



NEO-EXTRACTIVISM, MINING, AND GENDER: AN ANALYSIS OF WOMEN'S LIVING CONDITIONS IN MINING TERRITORIES IN AMAZON

**NEOEXTRATIVISMO, MINERAÇÃO E GÊNERO: UMA ANÁLISE
DAS CONDIÇÕES DE VIDA DAS MULHERES EM TERRITÓRIOS
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ABSTRACT

The neo-extractivist development model, based on the extraction and export of commodities such as minerals, has been one of the main strategies for Brazil's integration into the international market economy. However, despite the economic gains reflected in the trade balance, regional experiences show that this model, along with the mineral extractive industry, has produced perverse effects in the territories where it operates. This article aims to analyze the living conditions of women in mining municipalities in the Brazilian Amazon, specifically in the state of Pará, using microdata from the Unified Registry (CadÚnico) for the years 2014 to 2017. The study reveals that women residing in mining areas in Pará and registered in CadÚnico face extreme poverty and have limited access to education, sanitation, and income. Black and Indigenous women are the most affected. These findings underscore the urgent need for intersectional public policies and raise critical questions about the neo-extractivist model, which, despite generating significant tax revenues, exacerbates social inequalities in the Amazon.

Keywords: Neo-extractivism; Mining; Gender; Cadastro Único.

RESUMO

O modelo de desenvolvimento neoextrativista, baseado na extração e exportação de commodities como os minérios, tem sido uma das estratégias de inserção no mercado internacional da economia brasileira. Contudo, apesar da bonança econômica gerada na balança comercial, a experiência regional mostra que este modelo de desenvolvimento, bem como a indústria extrativa mineral, tem gerado efeitos perversos nos territórios onde estão instalados. Nesse sentido, o objetivo desse artigo é analisar as condições de vida das mulheres em municípios mineradores na Amazônia, especificamente no Estado do Pará, a partir das informações dos microdados do Cadastro Único (CadÚnico) para os anos de 2014 a 2017. O estudo revela que mulheres em territórios mineradores no Pará inscritas no CadÚnico enfrentam pobreza extrema, acesso limitado a educação, saneamento e renda, sendo as mulheres negras e indígenas as mais afetadas. Esses resultados evidenciam a urgência de políticas públicas interseccionais e questionam o modelo neoextrativista, que, apesar de gerar elevada arrecadação fiscal, aprofunda desigualdades sociais na Amazônia.

Palavras-chave: Neoextrativismo; Mineração; Gênero; Cadastro Único.

INTRODUCTION

Mining has played a significant role throughout the historical development of the Brazilian economy, representing a key stage in the country's capitalist evolution (Furtado, 2007; Prado Júnior, 1981). In contemporary times, this economic activity has gained renewed prominence due to increased demand from China (Milanez, 2017; Virga & Nascimento, 2021), combined with a set of financial dynamics (Burchardt et al., 2021), which have expanded the mineral sector's share in both the Gross Domestic Product (GDP) (Santos, 2021) and in *royalties* related to the exploitation of natural resources (ANM, 2021).

At the national level, mineral exports have made a positive contribution to the trade balance, gaining relevance due to the foreign exchange revenues the sector brings to the country. Among the most exported minerals, iron ore stands out as one of Brazil's top three export products (Secint, 2022). Regionally, mining has produced mixed effects. On the one hand, there has been a significant increase in income in mining municipalities and states; on the other hand, the activity has also had negative impacts on the environment and on the social conditions of certain groups.

Given the complex role that the mineral sector plays in Latin American economies, some authors have adopted the concept of neo-extractivism to explain the relationship between mining and capitalist development—among them Gudynas (2009; 2012), Svampa (2013), and Gonçalves *et al.* (2018). In brief, neo-extractivism refers to a growth-oriented development model characterized by: (i) the



extraction of natural resources and raw materials, such as minerals and non-renewable agricultural and forestry products; (ii) the export of these products with little or no industrial processing; and (iii) the use of revenues from these exports, which, in general, are not directed toward improving the population's living conditions (Burchardt *et al.*, 2021).

The promise that mining ventures bring economic and social development to the regions where they are located has been the subject of reflection by numerous researchers around the world (Chuan-Pole *et al.*, 2017). The main body of evidence tends to indicate that the presence and expansion of mining projects to meet international demand, despite their positive economic effects, has generated and/or exacerbated conflicts, income concentration, poverty, and violence (Smart, 2020; Burchardt *et al.*, 2021; Finkeldey, 2023).

It is important to note that these negative effects are not distributed equally across society, either socially or geographically, and tend to disproportionately impact certain social groups and specific territories. In the Brazilian context, as highlighted in the literature that analyzes mining from a gender perspective, women are among the first to experience the changes brought about by these ventures, particularly in regions with a long-standing history of mining activity, such as Minas Gerais, and in economic frontier regions like the Brazilian Amazon. The works of Svampa (2019), Hofmann and Duarte (2021), and Furtado and Andriolli (2021) offer several examples of how the implementation of large-scale extractive projects has intensified the violence historically inflicted on women.

In an effort to contribute to this discussion, the objective of this article is to analyze the living conditions of women in mining municipalities in the Amazon, specifically in the state of Pará, using microdata from the Unified Registry (CadÚnico) for the years 2014 to 2017 (MDS, 2019). The mining municipalities in Pará examined in this study are among the state's top three recipients of the Financial Compensation for the Exploitation of Mineral Resources (CFEM): Parauapebas, Canaã dos Carajás, and Marabá.

Broadly speaking, this text seeks to contribute to several areas. In the mining debate, it aligns with a broad body of literature that evaluates the relationship between mining and development through the lens of neo-extractivism (Finkeldey, 2023). By combining a territorial focus on the Amazon with the mining discussion, the text acknowledges the relevance of this region in thinking



about both Brazilian and global development, as well as the limitations of the neo-extractivist development model (Siqueira-Gay et al., 2022). The use of microdata from the Unified Registry (CadÚnico) is another key contribution of this study. As Barros et al. (2009) argue, CadÚnico is a vital tool for analyzing the living conditions of the poorest populations, as it provides a diagnostic overview based on a set of statistics about registered families, making it essential for public policy formulation. Despite the analytical potential these data offer, few studies have employed them in analyses of development and mining in the Brazilian Amazon (Silva et al., 2022; Silva & Sousa, 2022).

To achieve the proposed objective, this article is divided into three sections, in addition to this introduction and the conclusion. The first section, drawing on a brief literature review, discusses some of the main effects that the neo-extractivist development model, centered on large-scale mineral extractive projects, has had on women in these territories. The second section outlines the methodological approach adopted in this research. Based on the literature review and methodological framework, the third section presents a socioeconomic overview of women registered in the Unified Registry (CadÚnico) in the mining municipalities of Marabá, Parauapebas, and Canaã dos Carajás, located in the state of Pará.

THE IMPACTS OF THE NEO-EXTRACTIVIST MODEL ON WOMEN IN MINING TERRITORIES: AN OVERVIEW

Mining has increased its economic relevance in Brazil, particularly during the commodities boom (2003–2011) (UN Comtrade, 2020), boosting exports and funding social policies during the Workers' Party (PT) governments, especially in Lula's first and second terms (2003–2010) (Secint, 2021; Engbom & Moser, 2022). However, the neo-extractivist model has generated several contradictions: while it reduced national inequalities, it also intensified territorial conflicts, environmental degradation, and social vulnerability (Mapa da Injustiça Ambiental e Saúde no Brasil, 2009; Almeida, 2010), all of which were aggravated by disasters such as Mariana (2015) and Brumadinho (2019) in the state of Minas Gerais. The subsequent administrations of Michel Temer (2016 - 2018) and Jair Bolsonaro (2019 - 2022) further deepened these impacts, particularly in the Eastern Amazon, where mineral expansion, initiated in the 1970s with the Grande Carajás Project (Monteiro, 2005), was



consolidated by rising Chinese demand (Virga & Nascimento, 2021), exacerbating socio-environmental tensions (Silva & Fearnside, 2022; Wanderley et al., 2020).

The impacts of commodity production expansion on society disproportionately affect more vulnerable groups, such as women. This correlation between gender and the neo-extractivist development model has emerged in the literature, given the direct and indirect effects of mining (and other large neo-extractivist projects) on women in Latin America, especially in South America. These impacts are diverse, including increased prostitution, low female employment in extractive industries, lifestyle changes, rising living costs for women, and other issues (Svampa, 2019; Hofmann & Duarte, 2021; Furtado & Andriolli, 2021).

The impacts of mining on women have been the focus of a broad and significant international debate (Valiani & Ndebele, 2018). This discussion tends to follow two main directions. The first centers on women's participation in the mining sector. Studies such as those by Onditi (2022) and Mendes et al. (2022) provide an important overview of the challenges faced by women working in mining-related fields, both industrial and artisanal, as well as potential mechanisms to promote gender equality in these activities. The second direction focuses on the indirect impacts of mining on women (Valiani, 2015), addressing the environmental, cultural, economic, social, and health-related consequences of mining activities.

In the Amazon region, some studies highlight the direct and indirect violent effects of mining on the livelihoods of women affected either by the presence of mining operations in their territories or by the transportation of production via the Carajás Railway (EFC). Enriquez (2018), for example, notes in her study of Canaã dos Carajás (PA), Brazil's second-largest mineral exporter, that women's average incomes declined following the implementation of mining projects in the region. Bezerra and Alves (2021), presenting testimonies from women living in mining territories in southeastern Pará, emphasize that women are the first to perceive the impacts of mining: due to high immigration, they struggle to find school placements for their children, face long waits in hospitals, and are unable to afford housing due to rising real estate prices.

Violence experienced by women due to large-scale projects in the Legal Amazon is another impact highlighted in the literature. Barroso (2017) points out that three of Brazil's ten most violent cities for women are located in the state of Pará, including Paragominas, where mineral extraction by Vale S.A. takes



place. Moreover, as the author notes, various other forms of violence occur in areas hosting large projects.

In the Maranhão Amazon, communities intersected by Vale S.A.'s Carajás Railway (EFC), which connects the Carajás mining region in Pará (PA) to the Port of Madeira in São Luís, Maranhão (MA), exemplify how the indirect effects of mining impact women. The organization Justiça nos Trilhos (JNT, 2020) reports the distress experienced by men and women affected by the EFC, due to ore dust from train cars, noise pollution, degradation and contamination of local water sources, and restrictions on freedom of movement. In the case of women, their right to participate in decision-making processes is denied, as Vale S.A. engages in clientelist practices by offering occasional benefits without truly compensating for tangible losses. This approach tends to demobilize resistance to mining. In the community of Mutum II (Arari, MA), the railway's construction disrupted rivers and lakes, forcing women to travel long distances to access clean, safe, and sufficient water (JNT, 2020).

Similar patterns are observed in the state of Minas Gerais, where water degradation has significantly disrupted the lives of rural women. In Conceição do Mato Dentro and Alvorada de Minas, the Minas-Rio project led to river siltation and contamination, which crippled family farming, the primary economic activity for many women, and triggered food insecurity. Reports also indicate a rise in domestic violence between 2011 and 2014 during the project's implementation. Women reported feeling unsafe due to the increased presence of Anglo American workers, which limited their freedom of movement (Andrade, 2020).

Monteiro and Porto (2020) also highlight the impact of mining on the lives of women in three municipalities in northern Minas Gerais: Porteirinha, Riacho dos Machados, and Rio Pardo de Minas. The main effects are linked to the worsening of pre-existing issues, such as water scarcity and domestic violence, and the emergence of new problems, including soil and water contamination, health complications, and the disruption of agricultural practices. From the perspective of women living in these territories, mining represents destruction rather than development, as it brings river and soil pollution, health problems, and increased violence. Sexual violence and adolescent pregnancy are also among the consequences of mining activities for women. Another issue reported by these women is the rise in respiratory and skin diseases caused by mineral contamination.



Castro and Vieira (2020), in turn, demonstrate how the operations of the *Anglo American* mining company in Minas Gerais are both racist and sexist. Their study emphasizes that such practices undermine agricultural activities and traditional ways of life in the municipalities of Conceição do Mato Dentro and Alvorada de Minas. The authors point out that the predominantly Black families in these areas have become increasingly dependent on wage labor, mostly performed by men, due to the disruptions mining causes in local food production. This dynamic further exacerbates women's conditions of subordination.

These studies collectively underscore mining's failure to improve the living conditions of women. To contribute to this body of literature, the next section presents the research methodology, followed by an analysis of socioeconomic indicators, disaggregated by gender, for the municipalities in Pará that receive the highest revenues from mining *royalties*, based on data from women registered in the *Cadastro Único*.

METHODOLOGICAL PROCEDURES: DATA SOURCES AND ANALYTICAL APPROACH

This research adopted a quantitative approach based on official secondary data to analyze the socioeconomic conditions in mining territories of the Eastern Amazon. The main source of economic data was information on the Financial Compensation for the Exploitation of Mineral Resources (CFEM), publicly provided by the National Mining Agency (ANM). These data enabled us to map the spatial and temporal distribution of revenues generated by mining in the selected municipalities (Marabá, Parauapebas, and Canaã dos Carajás), offering an overview of the relationship between mining activity and local investment capacity.

The three municipalities were selected based on their ranking among the highest CFEM revenue collectors in the state of Pará. Two of them – Parauapebas and Canaã dos Carajás – currently top the national list as well. Located in the Carajás region of Pará (Monteiro & Silva, 2021), within the country's largest mineral province – the Carajás Mineral Province – these municipalities share a closely connected historical background. Marabá is the oldest of the three. With approximately 110 years since its emancipation, its origins are directly linked to its geographic location at the confluence of the Tocantins and Itacaiúnas rivers. Throughout much of the 20th century, Marabá served as the region's main commercial and economic hub, also playing a significant political role.



The emergence of Parauapebas is closely linked to the Grande Carajás Project, conceived during Brazil's military dictatorship and officially launched in 1982. Initially part of Marabá, the territory served as the base for the first mineral exploration operations carried out by Vale S.A. – at the time still a state-owned company, Companhia Vale do Rio Doce. It gained political autonomy from Marabá in 1988 and, within a few decades, became one of the country's leading mining municipalities. Canaã dos Carajás is the newest of the three municipalities analyzed here, having been separated from Parauapebas in 1995. Mineral extraction began in the early 2000s, and in just a few years, it too rose to become one of Brazil's top mining hubs.

To assess living conditions, especially for women, we used microdata from the Unified Registry for Social Programs (CadÚnico) covering the period from 2014 to 2017 (MDS, 2019). Collected by the Ministry of Citizenship, these data provide detailed information on income, access to basic services (water, sanitation), and demographic profiles, allowing for cross-referencing of variables such as gender, race, and geographic location. This period was selected due to data availability at the time of research and its alignment with the peak of the mineral commodities cycle in the region.

The use of this database is justified by the lack of recent census data at the municipal level and by the fact that other sources, such as the Continuous National Household Sample Survey (PNAD-C), are only disaggregated at the state level. Created by the federal government in 2001, CadÚnico offers near-census coverage of the poorest segments of the population and serves as a tool for identifying and characterizing the socioeconomic conditions of low-income Brazilian families. The questionnaires administered by interviewers allow for the identification of household living conditions, levels of vulnerability, access to education and employment, availability of resources, child development, and housing conditions (Barros, Carvalho, & Mendonça, 2009).

The methodology combined descriptive statistical analysis with a territorial approach, using software such as Excel and R for data processing. Socioeconomic indicators were compared to CFEM revenue figures in order to identify possible contradictions between the volume of mining-generated resources and the living conditions observed. The intersection of these datasets allowed for a critical evaluation of the neo-extractivist model, with a focus on its gender and territorial implications, as discussed in the specialized literature.



LIVING CONDITIONS OF WOMEN IN MINING TERRITORIES IN PARÁ

Based on these methodological elements, this section analyzes the living conditions of women registered in the CadÚnico in Pará's most prominent mining municipalities. Over the observed period, the three municipalities accounted for an average of 83% of Pará's total CFEM revenue, with the lowest share in 2016 (73.3%) and the highest in 2019 (91.1%). Among them, Parauapebas generated the highest revenues overall, though Canaã dos Carajás displayed a notable upward trend over the historical series, rising from 6.44% of the state's CFEM revenue in 2014 to 32% in 2019. In contrast, Parauapebas saw its share decline from 73.17% to 52.73% during the same period.

Even in nominal terms, CFEM revenues more than tripled over six years, making these municipalities the top contributors nationwide. Evaluating living conditions in these areas, particularly among the most vulnerable populations, helps shed light on the impacts of the neo-extractivist model and the potential role of public policies in mitigating the economic, social, and cultural consequences of such activities.

During the period analyzed (2014 - 2017), Canaã dos Carajás had an average of 22,000 people registered in CadÚnico, Parauapebas had 86,000, and Marabá approximately 136,000. A striking finding concerns the proportion of individuals declaring themselves to be in poverty (monthly per capita income up to R\$ 140.00) or extreme poverty (up to R\$ 70.00). From 2015 onward, the extreme poverty rate consistently exceeded 10% of CadÚnico registrants. Despite increasing CFEM revenues, the number of extremely poor individuals in Canaã dos Carajás and Parauapebas doubled over the four-year period. Marabá, in contrast, was the only municipality to see a reduction, 9%, in the proportion of extremely poor individuals. When considering the broader category of poverty, all three municipalities experienced increases in their share of registrants.

Among those classified as poor, Parauapebas saw a 51.4% increase, rising from 43.8% to 66.4% of its total CadÚnico population. Canaã dos Carajás went from 46.5% to 64.5%, an increase of 38.7%, while Marabá recorded the smallest growth, at 15.3%.

A notable trend is the rise in poverty in Parauapebas and Canaã dos Carajás. In 2014, Marabá had a poverty rate in CadÚnico nearly 15 percentage points higher than the other two municipalities. However, this gap steadily narrowed, and by 2017, all three municipalities had poverty rates exceeding 60%.



Given that the number of CadÚnico registrants did not decline during this period, the persistence, and even rise, of poverty and extreme poverty rates in these municipalities offers strong evidence that the expansion of mineral extraction, despite its impact on GDP and CFEM revenue, has not translated into improved income conditions for the poorest populations. These findings are further reinforced when examining other indicators of living conditions, such as access to water and sanitation.

Basic sanitation, defined here as access to both water and sewage services, is essential for adequate living conditions (UNDP, 2006). Access to such services is a public health concern, and their absence perpetuates cycles of vulnerability. The lack of clean water leads to illness, contributing to problems such as child mortality, low school attendance, and economic hardship caused by increased spending on water or healthcare, burdens that disproportionately affect women and trap them in poverty (Silva, Mendes, & Sousa, 2022).

Table 1 | Basic Sanitation Among *Cadastro Único* Registrants (2014-2017)

No Water Supply						
Municipalities	2014	2015	2016	2017	Average	Variation
Canaã dos Carajás	71.2%	71.2%	62.9%	52.2%	64.4%	-26.7%
Marabá	66.9%	65.6%	65.2%	64.6%	65.6%	-3.6%
Parauapebas	36.6%	35.8%	36.5%	35.0%	36.0%	-4.4%

No Sewage System						
Municipalities	2014	2015	2016	2017	Average	Variation
Canaã dos Carajás	82.8%	79.0%	69.9%	64.4%	74.0%	-22.2%
Marabá	91.1%	90.3%	89.8%	90.3%	90.4%	-0.9%
Parauapebas	61.2%	61.6%	64.8%	72.4%	65.0%	18.4%

Source: Prepared by the author based on microdata from the Single Registry

Regarding water supply (Table 1), all municipalities showed improvements, with Canaã dos Carajás standing out for a 26.7% reduction in its population without access. However, their levels still differ. While Canaã dos Carajás reduced water access deficits the most, it still has a large share of CadÚnico registrants with inadequate water supply. Parauapebas, despite a smaller reduction (4.4%), has the lowest average share of the population without access (36%). Marabá performs the worst: with only a 3.6% improvement, it has the highest average (65.6%) of CadÚnico registrants



without water access. It also has the poorest sanitation outcomes, with 90% of registrants lacking sewage systems.

Following the trend in water access data, Canaã dos Carajás improved sanitation access, reducing its population without sewage services by 22.2%. In contrast, Parauapebas worsened, increasing from 61.2% to 72.4%, an 18.4% rise in CadÚnico registrants without basic sanitation.

Analyzing Cadastro Único data through a gender lens reveals that women comprise a significant share of registrants in these municipalities. In all territories studied, women accounted for over 50% of Cadastro Único registrants during the analysis period. Among them, there was an increase in the proportion of vulnerable women, including those classified as poor or extremely poor.

Marabá was the only municipality where the number of vulnerable women decreased. However, its rate remained the highest in the series, reaching nearly 95% in 2015. Notably, both Canaã dos Carajás and Parauapebas saw increases in women in poverty and extreme poverty, Canaã by 25 percentage points and Parauapebas by 33 p.p. Multiple factors may explain this trend, with migration driven by mining projects being the primary one (Cardoso et al., 2018), reinforcing the limitations of neo-extractivist development models.

Several factors exacerbate the vulnerability of women in the Cadastro Único, including access to sanitation. Evaluating the percentage of vulnerable women without adequate water access in Pará's municipalities, more than half of women in Marabá (63.55%) and Canaã dos Carajás (52.4%) lack this service. Parauapebas (34.3%) performs better but remains below sanitation agency benchmarks (PNUD, 2006). While these figures align with general population trends (Table 1), it is important to note that sanitation deficits disproportionately affect women, as they are socially assigned water-dependent domestic tasks (Silva et al., 2022).

Even more striking results emerge in sewage access. In Marabá, nearly all women in the Cadastro Único (90.1%) lack adequate sewage systems, the worst outcome among the municipalities. Parauapebas (72.4%) and Canaã dos Carajás (64.3%) also face significant service gaps. This situation has severe health implications, as many waterborne diseases are linked to poor sewage treatment (PNUD, 2006).

Access to education further deepens these women's vulnerability. A key indicator is the percentage of illiterate women among total female Cadastro Único registrants. In the studied municipalities, Marabá (average 23%) and Canaã dos Carajás (25%) have the highest rates of low-income illiterate women, followed by Parauapebas (21%). Disaggregating this data by race and age reveals additional layers of disadvantage (Table 2).

Table 2 shows the percentage of Black women among the total number of women who reported illiteracy in the CadÚnico. It is evident that most of these women are Black, highlighting the racial dimension of these vulnerabilities. With average rates exceeding 80% across all municipalities, illiteracy among Cadastro Único women in these areas has a marked racial character. In Marabá, an average of 95% of the women who reported illiteracy are Black. These findings underscore that, beyond gender, structural racism imposes harsher conditions on Black women.

Table 2 | Illiterate Black Women in the Cadastro Único (2014–2017)

Black Women						
Municipalities	2014	2015	2016	2017	Average	Variation
Canaã dos Carajás	86%	84%	86%	85%	85%	-0.64%
Marabá	95%	94%	95%	95%	95%	-0.39%
Parauapebas	87%	87%	87%	88%	87%	0.64%

Black Girls (7 to 12 years old)						
Municipalities	2014	2015	2016	2017	Average	Variation
Canaã dos Carajás	19%	19%	22%	22%	21%	19.97%
Marabá	20%	23%	26%	26%	24%	29.92%
Parauapebas	13%	18%	19%	21%	18%	54.78%

Source: Prepared by the author based on microdata from the Single Registry

Another notable pattern emerges when analyzing age. Table 2 shows that, among illiterate women, a significant portion are girls aged between 7 and 12 years old, with averages around 20%. This is one of the harshest realities: inadequate educational opportunities for these Black girls severely restrict their development, with long-term negative effects on employment and income prospects. Moreover, during the analyzed period, this group grew across all municipalities, reinforcing evidence that increased mining revenues have coincided with deteriorating educational conditions for this demographic.



CONCLUSION

The effects of the neo-extractivist model on the economy, society, and environment have been widely discussed in recent literature, as highlighted throughout this work. In Brazil, initial studies focused on regions with longer mining histories, such as Minas Gerais, and more recently began incorporating the eastern Amazon, especially Pará. Despite these research advances, there are still few studies discussing the economic and social conditions of women in neo-extractivist territories in Brazil. In this sense, this work seeks to advance this discussion by presenting a brief socioeconomic overview of the living conditions of women in the main mining municipalities of Pará, namely Marabá, Parauapebas, and Canaã dos Carajás, using microdata from the Cadastro Único for the years 2014 to 2017.

The research contributes to the field of regional development by articulating a critique of the neo-extractivist model with an empirical approach focused on gender and racial inequalities in Amazonian territories, something still little explored in the literature (Warnecke-Berger et al., 2023). By using Cadastro Único microdata to analyze the living conditions of women in mining municipalities in Pará, the study introduces an intersectional perspective that challenges predominantly macroeconomic and fiscal analyses of the effects of mining on regional development (Hawkins, 2024). Thus, the research advances the scientific agenda by proposing a territorialized and socially differentiated reading of the impacts of extractivism, reinforcing the need for public policies that consider the multiple dimensions of vulnerability and deepening the debate on territorial justice in the Amazon.

Initially, the results demonstrate a scenario of widespread poverty and vulnerability in the studied municipalities. This reality worsens when specifically analyzing women in these mining areas of Pará. This is evidence that mineral neo-extractivism is associated with difficulties in access to education, basic sanitation, and income.

Regarding the sanitation indicator, the results are representative and highlight the degree of vulnerability faced by low-income women in mining territories. In terms of water supply, Canaã dos Carajás (52.4%) and Marabá (63.5%) stand out, with more than half of low-income women



lacking adequate access. On the other hand, Parauapebas stands out for a high percentage of women without access to adequate sanitation (72.4%). The income indicator also shows significant variation. All three municipalities presented alarming results. In these locations, more than half of the low-income women registered in the Cadastro Único were below the poverty line, with values close to the national average in 2017.

As for education, the data reveal a particularly serious situation, especially for Black girls. Considering that education is a fundamental human right and that the lack of access to it can have significant consequences on these girls' lives and futures, it becomes urgent to develop public policies specifically targeted at this group.

From a broader perspective, it becomes clear that women in Pará, located in the Amazon region, experience restricted economic and infrastructure conditions, despite the municipalities receiving significant CFEM revenues and being among the highest generators of mining royalties in their state and in Brazil. The analysis of these data becomes even more compelling when incorporating the concept of intersectionality. Intersectionality refers to the interconnected nature of gender, race, and class, categories that intensify or differentiate structural disadvantages, placing Black, Indigenous, and poor women in positions of greater vulnerability (Biroli, 2016; Biroli & Miguel, 2015; Passos & Souza, 2021).

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