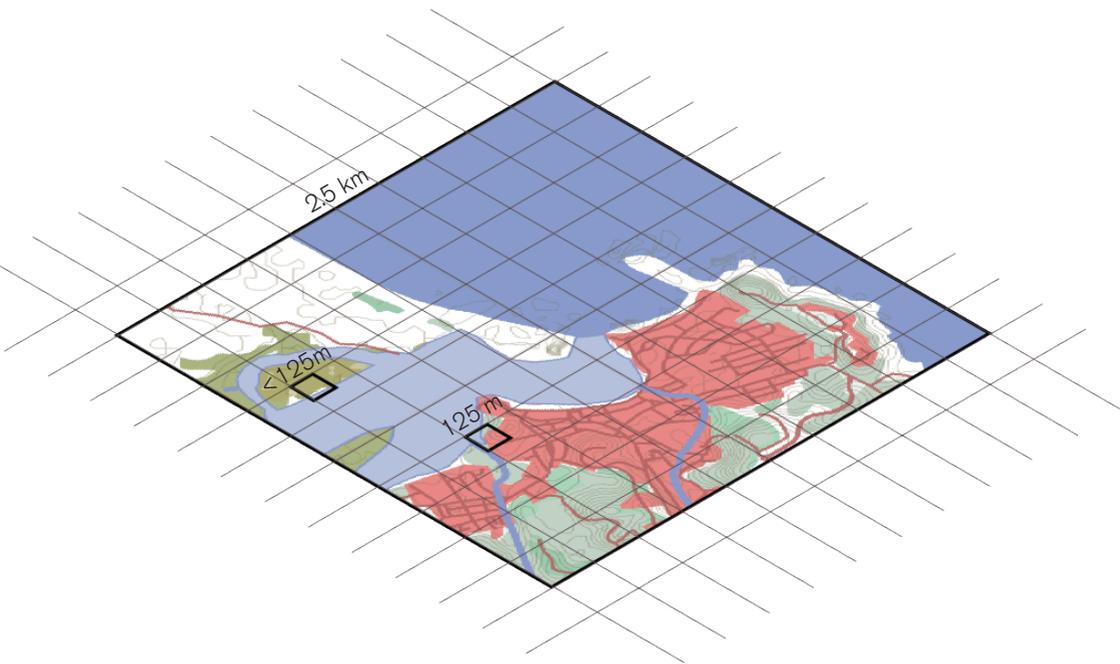
- deforested area
- quilombos
- urban fabric + roads
- taboquinhas farm

altered nature

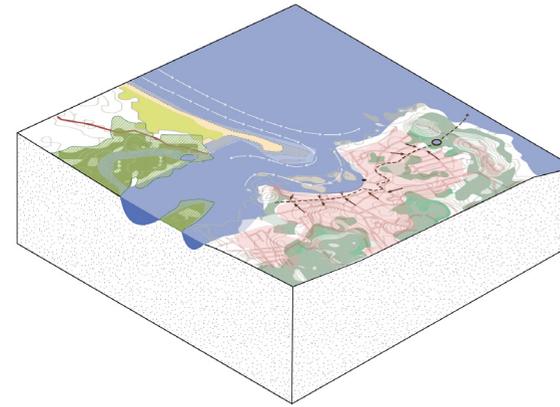
- water bodies
- cabruca cacao
- mangrove

ancestral nature

- atlantic forest

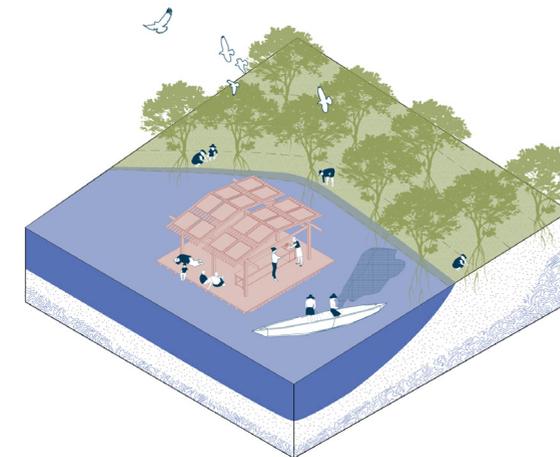


- atlantic forest
- cabruca cacao
- mangrove
- rural settlements
- quilombos
- urban fabric + roads

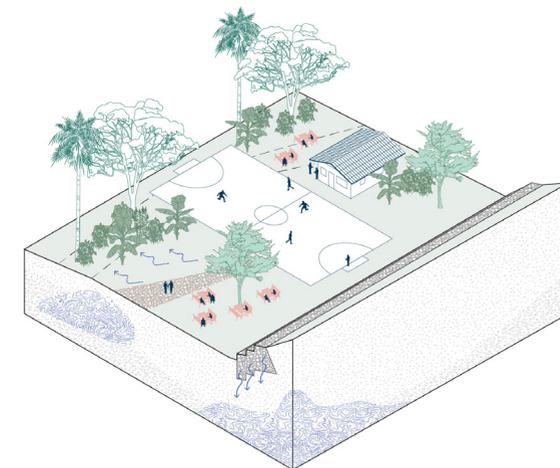


In this local scale, the aim is to restore the mangrove ecosystem, ensuring its balance and seafood production. By reforesting the riparian forest along the riverbeds in the lower part of the basin, especially in the Gongoji subbasin, and better managing the river flow speed and variations caused by the Funil Dam, we can observe a slow restoration of the estuary. The sandspit is beginning to regress, allowing saline water to better enter the estuary, which helps balance the mangrove ecosystem. Another crucial local intervention is to treat and redirect the sewage release, preventing water contamination.

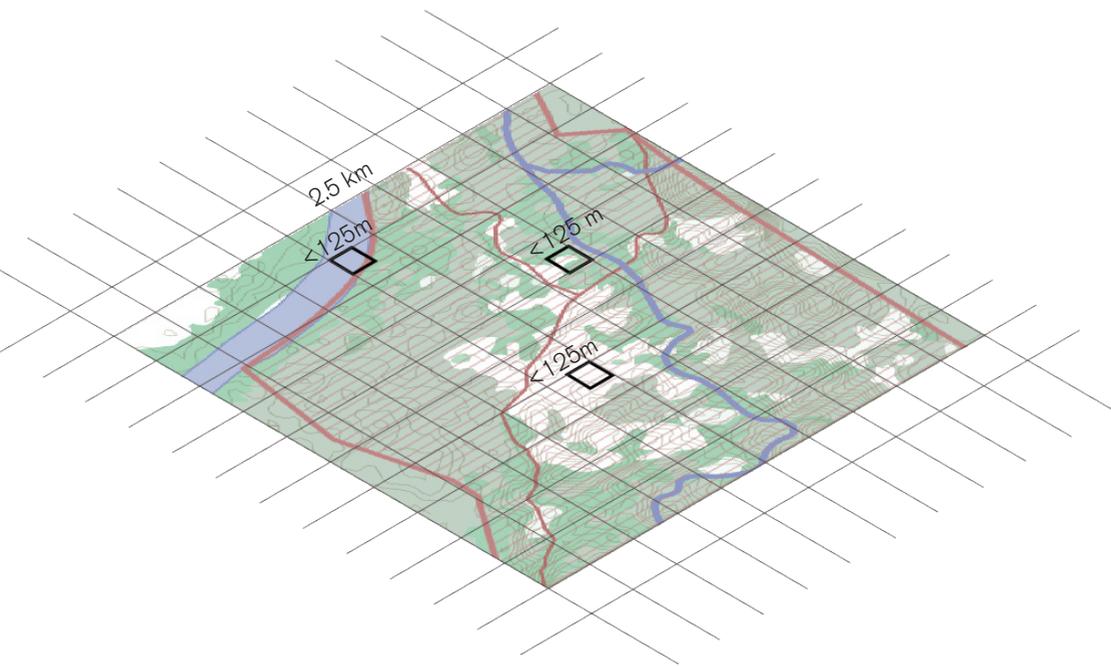
- current untreated sewage release
- sewage treatment station
- sewage collection
- restored and expanded mangrove



In this local scale, fishing and seafood collecting activities are supported by the floating module. The module, in this case, aims to provide shade for the shellfish cleaning procedure and a resting spot for the workers, thus improving their daily working conditions.



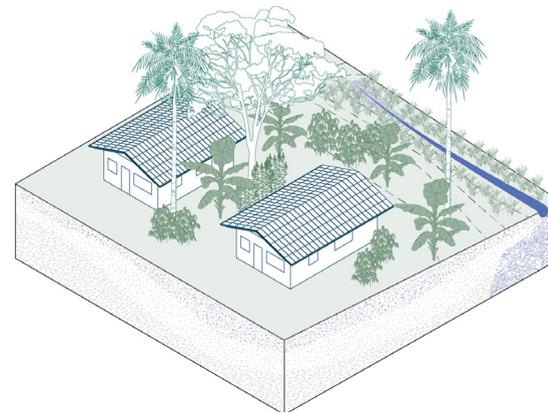
This local scale, an intervention was designed based on an interview with Darlan, a leader from Porto de Trás. He requested the design of a football field with an annex for a changing room and a space for barbecues and community gatherings. After visiting the site, it became clear that the grandstand had to perform a structural role in addition to its seating function due to the extreme instability of the terrain and the high risk of landslides. This was achieved by designing a gabion grandstand. Water management was a leading concept in the design of this local intervention.



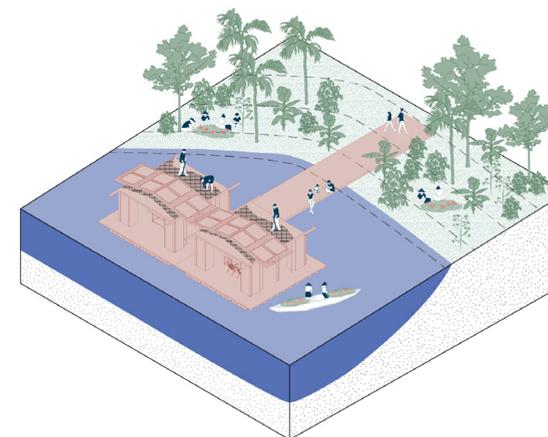
- atlantic forest
- cabruca cacao
- mangrove
- rural settlements
- quilombos
- urban fabric + roads



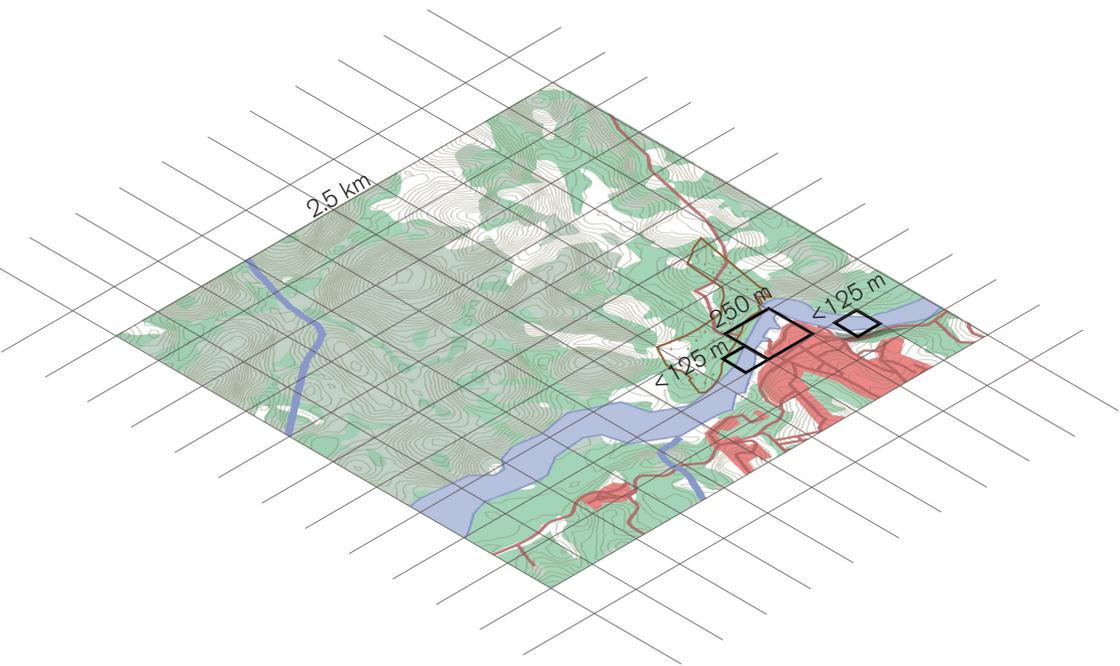
In this local scale the aim is to restore current deforested areas turned into pastures or monoculture fields into agroforestry managed by the Quilombo's community. The local species contemplated were: cacao, eucalyptus, gliricidia, corn, brazilwood, fuzzy ipê, massai grass and plantain (based on the research of Nascimento, Eduardo d'Avila, 2022)



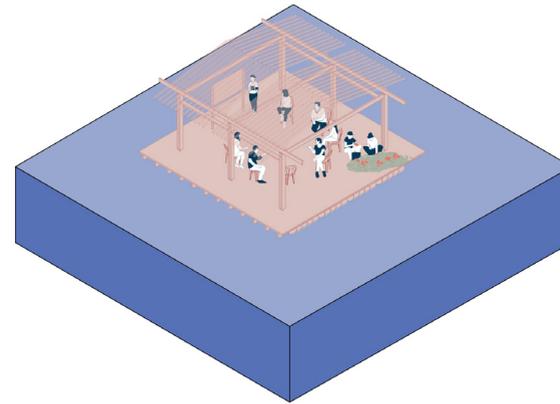
In this local scale we perceive that Fojo's Quilombo community already is occupying the land in a restorative system, each family has a small agroforestry on their backyard caring for soil quality and regeneration while reassuring a protection bufferzone to the riversprings.



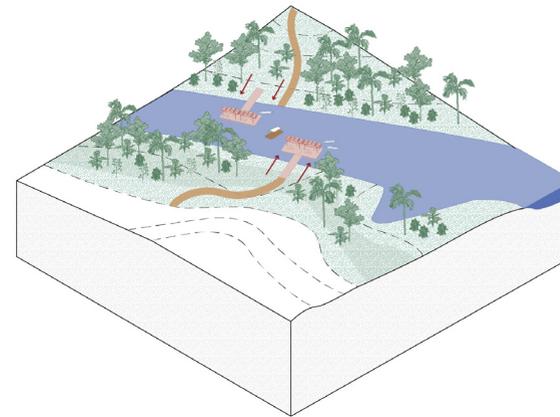
In this local scale, the module plays an important role in the economical autonomy of Fojo's rural community. This module was designed to be a small chocolate factory, providing the means for the rural community to process their products and beneficiate from the integrity of their value. The idea is that this modules can travel the Das Contas River in a tool sharing scheme where all communities beneficiate from this small scale infrastructure.



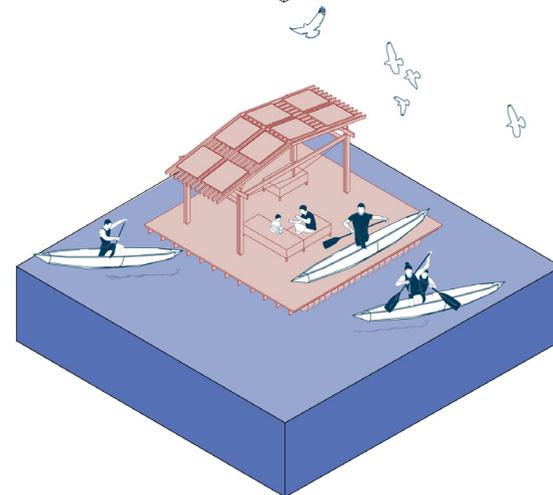
- atlantic forest
- cabruca cacao
- mangrove
- rural settlements
- quilombos
- urban fabric + roads
- taboquinhas farm



In this local scale the module works as a floating platform for knowledge sharing and local capacitation. People like Mr Oswaldo can share their expertise and teach locals and tourists about the sustainable practices such as the cabruca cacao production and the organic chocolate process.

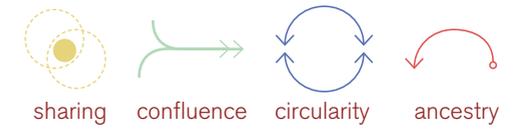


In this local scale the aim is to uncover current impermeabilized riverbeds and restore the riparian forests. The use of the piers and modules is to shift human occupation from the riverbeds to inside the river, providing space for the ongoing activities such as the small landing points for the local public ferry. These floating pocket squares can also be attractive spots for tourists to visit Taboquinhas farm and other relevant sites of the cacao landscape.

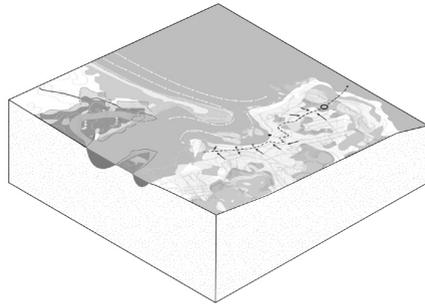


In this local scale, the module supports the very typical canoeing activity. Providing the athletes a place to rest and fresh water to drink, this modules can reinforce water's leisure potential, and ensure the river as a place of identity for the local community.

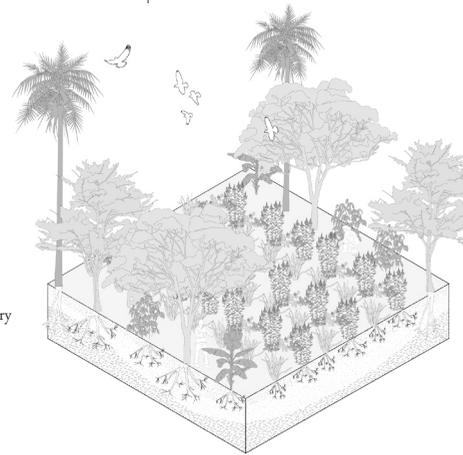
# local autonomy



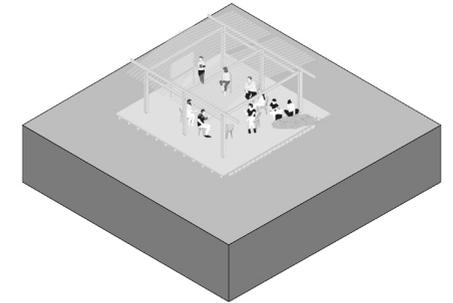
Restoration of hydrological cycles



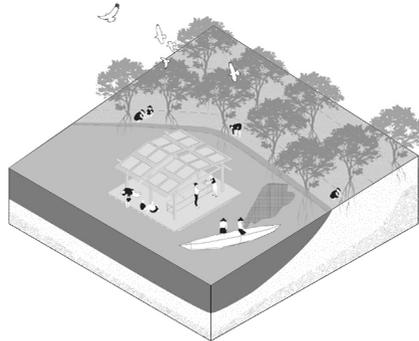
Soil regeneration through agroforestry practices



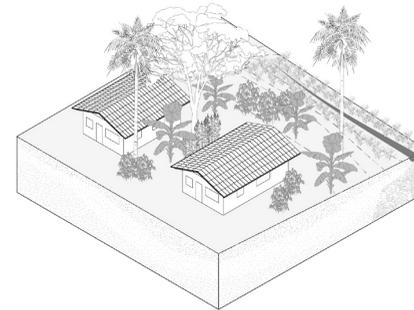
Local knowledge is transmitted orally through lived experiences



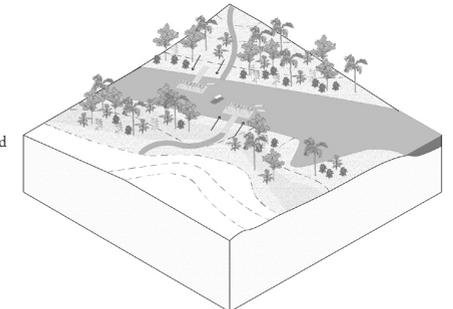
Ecological restoration associated with local subsistence



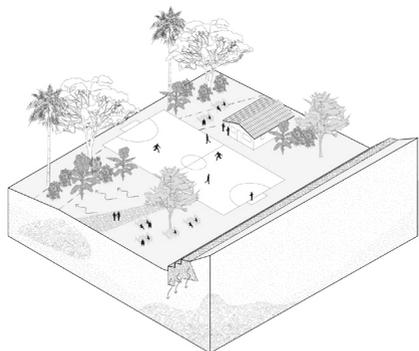
Local and ecological existences sharing the land



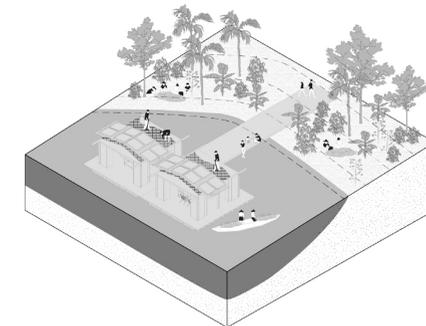
Local infrastructure and ecological existences sharing the river



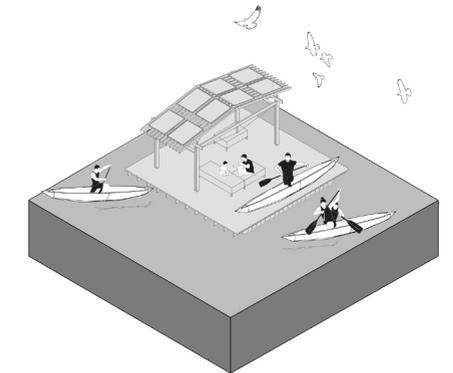
Water management in local interventions ensures aquifer recharge and resilience during flooding events.



Ecological restoration associated with local subsistence



Local and ecological existences sharing the river









## 9. Conclusion

Being an urbanism student in Europe while having spent almost my whole life in São Paulo poses many ambiguities. Through the first year of the Master's program we are immersed into the Northern European context having to design for very specific urban metabolisms. Northern European cities in general have targetable issues that stand out from a planned functioning urban network base. The urban disfunctions are clear which facilitates understanding the roots of the problems, and aiming to solve them can also translate into an objective design process. I learned immensely, specially to deal with uncertain future scenarios posed by climate crises. But every time I tried to imagine applying the methods and technical knowledge to my home context I would paralyse. When it comes to urban contexts in Brazil, nothing is clear because the disfunctions are so deep and interconnected that tracing the problems roots is almost impossible. Politics, social segregation and power dynamics cross all urban spheres and deeply interfere in urban planning. Cities are built fast and unplanned, result of a capitalist economy. In São Paulo, there are more than 300 rivers suffocated beneath concrete that holds the largest transportation infrastructures on top. Natural features are ignored, and people are densely concentrated in a segregated structure:

*“Our technology to produce poverty is more or less like this: we take those who fish and harvest native fruits, remove them from their territory, and throw them into the outskirts of the city, where they will never be able to catch a fish to eat*

*again because the river that passes through the neighborhood is polluted.” (Krenak, 2022)*

This research started with a personal restlessness to do the exercise of applying to the Brazilian context the knowledge and notions I was exposed to at TUDelft. We delved so much into the topic of climate resilience and regenerative practices in the European context, and I decided to embrace the challenge of deploying these concepts in a specific Brazilian landscape. I chose initially the Atlantic Forest Biome, because this is the most mutilated stripe of the Brazilian territory, and I grew up within it. One of the areas that is still quite preserved of the forest is the Cacao landscape in the south of Bahia. I immediately chose this spot after learning about the Cabruca method, because it intrigued me how an extractive economic practice could be responsible for avoiding deforestation. So, I landed on the city of Itacaré, and in a first moment concentrated into understanding why it was rapidly growing so much over the last decades starting the typical urbanization pattern of coastal Brazilian cities, that grow unplanned and result into urban informalities and social displacement and impoverishment.

Delaying Itacaré's history showed me that social resistance is intricate to this landscape, and soon I understood that this is mainly why the forest is still largely preserved in these regions. Quilombolas, rural settlers, small rural producers and indigenous people are safeguarding Brazil's natural wealth while being historically neglected by public authorities and excluded from territorial planning. The history of Itacaré can illustrate

well how on every chapter these communities are denied of their basic rights and how the Atlantic Forest is threatened by a different extractive cycle, and yet, they both resist.

It became clear to me that I wanted to centre my research around these powerful resistance. This meant having to understand how these communities function, and over which values they build their bases. Counter-colonisation is to actively act against colonialism, and I began to wonder how it could become the guiding force behind territorial planning. The research question was then formulated: How to envision the future of Rio das Contas through a counter-colonizing approach that aims the restauration of ecological integrity of the Atlantic Forest?

First it became necessary to reflect deeply and elaborate what meant a counter colonizing approach. Part of the quilombola and indigenous way of life departs from the notion that people belong to their environment on the contrary to the capitalist understanding that people can own a piece of land. Therefore, a counter-colonizing approach meant that design should always depart from local inputs and context. I soon understood that everything I could imagine proposing for this place had to be justified by a local need and had to be invented to respond the local context. I do not belong to this context; hence, my comprehension of this place is limited. The fieldtrip was crucial, because it gave me the opportunity to talk to those who belong to this landscape and understand some of its many nuances. They explained to me their struggles but more impor-

tantly, they gave me hints of what they desire for the future and what their communities would need to achieve it. They explained to me how ecological fragmentations and ecosystems disfunctions caused by large infrastructure affect their production and subsistence. During the trip I understood that as an urban planner one of the most important analyses should be done by the act of hearing, observing and learning from those that belong to the places we aim to interfere. This ethnographic methodology allowed me to reach a counter-colonizing approach for the design exercise that aimed to improve the life of local existences: *“How can we break through the walls of cities? What possible implications could exist between human communities living in the forest and those enclosed in metropolises? Because if we can ensure that forests continue to exist in the world, there will be communities within them.” (Krenak, 2022 p.64)*

Hearing the interviews back home it became clear that what these communities most aimed in every claim was autonomy. As Bispo says: *“Any government of a colonialist state will be a colonialist government. It is necessary to counter-colonize the organizational structure. (Bispo, 2023 P.74)”*. That raised the possibility that territorial management could also be done in a parallel autonomous way that should ensure that the local communities are in control of its leading. That does not mean to unload the responsibility of governments to ensure the means of dignity of their populations and provide regulations to protect of the environment. But there could

be another layer, one that guarantees that those communities can manage their territory because as they have ancestral ties to it, they are the ones who hold the knowledge to ensure the local integrity of that specific landscape. Given the complexity and dependence of the land issues in the region, the river emerged as the possible space for these transformations. They aim to ensure the right of autonomy of these communities and restore the Atlantic Forest biome at local scales.



## 10. Reflection

The motivation for this research came from my previous graduation project in 2018 in São Paulo, my hometown. I studied an urban quilombo located in the heart of São Paulo. Quilombos are territories founded by freed enslaved people, either fugitives or those who purchased their freedom. These territories often occupy areas neglected by formal occupation due to difficult morphological conditions, such as being flood-prone or very steep. These communities rely on ancestral knowledge and view the natural environment as integral part of their communities, they resist despite their lack of formal acceptance. My studies at TU Delft deepened my interest in environmental management as part of territorial planning. For this thesis, I decided to study rural quilombos in southern Bahia, Brazil, to understand the intricate relationships between these communities and the preservation of the Atlantic Forest.

The research initially focused on cacao production, which has significantly influenced the landscape and society. I conducted a detailed historical study of Itacaré and the Das Contas River, uncovering social nuances that led to the city's current state. Infrastructure, such as roads and dams, played a decisive role in the biome's future and the lives of those intertwined with the natural environment.

Most of the Brazilian population lives in informal urban settlements with limited access to basic infrastructure. Cities grow disconnected from minimal infrastructural supply, a paradigm intensified in touristic coastal contexts with his-

torical threads of labour exploitation and lack of access to education.

I chose the Transitional Territories studio for my thesis research due to its compelling focus on the deconstruction and reconstruction of physical, ecological, and political relations in complex urban contexts. The studio's hypothesis that territories are shared projects, irrespective of scale, resonates with my intention to dwell into southern Bahia. The methodology, centred on revisiting extraction cycles and urbanization processes, provides a comprehensive approach to understanding the social and environmental scars left behind, defining the current state of the biome, its inhabitants, and their ways of life.

Today, Itacaré relies economically on tourism, which has led to environmental neglect and unplanned urban growth. Tourism treats space as a product, leading to urban infrastructures primarily designed to serve tourists and neglecting local needs and environmental impacts. Many locals have abandoned sustainable subsistence activities like fishing and agroforestry due to ecological fragmentation caused by human-made infrastructure.

The subsequent research phase, focused on exploring regenerative economic activities like the practice of Cacao Cabruca, aligns with the studio's emphasis on designing alternative forms of coexistence and care in dynamic and fragile geographies. Cabruca method is the planting of cacao under the Atlantic Forest shade, meaning that is an economic activity that doesn't contribute to deforestation. Investigating the local benefits

of such practices and their broader impact on a national and global economic scale, the research aimed to provide valuable insights for designing interventions that redirect ongoing urbanization toward regenerative economic practices and foster healthier, more inclusive urban environments. This interdisciplinary approach underscores the holistic perspective essential for addressing the complex challenges of urbanization in the Atlantic Forest.

Restoring the Atlantic Forest's ecological fragmentation requires centring discussions on local communities and their extensive knowledge. Therefore, I based my theoretical framework on authors with roots in these communities, emphasizing experiences and worldviews that contrast with Western scientific approaches. The limitations caused by the oral transmission of their knowledge made my site visit crucial. During my visit, I interviewed four people and met so many others that welcomed me in their local context. I learned that their biggest challenges include neglect from formal governance, lack of land ownership, and insufficient credit for improving agricultural methods. They also lack technical knowledge and infrastructure to process their produce. On the urban Quilombo of Itacaré (Porto de Trás) the main issue was the fragmentation of the mangrove threatening seafood reproduction and forcing the fisherman community to shift to tourism-related work.

Upon returning from Itacaré, I continued my research and began my design, questioning the role of urban planners when the aim is to move

away from current urbanization paradigms. Can urbanism be community-based? Can we adopt a more holistic approach to territorial planning centered on local needs?

Restoring a fragmented biome requires a deep understanding of the landscape's natural and morphological components and their historical alterations. While technical research has its limits, those living in and dependent on these landscapes possess profound knowledge. Indigenous people, Quilombolas, rural settlers, and local farmers must be at the centre of discussions on climate resilience and biome restoration. Their knowledge encompasses human existence within the biome and offers creative economic solutions for coexistence.

These questions led me to rethink the scale of urban design. After the analysis stage, I realized that design should start at the local scale. What are the limits of the local scale? The scale of each intervention was determined by the issues raised in interviews. Each claim and challenge were analysed at the appropriate scale (that could be river-basin, regional, local...) after tracing the roots of problems and understanding their implications on the landscape, the aim was to address them into suitable local actions.

The research hypotheses propose a fundamental shift in the urbanization paradigm, moving away from the traditional modernist vision of progress shaped by external forces and economic competition. Instead, the focus is on a new paradigm where territorial planning is driven by the social and morphological fabric of each landscape. This

transformative approach aims to cultivate a resilient form of urbanization capable of effectively navigating natural, social, and political crises.



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## 12. Appendix Interviews

The interview transcripts have been excluded from this public version of the thesis booklet to protect the privacy of the participants. Please contact the author if you have a research interest in the interview content.

