

## ***The Oil Industry in the Amazon: and its Links to the Territorial Transformation of Coari - AM***

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### **Abstract**

The Brazilian Amazon presents a diversity of interpretations. This article will address an analysis of the municipality of Coari, in the state of Amazonas, which is characterized by having gas and oil production within its territory as a fundamental element in the base of its economy, influencing the relationship with the sociocultural and political-economic processes that develop there. By spatially delimiting this research, it situates itself in a lived space-time marked, above all, by verticalities and by exogenous development processes that reinforce its subalternity and amplify social inequalities. The central object of this article will be to analyze the territorial reconfigurations, both rural and urban, that occurred in Coari-AM following the implementation of the oil industry in the municipality. To this end, it is epistemologically anchored in the theory of territories by Milton Santos and researchers who address this theme, such as Rogério Haesbaert, Ruy Moreira, Bertha Becker, Arilson Favaretto, and Eliseo Sposito; therefore, the concept of territory will be fundamental. In addition to analyzing the historical paradigms of capitalism in the Amazon, it considers the establishment of the oil industry as an economic enclave in the Municipality of Coari, after gaining access to oil royalty resources.

**Keywords:** Amazon, Territory, Coari-AM.

**La industria petrolera en la Amazonía: y sus vínculos con la transformación territorial de Coari - AM**

### **Resumen**

La Amazonía brasileña presenta diversas interpretaciones. Este artículo abordará el análisis del municipio de Coari, en el estado de Amazonas, que se caracteriza por la producción de gas y petróleo en su territorio como elemento fundamental de su economía, lo que influye en su relación con los procesos socioculturales y político-económicos que allí se desarrollan. Al delimitar espacialmente esta investigación, se sitúa en un espacio-tiempo vivido, marcado,

sobre todo, por las verticalidades y por procesos de desarrollo exógenos que refuerzan su subalternidad y amplifican las desigualdades sociales. El objetivo central de este artículo será analizar las reconfiguraciones territoriales, tanto rurales como urbanas, ocurridas en Coari-AM tras la implantación de la industria petrolera en el municipio. Para ello, se basa epistemológicamente en la teoría de los territorios de Milton Santos e investigadores que abordan este tema, como Rogério Haesbaert, Ruy Moreira, Arilson Favaretto y Eliseo Sposito; por lo tanto, el concepto de territorio será fundamental. Además de analizar los paradigmas históricos del capitalismo en la Amazonía, este estudio considera el establecimiento de la industria petrolera como un enclave económico en el municipio de Coari, a partir del acceso a los ingresos por royalties de la petroleras.

**Palabras clave:** Amazonia, Territorio, Coari-AM

## 1 Introduction

This text is based on an approach to Coari, analyzing the changes that occurred in the territory of the municipality after Petrobras began exploring for oil in the region. Our objective is to understand how these changes affect the local social and spatial dynamics, analyzing the interferences in the lives of the residents, and seeking to highlight the economic, social, cultural, and environmental impacts caused by oil royalties. Different actors are mobilized in this study, such as the riverine populations, international oil markets, local commerce, the urban population, and the transformations that occurred in the spatial organization and society of Coari.

In the present research, the methodology utilized a Marxist approach and a critical perspective. The first task was to clearly analyze the problem—in the case of Coari/AM, the socio-spatial alterations due to the implementation of the oil industry—and thereby understand society as a social system in which the mode of production (social relations of production; productive forces) conditions the political, social, and cultural dynamics.

The methodological procedures involved triangulation; triangulation is understood here as a procedure that combines different data collection methods, distinct populations (or samples), and a specific theory at different points in time to consolidate conclusions regarding the investigated phenomenon.

To conduct this study, I relied on the regional development approach from the perspective of territory and human territoriality. My goal was to understand how this concept was constructed throughout history, recognizing from the beginning that there are essential characteristics in this process of epistemological formation. Among these are the processes of spatial appropriation and domination, power relations, symbolic-cultural identities, contradictions and inequalities, differences and changes, as well as the permanencies and networks of circulation and communication, including the environment, both internal and external to human beings.

Given the context of big capital taking over the territory of Coari, on the Urucu River, to explore for oil and gas, this study shows that urban and rural spaces were heavily impacted. Among the multiple results found, it became clear that capital in the region contributed to the expansion of social vulnerabilities. By failing to consider the "voices of the forest" and the agency of residents and traditional peoples in general, it ultimately promotes predatory exploitation without social development, as concluded at the end of this research. Thus, this study is of significant importance

to the residents of Coari and their representative entities, pointing toward possible strategies for formulating public policies.

## 2 Historical Aspects Influencing Territorial Formation in the Municipality of Coari - Amazonas

According to Soler (2009), Coari's society is mostly composed of riverine people who have little political participation. An important factor in the formation of this structure is the so-called *Coronelismo de Barranco* (Riverbank Bossism). This system, present in the Amazon, refers to local leaders—the colonels—who were large landowners and commanded the region, following a tradition inherited from the Portuguese colonial period. Some historians have even referred to them as feudal lords, as they controlled families, slaves, workers, and henchmen. In the Amazon region, these colonels acted as a bridge between the rubber estates and the *casas aviadoras* (supply and credit houses), connecting the Central Province to villages, settlements, and cities. Coari did not deviate from this rule. According to Archipo Góes's book "Nunca mais Coari: a fuga dos Juramaguas" (2016), the two major representatives of this colonel politics model in Coari were Alexandre Montoril and Deolindo Dantas. Furthermore, they were responsible for transporting products to the rubber estates and were called "commanders," even without having officially received this distinction.

Following the decline of rubber exports in the Amazon at the end of the 1920s, from the 1930s until the early 1980s, the municipality's primary economic activities were centered on the primary sector. Most producers resided in the floodplain (*várzea*) areas, where agricultural production was seasonal, conditioned by the rising and falling of river levels. Producers on the uplands (*terra firme*) were predominantly large landowners, a typical and common condition in the Amazon region. In upland areas, cattle ranching and annual crop cultivation prevailed; whereas in the floodplain regions, production was based on short-cycle crops.

Coari played a relevant role during this period, especially between the 1930s and 1980s. The municipality was an important collection center for Brazil nuts (*Bertholletia excelsa*), representing the region's main extractivist product, as well as for rosewood (*Aniba spp.*), rubber (*Hevea brasiliensis*), hardwoods, malva (*Hibiscus spp.*), andiroba (*Carapa guianensis*), sova, pirarucu (*Arapaima gigas*), and other natural resources.

During the period between 1930 and 1940, the so-called local political elite was consolidated in Coari. On one side, Mayor Alexandre Motoril, linked to the Social Democratic Party (PSD) established by Getúlio Vargas, represented the largest portion of the urban elite, designated as the "middle class," which frequently dominated political decisions and held economic influence. On the other side acted the political leader Deolindo Dantas of the National Democratic Union (UDN), a party that represented the agrarian elite, welcomed dissidents from the political spectrum, and included representatives of the colonels. Both forces shared common interests, predominantly of a political and economic nature.

In the Amazon region, insertion into the globalization process of industrialization occurred through the exploitation of rubber, mineral, and forest resources. With the aim of promoting development alternatives for the Amazon, the

Plan for the Economic Valorization of the Amazon was instituted by the 1946 Constitution. Its actions began in 1950, coinciding with the inauguration of President Getúlio Vargas and Celso Furtado's arrival in the government.

In 1952, Vargas notified the National Congress of the completion of studies and the drafting of a bill, later enacted as Law No. 1,806, sanctioned on January 6, 1953, which established the Amazon Economic Valorization Plan. Article 22 of this legislation created the Superintendency of the Amazon Economic Valorization Plan (SPVEA). During the military governments, this institution was replaced by the Superintendency for the Development of the Amazon (SUDAM). Both entities adopted a developmentalist approach aimed at the region's economic transformation, the strengthening of border areas, and the integration of the Amazonian space into the national context.

Starting in the late 1950s, the period of developmentalist projects began in Coari; the Bank of the Amazon established its branch, inaugurated on September 25, 1956, and in the following decade, the Bank of the State of Amazonas (BEA) branch was established on November 6, 1968, with the objectives of financing the extraction of forest products and family agriculture.

From the 1980s until the mid-1990s, banana (*Musa spp.*) cultivation stood out as the main economic activity due to high market demand in Manaus. However, in the late 1990s, banana plantations in Coari were severely affected by the Black Sigatoka disease, introduced via the borders with Colombia and Peru, resulting in the destruction of most crops (Gasparaotto, Pereira, 2000).

With the decline of banana production and the arrival of the oil industry in Coari in the late 1990s, employment and income generation in the municipality became concentrated in the City Hall. According to Soler:

Considering that the population in 2005 was 84,309 inhabitants, it is observed that a significant percentage of 8.5% of people were employed at the Coari City Hall (7,000 civil servants). Of these, only 473 people had entered through a public civil service examination; that is, more than 6,000 civil servants did not have job stability (Soler, 2009, p. 5).

Dependence on hiring through the City Hall constitutes the main vector of public office occupation by the municipal entity, consolidating it as the largest local employer. Such dynamics highlight the use of economic power for political ends. As a practical example of this relationship, it is noted that the mayor elected in 2019 is the son of a former mayor who served three consecutive terms and was re-elected in 2024, configuring a political oligarchy. This political context is widely addressed in academic literature by scholars of Elite Theory, such as Vilfredo Pareto, Gaetano Mosca, and C. Wright Mills. According to Ballan (2012, p.5-6):

We perceive that the concept of an elite is formed by the idea that there are superior types of people, chosen or predestined, and that certain conditions are necessary to be part of this select group.

We can generically point out some factors that describe elite theory, such as: the ruling class always has fewer components than the great mass. There will always exist in societies a dominant class and a dominated one, and this is the cause of the unequal division of power. Political power is always the most desired and most important within institutions.

### 3 The Conceptual Issue of Territory in the Brazilian Amazon

The complexity in developing concepts related to territory and territorialities stems from the theoretical-concrete nature of this construct, which involves central processes: (a) the space-time relationship, considered as an inherent movement in the formation of each territory, manifesting itself through relational, trans-scalar historical processes involving networks, flows, and specific fixed elements; (b) the interaction between idea and matter; (c) intrinsic heterogeneities; and (d) a dialectic that highlights the human being as both a social and natural entity simultaneously (Saquet, 2009).

According to Saquet (2009), the space-time relationship manifests differently in geographic studies.

Space is in time and time is in space. Such a relationship is considered, in geographic studies, in different ways: sometimes historical processes are highlighted, sometimes relational ones; however, these are always traces of historical time coexisting through social relations. This means that sometimes phases or periods are highlighted, while in other situations, social relations—whether cultural, economic, or political—are spatialized, regionalized, or territorialized (Saquet, 2009, p. 74).

The concept of socio-spatial formation seeks to understand the materialization of specific modes of production through multiple social formations. In this context, Santos (1977, p. 87) states that "[...] modes of production become concrete upon a historically determined territorial base," and from this perspective, spatial forms represent a language of the modes of production, that is, a language of the concrete result of the contact between the mode of production and the preexisting social formation. Santos (1999, p. 6) emphasizes that "[...] modes of production and geographic space evolve together, driven by a unitary logic". However, despite this unified logic, "with each new mode of production (or each new phase of the same mode), the structure and functioning of space are altered" (SANTOS, 1977, p. 87).

In the book "*Metamorfoses do espaço habitado*" (1988), Santos revisits issues related to the actions of capital agents and the State in the historical transformations of space, recognizing specific relations among politics, culture, and nature in distinct spatialities. Space is understood as a relational reality involving nature and society mediated by labor (energy), techniques, and technologies. Labor functions as the mediation in the relationship between society and nature, in which natural and social objects are in constant movement. Thus, inhabited space presents itself in various forms through urbanization, hierarchies, fixed elements, and flows (Santos, 1988). It is through labor that techniques assume centrality in the analysis; the human being is considered an active subject while techniques represent means of mediation; space constitutes a historical product resulting from the dialectic that characterizes its dynamics as a relationship between internal and external aspects; old and new; State and market (Saquet, 2009, p. 77).

The Amazon, particularly the municipality of Coari, whose economy is heavily influenced by the oil industry, presents a social dynamic defined by a history that

values territorialization as a process of technical, symbolic, and value integration of spaces. In this context, space assumes a significant political dimension, reflected in its concrete construction among local inhabitants. Such a process generates contradictions that, while not necessarily antagonistic, present relations of alterity and centrality, unity and diversity, hegemony and heterogeneity, as well as identity and difference, varying according to the social nature of the society in question (Moreira, 2010).

Approaching space from a differential historical-dialectical perspective allows for an understanding of its constitution by considering inequalities originating from both natural and social factors (BESSA, 2010). Socio-spatial analysis must recognize territory as a social construction inseparable from territorialities; that is, as Mesquita (1995, p. 83) asserts, territory functions as a projection of identity onto space. In this sense, it differs from territorial configuration itself, as well as from landscape (SANTOS, 1988). According to Claude Raffestin (1993, p. 143), territory is formed from space through actions coordinated by specific actors at different levels.

In the spatial dimension, geography finds its most favorable field for applying the categories of spatiality to social realities. According to Haesbaert (2004, p.20), it is about "[...] clarifying issues related to the spatial dimension," not from a positivist perspective oriented toward the construction of appearances and surfaces, but adopting a historical-dialectical materialism perspective, in which society produces its space, enabling the development of socio-spatial knowledge. This process of constructing social space results in a fragmented space where socio-spatial inequalities are founded on naturalized and socially constructed bases.

In modern capitalist society, three historical periods of this restructuring are identified: the technical era period, comprising the factory phase of the first industrial revolution, the factory phase of the second industrial revolution, and the cyber-factory phase of the third industrial revolution (Moreira, 1998; 1999; 2000; 2007). The first phase is characterized by a space structured around the centrality of factories, marked by the period of exploration and redistribution of natural resources through great intercontinental navigations. This is the moment when society organizes itself into homogeneous regions and international relations concentrate in the main European marketplaces, reflecting the identities of colonial spaces.

The second phase corresponds to the global centrality of industrial regions, characterized by the technical mobility of transport—initially railway, later road and air—as well as innovations in communication systems, such as the telegraph and telephone. In this stage, there is a hierarchization of regions centered on the command networks of industrial cities.

The third phase represents the current moment of deterritorialization and dissolution of the spatial power exercised by traditional industry, marked by the predominance of the service sector and rentier finance, by information as a raw material, and by the network society. In this context, large urban mass consumption centers stand out (Moreira, 1998; 1999; 2000; 2007).

Although it presents theoretical and ideological aspects, territory—as typified by Favaretto (2013)—is above all a concrete entity manifest in its territorialities. In

this sense, the symbolic plays a relevant role as the bearer of specific identitarianisms; in the Amazon, despite the various forms of ethnocide suffered by traditional populations, this identity remains strong and present in diverse regional realities. Therefore, analyzing the regional development of the Amazon from a territorial approach presents limitations. According to Favaretto and Berdegué (2019), there is a persistent focus on the agricultural sector and a misunderstanding that territory is a socially constructed space; in this context, people are not merely beneficiaries of sectoral programs. There is a significant block in understanding the hybrid and complementary relations between rural and urban areas. Public policies frequently act without proper coordination among state, municipal, and federal levels or between the market and civil society, limiting local empowerment.

According to Elias (2006a; 2006b; 2007a; 2007b; 2008; 2009), transformations in the relationships between rural and urban areas resulting from Brazilian agricultural activities have reorganized the national territory by generating new territorial arrangements that directly impact the sociocultural and economic contexts of Brazilian municipalities. The author proposes an interpretation wherein the rural sector predominates over the urban, inasmuch as rural economic activities sustain local urban services and activities.

The appropriation of space that occurred in Coari promoted significant transformations in the local territory, impacting both the cultural matrix and the urban landscape resulting from the population displacement of riverine people to the municipal seat. These changes served as the basis for reflections on understanding new territorialities and their effects. Subjective territoriality in the Amazon was considered an important analytical category; Milton Santos (2005, p.252) describes it as "used territory," a concept that only acquires meaning when integrating economic, political, social, and cultural constructions. Thus, territory must be understood as used territory—that is, one that includes the land and collective identity. This identity represents the feeling of belonging to occupied lands; in this context, territory is seen as the basis for human labor; a space for residence, material and spiritual exchanges, and the exercise of life (Santos, 2005).

Regarding Amazonian territorialities since the colonial period, there is an observable relationship marked by conflicts between colonizers and local society. Decisions regarding land use have always involved political disputes and conflicts, both internal and external to the region. Decisions made by the metropolis resulted in armed conflicts with indigenous populations—"just wars" against native peoples—as well as episodes of indigenous slavery and ethnocide. From the second half of the 20th century onwards, the Amazon became part of the national agenda for economic and social development; in this context, public administrators began to emphasize the need to promote balanced regional development for the area.

#### **4 Territorial Alterations Resulting from Oil Exploration in Coari**

The municipality of Coari, with a total area of 57,922 km<sup>2</sup>, surpasses the combined area of seven Brazilian states (Rio de Janeiro, Rio Grande do Norte, Distrito Federal, Sergipe, Alagoas, Paraíba, and Espírito Santo). Located 463 kilometers from

Manaus by river (a straight-line distance of 363 km), it is bordered by the Solimões River in a west-east direction. It is bounded to the north by the municipality of Codajás; to the south by Tapauá; to the east by Anori; and to the west by Tefé (IBGE, 2020).

The most significant alteration that occurred in Coari refers to urban population growth. Since the 1990s, thousands of individuals have relocated to the municipality's seat, motivated by the prospect of obtaining better-paying jobs in ventures linked to the oil industry, as well as the possibility of building homes, accessing schools for their children, and health services for their families. Consequently, the urban population grew from approximately 9,000 inhabitants in 1970 to over 50,000 in 2010 (IBGE, 2010).

Regarding the economic composition of the municipality, according to IBGE 2010, about 60% of activities are concentrated in the service sector, while the remainder is distributed between agricultural and industrial activities. Such concentration is primarily attributed to the influence of the economic enclave represented by the municipal administration, sustained by resources derived from royalties. In 2010, among workers aged 18 or older, 33.63% worked in the agricultural sector; 1.74% in the extractive industry; 3.04% in the manufacturing industry; 4.58% in civil construction; 1.58% in public utility sectors; 11.41% in commerce; and 38.92% in the service sector. These data highlight the dependence on employment generation in the urban sector aimed at meeting the demands of the municipal seat.

Regarding economic indicators:

The Gross Domestic Product (GDP) per capita registered in 2018 was R\$23,921.53—a relatively high value—making Coari the second highest GDP in Amazonas. Most of this income comes from industrial activities and services. However, an analysis of public resources exclusively applied in the areas of defense, education, and health reveals a significant reduction compared to other municipalities in the state: GDP falls below the state average, occupying the fourth position among Amazonas municipalities.

In a 2018 survey conducted by IBGE, it was found that the average monthly salary corresponded to approximately 2.9 minimum wages, and that only 9.6% of the employed population represented a proportional relationship with the total population. Compared to other municipalities in Amazonas, Coari ranks third out of 102 municipalities in terms of the proportion of employed workers. Additionally, almost half the population (48.9%) resided in households with a monthly per capita income equal to or less than half a minimum wage—an index that places the municipality in the forty-eighth position relative to the others.

Regarding formal market conditions<sup>6</sup>, the average monthly salary of registered workers in 2021 was equivalent to R\$3,100. The total number of formally employed people that year reached 8,079, representing approximately 8% of the economically active population. Still in that period<sup>6</sup>, approximately 48% of the population had a nominal monthly per capita income of up to half a minimum wage.

In 2022, a negative balance in the net generation of formal jobs was observed: a net reduction of 51 positions—with a positive highlight for the road freight transport sectors (98 vacancies), commercial establishments such as bakeries and butcher shops (91 vacancies), as well as pharmacies and optical shops (17 vacancies).

Despite this, 62 new businesses were opened by August of that year, including fourteen internet-based operations.

Considering regional performance, Coari currently occupies fourth place among the municipalities in its microregion regarding the net creation of formal jobs. At the state level, its position is quite low: it ranks 66th among the 62 municipalities in Amazonas.

The formal labor force comprises approximately 7,800 registered jobs—highlighting municipal public roles occupied by administrative leaders (2,437), higher elementary education teachers (1,077), and administrative assistants (627). The average remuneration for these workers is estimated at R\$3,100 per month. Income distribution demonstrates high concentration in economic classes above the state averages—about 47% of remunerations belong to economic brackets E and D; while the highest classes represent approximately 43.9%. The main employing activities are: general public administration (6,437 workers), oil/natural gas extraction (297 workers), and retail commerce/minimarkets (114 workers).

The municipality of Coari was characterized by an agro-extractive economy. Despite the installation of the oil industry beginning in the 1990s, traditional cultural, social, and biogeographical elements remained alive within its territory. These traditions include soil management techniques with intensive use of family labor, generally associated with low environmental impact; methods for capturing wild animals; specific periods for fishing certain aquatic species; and practices related to the manufacture and use of canoes. Most residences, both rural and urban, are built with plant materials and use hammocks as standard equipment for nighttime rest. Furthermore, there is a strong connection to the hydrological cycles of falling and rising rivers that create the Amazonian floodplain, an environment where fishing, hunting, and subsistence agriculture take place. Eventually, surpluses of these products are sold at local fairs and markets. An almost mystical aspect of the relationship between rural and urban communities in Coari refers to the connection of people to the river, as mentioned by Tocantins (1988).

The river acquires an almost mystical association with the men who inhabit the corners of the Amazon. Communities, tents, and large sheds develop along the rivers, near the flood-prone banks, balanced on wooden pilings, ready to move backward if collapsing riverbanks threaten the stilt houses, but always near the river, drawn by the maximum flow of waters that is the pathway of vital energies and commands life in the Amazonian amphitheater. For this author, the river guides the life of riverine peoples, as from the relationships they establish with the natural environment, it can be noted that "man and the river are the two most active agents of human geography in the Amazon". The river fills man's life with psychological motivations, printing directions and trends onto society, creating characteristic types of regional life (TOCANTINS, 1988, p. 233).

The relationship that combines rural and urban elements, as well as its implications on the territorial reconfiguration resulting from the implementation of the oil industry in Coari/AM, motivated the elaboration of this analysis. Within the rural population, a distinction is made between those who inhabit floodplain lands and upland residents, presenting distinct subsistence activities. Upland residents survive predominantly through hunting and fishing intended for family consumption, with an economic emphasis on extraction and agricultural activities. On the other

hand, floodplain riverine people practice hunting and extraction sporadically; their economic sustainability is primarily ensured by activities focused on fishing and small-scale agriculture. Because they reside on the banks of rivers in areas more fertile than uplands and possess detailed knowledge of the territory, they access lakes, narrow channels (*furos*), and anabranches (*paranás*) that feature a great diversity of fish. Like other riverine groups living in the floodplains, they maintain an intimate relationship with the river and forest environment (PEREIRA, 2016).

In the specific case of Coari, there are countless communities, with a striking characteristic of the municipality's social dynamics being the relationship among social groups of riverine people, urban residents of the municipal seat, and representatives of local public authorities. In this context, practices such as bossism (*mandonismo*), political clientelism, and populism persist. According to Pereira (2016, p. 39-40):

Similarly, a striking feature of Amazonian history is the little or almost non-existent importance that local dominant groups attributed to civil, political, and social rights, reproducing a social condition where an image of inequality and inferiority ultimately stands out as a characteristic of Amazonian human populations. A caricature of social groups that resist or slowly succumb to the inexorably installed economic power. So much so that, today, the brutality in the political and social fields is undeniable, as are the institutional privileges granted to economic groups operating in the region. In analyzing the 1965-2000 period—thirty-five years encompassing the military dictatorship and the civilian governments of the New Republic, guided essentially by the directives of an economic policy that supposedly intended to promote a modernizing development model in the Amazon, characterized simultaneously by the predominance of private capital and the effective presence of federal government investments in the region—it is possible to observe that the repercussions of this economic policy became increasingly impactful and disastrous in proportion to its advances.

The model of oil royalty transfers allocated to Coari demonstrates a repetition of historical errors present in Amazonian development projects, which traditionally sought to promote greater economic and social cohesion. However, these projects frequently neglect inter-regional heterogeneities and microregional scales, which are essential to guiding priority actions. Thus, although the municipality of Coari has financial resources at its disposal, its social and economic indicators remain similar to those of other localities in Amazonas. Therefore, the present study conducts a theoretical analysis of current regional development concepts applicable to the State of Amazonas, using the municipality of Coari as a case study.

The commercial viability of the Urucu oil reserves dates back to 1986. Urucu constitutes the first oil and natural gas reserve commercially explored in the Brazilian Western Amazon, comprised of the Urucu field and the support pole called Polo Arara, used for collecting and processing natural resources. This pole features infrastructure that includes an airport, ports, land roads, worker housing, administrative facilities, telecommunications systems, and other equipment (NEVES, 2005).

Production at the Urucu river station began in 1988. During this period, outsourced companies began to operate in Coari to provide services to Petrobras, causing an intra-municipal rural-urban migration process, as well as migration from other states due to opportunities related to the oil and gas sector. Starting in the

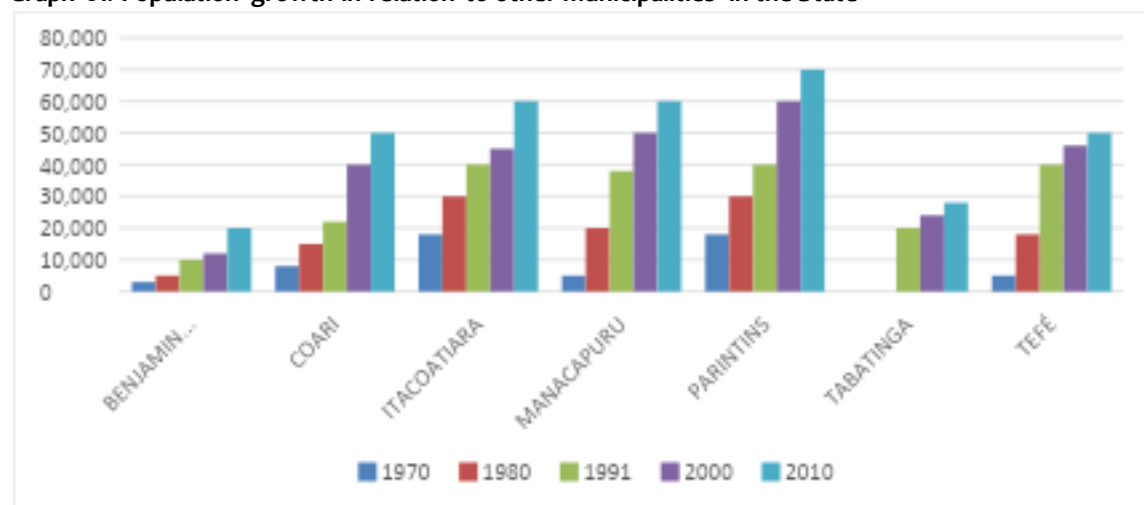
1990s, studies were initiated aiming to increase exploration and optimize the logistical systems related to the transport of extracted resources.

#### 4.1 Population Alterations

The main alteration in Coari's territory refers to the migration of riverine people from nearby communities to the municipal seat. In 1991, the total population of the municipality was 38,678 inhabitants, increasing to 67,096 in 2000, showing a population growth above the Brazilian national average in the same period. According to data from the 2010 demographic census, Coari's official population was 75,965 inhabitants, distributed as 49,651 residents in the urban zone and 26,314 in the rural zone, corresponding to approximately 65% and 35%, respectively (IBGE, 2010). The municipal seat concentrates the largest population contingent, configuring a hybrid relationship between rural and urban areas. Spatial analyses of these areas demonstrate strong interpenetration, significantly influenced by access to resources derived from oil royalties.

The most significant change occurred in urban population growth. Since the 1990s, there has been an intensified rural exodus toward the municipal seat, motivated by the search for employment opportunities linked to the oil industry, as well as the possibility of building homes, establishing schools, and accessing family healthcare services. In this context, the urban population grew from approximately 9,000 inhabitants in 1970 to over 50,000 in 2010 (IBGE, 2010).

Graph 01: Population growth in relation to other municipalities in the State



Source: IBGE – Demographic Census 1970, 1980, 1991 and 2010.

Table 12: Resident population by household situation

| Municipality | Household Situation | Year   |        |        |        |        | 2020*  |
|--------------|---------------------|--------|--------|--------|--------|--------|--------|
|              |                     | 1970   | 1980   | 1991   | 2000   | 2010   |        |
|              | Total               | 27.636 | 42.609 | 38.678 | 67.096 | 75.965 | 85.097 |
| Coari/AM     | Urban               | 8.878  | 14.805 | 21.081 | 39.504 | 49.651 |        |
|              | Rural               | 18.758 | 27.804 | 17.597 | 27.592 | 26.314 |        |

Source: IBGE – Demographic Census 1970, 1980, 1991, 2020\* Approximate population.

## 4.2 Economic Alterations

With the implementation of resources derived from oil royalties, an increase in the supply of formal and informal jobs, as well as improvements in the population's social conditions, was expected. However, such expectations did not materialize; on the contrary, an expansion in income concentration was observed. Poverty indicators remain low; however, the Gini index demonstrates high inequality in distribution. The Municipal Human Development Index (MHDI), the illiteracy level, and the Basic Education Development Index (IDEB) presented insignificant variations when compared to the data for the State of Amazonas. In 2019, the infant mortality rate in the city was 16.49 per thousand live births, ranking 42nd among the 62 municipalities of Amazonas (IBGE, 2010).

A relevant aspect in the analysis of the Municipality of Coari concerns the influence of financial flow on regional development strategies. Considering territory as a concept of "used territory" (Santos, 1988)—that is, the space inhabited, worked, and studied by the population—it is observed that money constitutes a fundamental category in this context. Barter, a practice quite present in the Amazon, no longer meets the region's economic demands. With the inflow of resources stemming from oil royalties, there was an expansion of commercial exchanges, consolidating money as the regulating element of these transactions. Gradually, this resource acquired the status of an end in itself, ceasing to act merely as a medium of exchange to assume a use function.

The royalties paid by Petrobras to the Municipality of Coari represent financial compensation to society for the exploitation of non-renewable resources. This compensation differs from a tax, since taxes are amounts collected to fund public expenses related to security, education, health, etc. (Lima, 2005). As defined in Article 11 of Decree No. 2,705/1998 in Brazilian legislation, royalties consist of: "financial compensation owed by concessionaires exploring and producing oil or natural gas, to be paid monthly per field starting from the beginning of production" (BRASIL, 2010).

In the municipal sphere in Coari, royalties represent the main resources for the municipality's own revenue; however, municipal revenues do not depend exclusively on them. The 1988 Federal Constitution stipulates that federated entities regulate the distribution of tax revenues among themselves. In the case of ICMS (Tax on Circulation of Goods and Services), for example, Item IV of Article 158 determines that 25% of the collected amount must be allocated to municipalities.

## 4.3 Alterations in Municipal Infrastructure

According to the Coari City Hall Department of Public Works (2023), only a few neighborhoods have a sanitary sewage system, such as Urucu, União, and Chagas Aguiar, although they operate precariously, with exposed pipes. Other areas, such as the Liberdade neighborhood, lack adequate infrastructure for sanitary sewage, with direct discharge into backyards or streams (*igarapés*). The city's existing sewage network has no connection to a treatment plant; instead, effluents are directed straight to local streams. According to Oliveira (2012), research conducted in the municipality indicated that 73% of residences discharge sewage directly into canals; 23% have piped systems, though considered inefficient; and 4% use cesspools,

suggesting contamination by feces and wastewater in certain parts of the hydrographic basin (Seabra, 2022).

According to data from the IBGE Demographic Census (2010), regarding the conditions of urban households in relation to the presence of bathrooms or sanitary units and the type of sewage disposal, an insignificantly low index is observed compared to the total population. The municipality has a sanitary landfill inaugurated in 2007; however, its operation has not yet commenced due to the lack of an environmental license. Furthermore, its location near the airport raises questions about the viability of its future operation. The project, budgeted at R\$ 1.5 million, remains inoperative and occupies a 25-hectare area (Mota, 2014). Therefore, solid waste continues to be discarded in a dump located approximately 500 meters from the sanitary landfill, highlighting an inadequate use of public resources.

According to an analysis conducted by Situba (2017) regarding public cleaning in Coari—as in most municipalities in Amazonas—the effectiveness of actions in this sector is predominantly concentrated in municipal management. Local society's participation in solid waste collection is limited to a single association. Despite municipal efforts to conduct collection and maintain urban cleanliness, it is noted that population growth over the past 15 years has resulted in precarious conditions in municipal public spaces regarding hygiene and infrastructure—few environments possess adequate arborization. Urban cleaning requires investments that must be equitably distributed to improve the city's general conditions.

Starting in the 1980s, with the acceleration of the urbanization process, the motorcycle emerged as one of the main factors driving the increase in the vehicle fleet in the municipality of Coari. This predominance is due to low acquisition and maintenance costs, convenience for door-to-door travel, ease of parking, and lower fuel consumption. The lack of paved roads connecting Coari to other municipalities means that motorcycle use is predominantly restricted to the urban perimeter.

In the municipality, there is only one bike lane, which provides access to the airport and is in precarious repair. Urban roads frequently lack sidewalks, forcing pedestrians to walk in the middle of streets and dodge motorized vehicles. Traffic signs are scarce and poorly maintained; furthermore, most drivers do not follow traffic rules. Like other locations in the interior of Amazonas, Coari does not have regular public transit, which favors the operation of mototaxi services. Many of these mototaxi drivers lack a National Driver's License (CNH) or adequate safety equipment, such as helmets, which are rarely used. Many of these professionals are linked to cooperatives registered with the municipal government. The only private collective transport present in the city is the minibus service exclusively intended for student transport (Seabra, 2022).

Data from the National Traffic Department (Denatran) in 2016 indicate an average of 1.2 vehicles for every 10 inhabitants in the municipality; among these vehicles, 1.1 are motorcycles. The largest proportion of the registered fleet in Coari consists of motorcycles. Due to the region's rugged topographical characteristics—with numerous inclines and declines—there is a significant preference for motorized vehicles (93.1%), while non-motorized vehicles represent only 6.9% (Silva, 2016).

#### 4.4 Alterations in Housing Issues

With the implementation of construction works for the oil terminal and the Coari/Manaus gas pipeline, contracted by Petrobras, there was a significant increase in employability in the region, resulting in substantial population growth. One of the most sought-after areas for setting up housing was along the rivers bordering the city, where any individual or family could establish a residence without prior authorization (Seabra, 2022). Accessibility to the municipal seat by river is facilitated, evidenced by the presence of numerous residences at the entrance of Lake Coari, from the Pera neighborhood to the Nazaré Pinheiro neighborhood.

According to a survey conducted by the Coari Municipal Department of Rural Infrastructure in May 2013, it was estimated that there were approximately 132 floating domestic units, excluding floating commercial establishments. It is worth noting that these dwellings are mobile and depend on the hydrological variations of the Solimões River; during floods, they remain in fixed locations due to the flooding of the floodplains, while during the dry season, they require the use of tugboats to move them closer to the liquid margins of the rivers. These homes are concentrated along the waterfront, positioned at an average distance of three meters from each other, frequently occupied by relatives arriving from nearby rural communities.

The residences display quite distinct regional characteristics similar to upland constructions, being built with different wood species adapted to local architectural particularities. Besides their residential function, these floating houses act as commercial points selling products from the forest and rivers, such as Brazil nuts, açai, and other regional fruits; they also sell fish and offer various services to boats in the area, including river workshops, gas stations, ice factories, cold storage facilities, and bars featuring live music on weekends (Seabra, 2022).

In addition to the residents of floating homes, there are residents on the uplands who do not coexist with aquatic pollution. These individuals have access to essential public services such as household garbage collection, treated water, and electricity.

#### 4.5 Intertwining Urban and Riverine Culture

The most widely consumed protein in Coari is fish, and local production is sufficient to supply the domestic market; during the *piracema* (spawning) season, surpluses are sold in Manaus due to the high fish abundance in the region's rivers. Because of the considerable access to financial resources deriving from royalties for the city hall, a significant dependence on public employment is observed, making the municipality the main employer and utilizing its economic influence for political purposes.

Most communities in Coari were established by municipal administrative decision, which instituted a minimum wage for community leaders, generating disputes over these positions and keeping these leaders economically and politically dependent on municipal transfers. Despite the considerable influx of resources, investments in Education have not produced satisfactory results. The municipality ranks 42nd in the schooling rate and shows scores in the Basic Education Development Index (IDEB) of 4.6 in the early years of elementary school and 3.7 in the final years. Inefficient management of public resources also negatively impacts

health, evidenced by the 27th position in infant mortality, a consequence of insufficient investments in basic sanitation and urbanization of public roads.

Concerning the rural population, a distinction is made between those living in floodplain lands and residents in uplands with distinct subsistence activities. Residents of higher lands survive mainly through fishing and hunting intended for family consumption, in addition to practicing extractive and agricultural activities for economic purposes. Conversely, floodplain riverine people practice hunting and extraction sporadically; their economic sustenance depends primarily on fishing and small-scale agriculture.

Because of their location along riverbanks and detailed knowledge of the territory—with access to highly productive lakes, channels, and anabranches—these groups maintain an intimate relationship with the natural resources available in the floodplain, similar to the experience of other riverine peoples living at the interface between rivers, floodplains, and the forest (Pereira, 2016).

Comparing Coari's economy with other municipalities in the middle Solimões region, it appears that most of these localities still remain based on an extractive model, heavily dependent on state and federal financial transfers. This situation reveals a contrast between the extractive rural sector and the urban sector, both highly dependent on revenues derived from oil royalties, indicating few future alternatives for economic diversification.

Socioeconomic indicators point to low levels of relative poverty; however, there is income concentration evidenced by the Gini index. The Municipal Human Development Index (MHDI), illiteracy rates, and IDEB showed little advancement compared to data for the state of Amazonas. In 2019, the infant mortality rate in Coari was 16.49 deaths per thousand live births, ranking 42nd among the 62 municipalities in Amazonas (IBGE).

## Final Considerations

The research revealed that oil exploration in Coari has driven migratory processes, as well as an increase in precarious settlements and the displacement of communities to the urban center. This urban expansion resulted in a growing excluded population, which does not participate in the revenues derived from oil royalties and special participations.

The municipal administration's actions could help mitigate the adverse effects of social inequalities; however, the opposite was observed, with the strengthening of these inequalities favoring an economic elite and fueling an illusory perception of temporary prosperity. The economic enclave, centralized in the city hall and sustained by oil production, resulted from a lack of democratic participatory processes, hindering the promotion of effective development in both local and regional contexts. Furthermore, there is no institutional policy by Petrobras regarding the best application of royalty resources, nor are there mechanisms to foster economic activities that offer alternatives to exclusive dependence on the oil sector.

The absence of structured mechanisms to promote development through efficient natural resource management is evident in Coari, especially considering the temporary nature of these resources. It is imperative to establish independent

institutional structures capable of articulating with supranational and state bodies, thereby contributing to sustainable local development. Despite the presence of public banks, state enterprises, universities, incubators, technical service agencies, and consultancies in the region, financial resources remain concentrated in the municipal administration, lacking a consolidated proposal aimed at the municipality's sustainable development.

Although it is the municipality with the second largest GDP in Amazonas — R\$ 2,015,916 thousand (IBGE, 2018), representing 2% of the state GDP — these resources have not been utilized strategically to generate lasting socioeconomic alternatives that ensure sustainability in the face of the eventual depletion of oil reserves. This finding is corroborated by interviews conducted with strategic local sectors, such as private entrepreneurs, educational sector agents, social movements, and municipal administrators.

To understand the socioeconomic contradictions present in Coari, it is necessary to analyze the logic of globalized capitalism in which the Amazon is inserted. This logic is marked by two scalar processes: global integration linked to neoliberal policies since the 1980s, and the widening of economic and political disparities at the national and international levels (HARVEY, 2006).

In the context of Amazonas, government actions aimed at regional development were limited to the implementation of the Manaus Free Trade Zone (ZFM), including infrastructure works such as roads, ports, and airports; additionally, there were investments in projects aimed at the agricultural sector. However, such initiatives occurred simultaneously with increasing exploitation by loggers and wildcat miners (*garimpeiros*) on indigenous lands that lacked legal protection against such extractive activities — a fact that generated conflicts between indigenous communities and extractive agents.

The developmentalist approach adopted for the region contrasts with the extractive reality experienced by Amazonian peoples. These are apolitical and uncritical proposals that consider the social problem as a gap capable of being resolved by technical-economic development. Escobar (1995) refers to this phenomenon as the "infantilization of the Third World," because it ignores major social problems and internal conflicts; instead, it promotes a hierarchical vision where local populations are considered incapable of driving their own development.

The conception of a regional economic development project based on Portuguese colonial exploitation remains prevalent in the historical perspectives of the Amazon. For centuries characterized by the hunt for natural wealth by European colonizers — especially traditional indigenous inhabitants who received little or no public policy assistance in education, health, and transport — this mentality contributed to social indicators below Brazilian averages in most municipalities.

Since the 1990s, this developmentalist model has been in decline due to the crisis of Brazilian state interventionism; the country faced continuous hyperinflationary processes and high capital outflows resulting from external debt (the debt crisis), reflecting weaknesses in national economic performance. There was a change in the previous growth pattern, moving towards increasing integration into the world economy—with commercial and financial opening and reduced state intervention—seeking to stabilize the economy; however, this strategy deepened

regional disparities by favoring more developed regions to the detriment of less structured ones.

This national scenario in the 1990s influenced the policy of transferring Petrobras royalties to municipalities like Coari. The transferred resources followed a liberal logic: the reduction of the role of direct public investment (public administrations and state-owned companies) was replaced by the supposed capillarity of the private market to boost local economic growth — a model that proved insufficient given specific regional needs.

In the specific case of Coari—where it is known that oil is a finite resource—there are uncertainties related to its future economic viability due to national and international cyclical fluctuations. Thus, the near-exclusive dependence on these revenues places the municipality at significant risk in the face of the potential exhaustion of oil reserves, coupled with the typical characteristics of an economic enclave (PIQUET; TAVARES; PESSÔA, 2017).

Although the state and federal governments have made investments to establish the Federal University, the Federal Institute, and other institutions dedicated to Professional Education, aiming to promote employment and income generation, the municipality of Coari lacks a regional development project that incorporates royalty resources. This situation highlights the absence of a structured local regional development proposal. In the interviews conducted, municipal administrators did not present strong criticisms of the current mode of operation, which perpetuates clientelist practices and results in health and education indicators significantly inferior to the resources available.

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