

CRIME RATES IN URBAN SOLID WASTE DISPOSAL AREAS IN THE MUNICIPALITIES OF ANANINDEUA AND MARITUBA IN THE STATE OF PARÁ: A CASE STUDY IN THE DUMP AND IN THE SANITARY LANDFILL



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ABSTRACT

Most Brazilian municipalities still do not have an adequate place for the disposal of urban solid waste, causing serious problems. With this, the study aimed to analyze the Crime Rates in the area that covers the Aurá Landfill (Ananindeua) and the Sanitary Landfill (Marituba) from the bias of Intentional Lethal Violent Crimes – CVLI's. A survey of crime rates in the period from 2011 to 2021 was carried out through the database of the Integrated Public Security System. The results showed that the numbers of homicides were maintained in the Aurá dump if considered 5 (five) years before and 5 (five) years after the closure of the Aurá dump, with approximately 85 homicides for the same period included. In the Marituba landfill, there was a significant increase in homicide crimes in the Uriboca neighborhood, especially after 2015, the beginning of operations in the Marituba Sanitary Landfill, concluding that, even in a more controlled environment, which is the Landfill, there was an increase in the number of crimes analyzed.

Keywords: Homicide, Environment, Solid Waste.

INTRODUCTION

One of the greatest challenges facing society is the equation of the generation of waste caused by the immense consumption of goods and their incorrect disposal in the environment, which contributes to the increase of environmental impacts and social consequences, which causes socio-environmental destructuring, and may even lead to the criminal phenomenon in the surroundings of degraded areas (Cantoia; Ribeiro, 2020).

The large population growth and the increase in urbanization, with consequent disorderly occupation of the territory, can be listed as factors that contributed greatly to the high production of solid waste in the municipalities of Belém, Ananindeua and Marituba, causing a solid waste crisis after the enactment of the National Solid Waste Policy (PNRS) (Pereira; Junior, 2019).

The partial closure of the Aurá dump, located in the municipality of Ananindeua/PA, took place in August 2014 and involved environmental and social aspects in accordance with the National Solid Waste Policy (BRASIL, 2010). Only household waste was no longer discharged into the Aurá dump, representing a reduction of about 1,100 tons/day. However, it continues to receive civil construction waste (RCCs) among others, which correspond to a total of around 600 tons/day (Pinheiro, 2017).

In a recent article in the Diário Online (DOL), with the headline "Possible reactivation of Aurá generates criticism from civil society", it begins with the following observations: "negative the repercussion in several sectors of the announcement of the possibility of temporary reactivation of the Aurá landfill for the disposal of solid waste in the Metropolitan Region of Belém (RMB), after its closure, on December 1st, of the activities of the Marituba landfill" and continues with the observation of a resident, through the report: "We will all suffer from more fires, more contaminated rivers, increased poverty, in addition to illegal deforestation of what is still left of the standing forest to receive all the garbage" (Menezes, 2023).

In another press outlet, dealing with the same topic in 2023, more negative observations of the local reality of Aurá are evidenced, where the Federation of Industries of Pará (Fiepa) states that the possible resumption of the activities of the open-air dump to receive urban solid waste from Belém and the Metropolitan Region is unacceptable (Magalhães, 2023).

A journalistic article, prepared by Passos (2023), states that even years after deactivation, the dump still receives clandestine garbage, has collectors and is hit by fires, affecting residents, who complain about lack of inspection.

In the Metropolitan Region of the city of Belém/PA, the destination of the Urban Solid Waste (MSW) collected from 2015 onwards became the Waste Processing and Treatment Center (CPTR) in Marituba known as the Marituba Landfill, resulting in the discontent of the local population, mainly due to its location next to the urban center, the inadequate treatment of MSW and the inefficient inspection by the governments involved (Espírito, 2019).

The so-called "Marituba Sanitary Landfill", licensed in 2015, does not follow the legal precepts included in the National Environmental Policy, established by Law No. 6,938, of August 31, 1981, which aims to preserve, improve and recover the environmental quality conducive to human life and operates today exhibiting evident environmental and social irregularities. The residents of the municipality feel stigmatized and condemned to suffering. Marituba has high rates of unemployment and violence, with 77.2% of the population living in subnormal agglomerations, according to the nomenclature used by the IBGE to designate favelas, several cemeteries and the garbage dump from which diseases and bad smells come (Peixoto *et al.*, 2020).

The degraded environment contributes directly and indirectly to public safety problems, which can be easily proven by the high crime rates in the places with the greatest environmental problems. But, unfortunately, there are few studies that treat environmental conservation as a way to prevent violence and guarantee the improvement of public safety (Queiroz, 2019).

Melo and Matias (2015) cite the theory of social disorganization, which reports the role of neighborhoods as preponderant for violent areas when studying factors such as: employment, housing, among others; as well as the theory of routine activity, which studies the convergence of factors in space/time: victim, potential aggressor and absence of security, which may be happening in the degraded areas under study.

Thus, the present study is relevant, as it is based on the theories of environmental criminology and risk societies (Souza; Rodrigues, 2016), having addressed in the study the conflict areas of the Aura dump, in Ananindeua, and the Sanitary Landfill, in Marituba; and by analyzing the crime rates from the environmental bias, focusing on the criminal data in the so-called Intentional Lethal Violent Crimes – CVLI's of these areas.

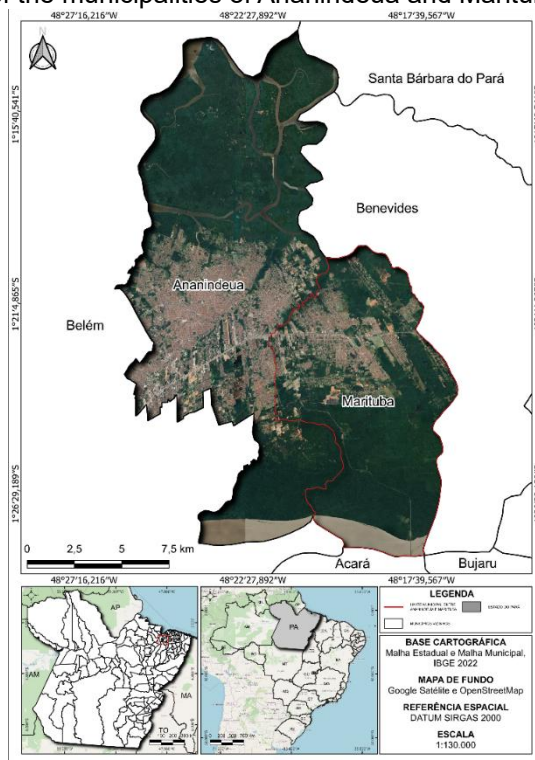
With this, the study aimed to analyze the Crime Rates in the area that covers the Aurá Landfill (Aurá neighborhood) in the municipality of Ananindeua and the Marituba Landfill (Uriboca neighborhood) in the municipality of Marituba, from the perspective of Intentional Lethal Violent Crimes – CVLI's, in the period from 2011 to 2021, as well as to identify the existence or not of public security and social policies; and to propose alternatives for security programs public and social aspects for the two areas of study, interconnected with the environment and its conservation.

METHODOLOGY

CHARACTERIZATION OF THE AREAS OF STUDY

The study covers two municipalities in the State of Pará, Ananindeua, where the Aurá Landfill is located, and Marituba, where the Marituba Sanitary Landfill is located, the main objects of this research, both located in the metropolitan region of the capital of Pará (Belém), which can be analyzed in Figure 01, which presents the location of the municipalities of Ananindeua and Marituba.

Figure 01: Location of the municipalities of Ananindeua and Marituba in the State of Pará



Source: Prepared by the Authors, 2024

City of Ananindeua - Aurá Dump

The municipality of Ananindeua is the second most populous municipality in the state with approximately 479 thousand inhabitants, in a territorial area of 190.581 km², with a demographic density of 2,512.20 inhabitants/km², with Belém, Marituba and Benevides as neighboring municipalities (IBGE, 2022), where the Aura Landfill is located.

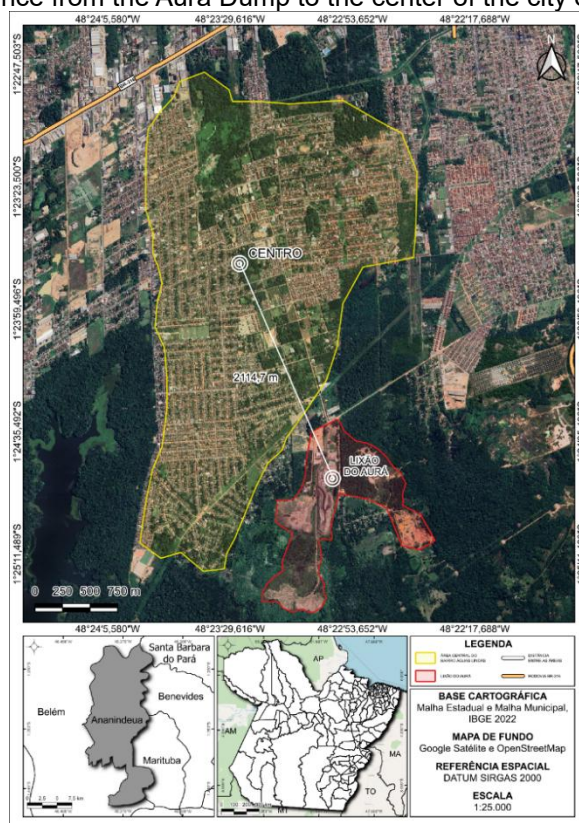
Ananindeua, according to IBGE data (2022), has a municipal human development index of 0.718, which characterizes a high degree of human development, considering *per capita income*, education of citizens and life expectancy.

The city has its origin linked to the riverside communities and began to be populated from the old railroad of Bragança. In 1938, it became a district of the municipality of Santa Isabel, but then, on December 30, 1943, through State Decree-Law No. 4,505, promulgated by the then state interventor Joaquim Cardoso de Magalhães Barata, having been installed definitively on January 3, 1944, becoming a *de facto* municipality. Currently, it is the second most populous municipality in the State of Pará, and the third most populous in the North of Brazil (Silva; Rodrigues, 2021).

As a result of various manifestations of urban and rural phenomena in the Amazon, the municipality of Ananindeua has been configured as a space of intense and accelerated socio-spatial transformations, especially from the 2000s onwards, as a product of the processes of extensive urbanization of the Amazonian space and metropolization of the Belenense space, processes that have contributed to the production of diverse and unequal urban and rural relations (Rodrigues *et al.*, 2018).

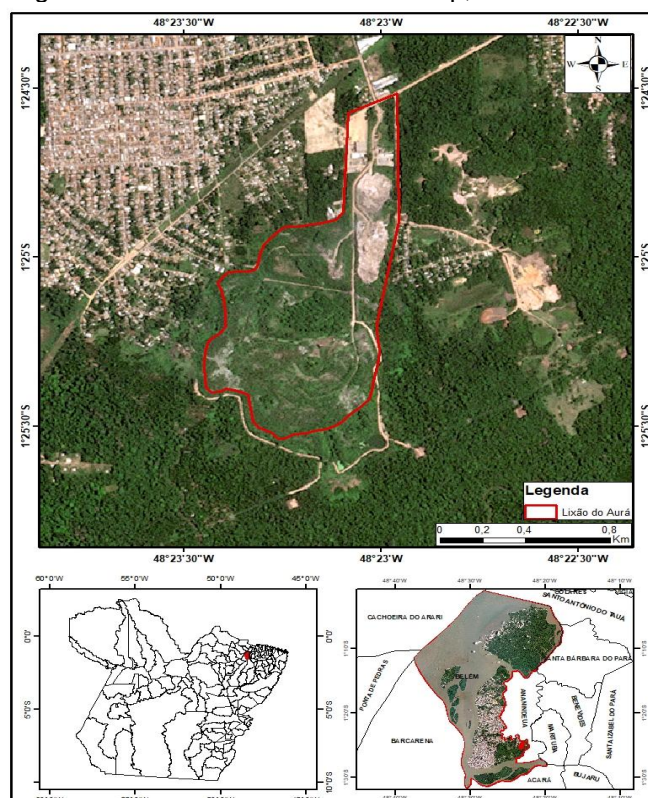
In this same municipality is the Aura dump, with latitude of 1° 25' 5" South, Longitude of 48° 23' 13" West and Altitude of 10.8 meters, being located in the neighborhood of Aurá, in the southeast region, between the neighborhoods of Águas Lindas and Curió-Utinga. Figure 02 shows the distance from the Aurá dump to the center of Ananindeua, with approximately 2 km, and Figure 03 shows the location of the Aurá dump, within the Metropolitan Region of Belém, from the perspective of the municipality of Ananindeua, the State of Pará and Brazil.

Figure 02 - Distance from the Aurá Dump to the center of the city of Ananindeua/PA.



Source: The authors.

Figure 03 - Location of the Aura Dump, in Ananindeua.



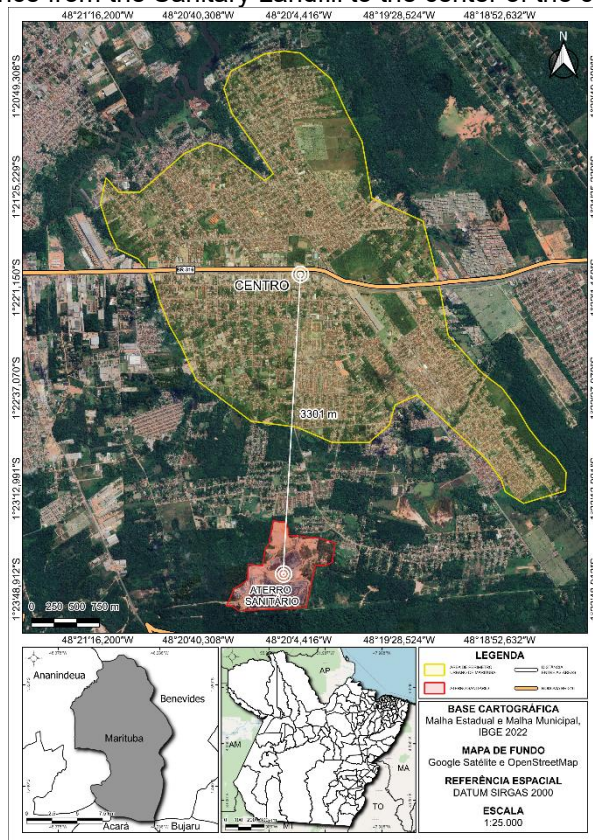
Source: Prepared by the authors, 2024.

City of Marituba – Marituba Sanitary Landfill

Marituba, according to IBGE data (2022), has a municipal human development index of 0.676, which characterizes an average degree of human development, considering *per capita* income, education of citizens and life expectancy. The latest survey pointed out that infant mortality in the municipality of Marituba has numbers of 12.61 deaths for every 1000 live births. And its schooling, when thinking about children and young people from 4 to 14 years old, covers about 95% of its citizens.

Marituba is 11 km away from the capital and occupies an area of 103,343 km², with a latitude of 01° 21' 19" South, longitude of 48° 20' 31" west and an altitude of 24 meters, having the smallest total area among the municipalities of Pará. According to data from the Brazilian Institute of Geography and Statistics – IBGE (2022), its population is estimated at approximately 110 thousand 515 inhabitants, where the Marituba Sanitary Landfill located in the Uribocha neighborhood is located, being distant from the center of Marituba, approximately 3.4 km, as shown in Figure 04 and Figure 05 presents the location of the Sanitary Landfill, within the Metropolitan Region of Belém, from the perspective of the municipality of Marituba, the State of Pará and Brazil.

Figure 04 - Distance from the Sanitary Landfill to the center of the city of Marituba/PA.



Source: Prepared by the authors, 2024.

In its geographical aspects, it has specific natural characteristics. One of them is the presence of a hydrography that crosses its territorial extension, being cut by several streams and rivers. Among the main ones are: Uriboca, Itapecuru and Ananindeua, the latter being an old access to the village of Marituba (Junior; Corrêa, 2018).

The main economic activities of Marituba are, practically, agriculture, which serves as consumption for the local farmer himself, with the surplus destined to the market of the municipality itself; and livestock, which stands out in the raising of roosters, chickens and chicks, cattle, pigs, horses, goats, mules and donkeys for milk management and, in the case of chickens, for the sale of eggs (Junior; Corrêa, 2018).

The Urban Waste Processing and Treatment Center – CPTR is a private enterprise consisting essentially of a sanitary landfill, sorting unit, composting shed, and effluent treatment by reverse osmosis, for the receipt and final disposal of Class II A Urban Solid Waste (NBR 10004/2004), that is, household solid waste, pruning and weeding, sweeping and cleaning of street markets, generated by the municipalities of the RMB. It has an area of 1,110,000m², which are divided between the Processing/Treatment Units and Support Infrastructure and Environmental Preservation Area (Bahia; Leal, 2017).

DATA COLLECTION AND METHODOLOGICAL PROCEDURES

According to the survey of the number of schools, health centers, police stations, among others, according to the local municipalities, the following was observed, as shown in Table 01:

Table 01: Survey of establishments and students enrolled in the neighborhoods of Aurá and Uriboca

NEIGHBORHOODS	Esc Mun	Esc Est	Esc Par	Cre Mun	Mat Students	UBS/UPA	Private Hosp.	PS/SUS	DEL
Aurá – Ananindeua	03	02	01	01	1836	01	01	01	01
Uriboca – Marituba	01	00	01	01	1125	00	01	01	00
TOTAL GENERAL	04	02	02	02	2961	01	02	02	01

Legend: Esc. Mun.: Municipal School; Esc. Est.: State School; Esc. Pair.:???; Cre Mun.: ??; Mat.: Enrolled; UBS/U: ??; Hosp.: Hospital; PS/SUS: ??; DEL:??.

Source: Prepared by the authors, 2024.

To study these areas, the research was carried out **in stages**, as shown below. An extensive bibliographic and documentary research was carried out, *online*, in scientific databases, such as Capes Journals, *Web of Science* and *Science Direct*.

Brito *et al* (2021) point out that, for the development of scientific research, considering the investigation procedures, there are several modalities that can be adopted by researchers, including bibliographic research.

For the selection of articles, 5 (five) criteria were necessary: (a) to define the keywords that represent the objective of the article, mainly and not exclusively in Portuguese and English; (b) define the Boolean operators mainly and not exclusively in the Portuguese and English languages; (c) define a filter for the period 2018-2023; (d) Tabulate in *Excel* to identify and exclude duplicate articles; and (e) Exclude articles in which the abstracts are not adequate with the objective of the article.

Classic works by renowned authors did not fit within the 2018-2023 period, however, some literature from the 70s, 80s, of the last century was verified, but fundamental to the foundation of the theoretical framework of the study.

A quantitative, exploratory and descriptive research was carried out in the study, based on data collection.

Brito *et al* (2021) show that, if the research has the primary purpose of, for example, establishing numerical and statistical data on a certain social phenomenon, the most appropriate type of research is that with a quantitative approach. However, if there is the intention of conducting a study with an emphasis on the knowledge of certain aspects of a subjective nature, which cannot be translated into numbers, the type of approach will be qualitative.

A survey of crime rates in the period from 2011 to 2021 was carried out through the database of the Secretariat of Public Security and Social Defense of Pará (SEGUP, 2023) available in the system of the Intelligence Center of the PMPA-C.Int and Civil Police of Pará - PCPA.

The data were organized according to their crimes: Homicide, Robbery and Bodily Injury Followed by Death, without discarding any data, as they were all important for the study. The data made available by the Assistant Secretariat for Intelligence and Criminal Analysis - SIAC subordinated to SEGUP (SEGUP, 2023) were only from Intentional Lethal Violent Crimes - CVLI's of the requested neighborhoods: Aurá (Ananindeua) and Uriboca (Marituba), in the period from 2011 to 2021.

METHODOLOGICAL PROCEDURES

First, the number of annual records between 2011 and 2021 involving crimes recorded by the Integrated Public Security System, related to Intentional Lethal Violent Crimes – CVLI's, which covers Homicide, Robbery, which is robbery followed by death, and serious bodily injury followed by death, was systematized.

After the registration of each crime, the quantity in each study area was accounted for for each year of the period studied between 2011 and 2021. The period covered of 11 (eleven) years was given to analyze the 5 (five) years before and the 5 (five) years after the closure of the Aura Landfill, in order to understand the pattern for Intentional Lethal Violent Crimes – CVLI's in the neighborhood of Aurá, municipality of Ananindeua/PA.

In the same way, the reason for the 11 (eleven) years of the study, for the neighborhood of Uriboça, municipality of Marituba/PA, to understand the dynamics of Intentional Lethal Violent Crimes – CVLI's in the 5 (five) years before the opening and the 5 (five) after the beginning of the Sanitary Landfill complex in that municipality.

A survey and analysis was carried out, together with government agencies and local city halls, of public policy projects aimed at safety around the communities surrounding the Aurá dump and the Marituba Sanitary Landfill.

Prevention strategies, when well planned and implemented, contribute to increasing the quality of life of citizens, enabling the responsibilities of public security, normally exclusive to the State, to also be assumed by citizens (PEREIRA, 2012).

The homicide rate is calculated by measuring the number of Lethal Intentional Violent Crimes, which include (Homicide, Robbery, which is robbery followed by death, and Bodily Injury followed by death), crimes that are typified in the Brazilian Penal Code, in its articles 121, 157, paragraph 3, item II and 129, respectively, occurred in a given municipality for every 100 thousand inhabitants. The World Health Organization (WHO) considers homicide rates above 10 per 100,000 inhabitants to be very high. The calculation formula is: $(\text{Total number of intentional homicides} \div \text{Total number of the population}) \times 100,000$ (Secretariat of Public Security and Penitentiary Administration, 2016).

The total number of intentional homicides (average verified according to the formula described above) of the population can be from the country, state, municipality, neighborhood, etc. In this study, it was decided to make the average by the number of inhabitants of the neighborhoods studied (Auré and Uriboça) and from there the national average was compared.

The World Health Organization and the Brazilian Public Security Forum (FSPB, 2023) characterize homicide rates as follows:

High homicide rate: This refers to areas where the homicide rate is substantially higher than the national or regional average. This can indicate public safety problems, violence, and significant crime.

Medium homicide rate: This refers to areas where the homicide rate is within the expected average for the region.

Low homicide rate: Indicates areas with below-average homicide rates. These regions generally have a lower incidence of violent crime.

Therefore, based on the raw data of each year's indices for the neighborhoods analyzed in the study and based on the indicators of the Brazilian Public Security Forum (FSPB, 2023), it was possible to characterize whether the neighborhoods are year by year in HIGH, MEDIUM or LOW for the indices of Intentional Lethal Violent Crimes – CVLI's, especially for the crime of Homicide.

RESULTS

AURÁ DUMP - ANANINDEUA

Table 02 presents the data on the occurrence of violence corresponding to the years 2011 to 2021, in the neighborhood of Aurá, a neighborhood that comprises the location of the Aurá dump, showing the same dynamics for the number of homicides if considered 5 (five) years before and 5 (five) years after the closure of the Aura Dump, with approximately 85 homicides for the same period.

The crimes of Robbery, which is robbery followed by death, and the crime of Bodily Injury followed by death, had very few cases recorded over the period analyzed, with 1 (one) and 6 (six) cases, respectively.

It is inferred that there may have been, on the part of the police record, at the time of the Police Inquiry, the indication of homicide; and *a posteriori*, in the composition of the police analyses and investigations, there may have been another indication of the typical fact, established in Decree Law No. 2,848 of December 7, 1940 of the application of the criminal law (BRASIL, 1940).

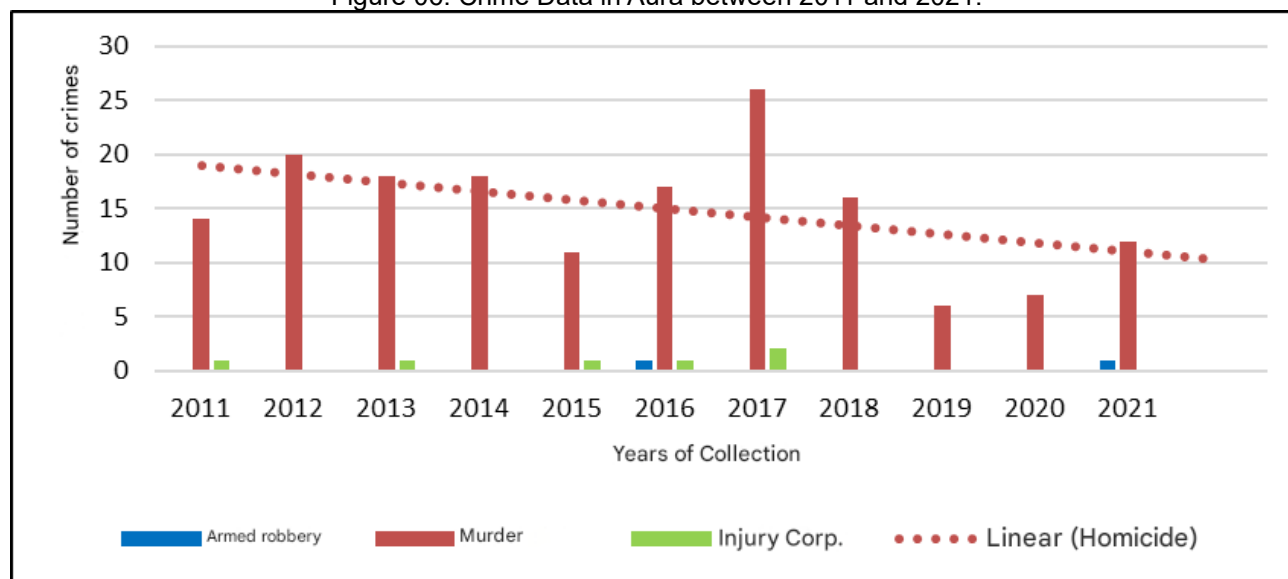
Table 02: Data on the occurrence of violence in the Bairro do Aurá, Municipality of Ananindeua.

AURÁ	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Robbery	0	0	0	0	0	1	0	0	0	0	1
Homicide	14	20	18	18	11	17	26	16	6	7	12
Bodily Injury	1	0	1	0	1	1	2	0	0	0	0
TOTAL/YEAR	15	20	19	18	12	19	28	16	6	7	13
GRAND TOTAL											173

Source: Prepared by the authors, 2024

Figure 06, which shows the number of crimes in the Aurá neighborhood in Ananindeua between 2011 and 2021, shows that the best years in the historical line, with a reduction in homicides, crimes that are most repulsed by society, were 2019 and 2020, agreeing with the period of closure of the Aurá dump, which was in 2015. This decrease was most likely due to the Global epidemic, caused by the Corona Virus – COVID 19, when a decrease in people walking the streets was observed.

Figure 06: Crime Data in Aurá between 2011 and 2021.



Source: Prepared by the authors, 2024.

URIBOCA NEIGHBORHOOD - MARITUBA

Table 03 presents the data on the occurrence of violence corresponding to the years 2011 to 2021, in the Uriboça neighborhood, an area that comprises the Marituba landfill project.

Table 03: Data on the occurrence of violence in the Uriboça neighborhood, municipality of Marituba.

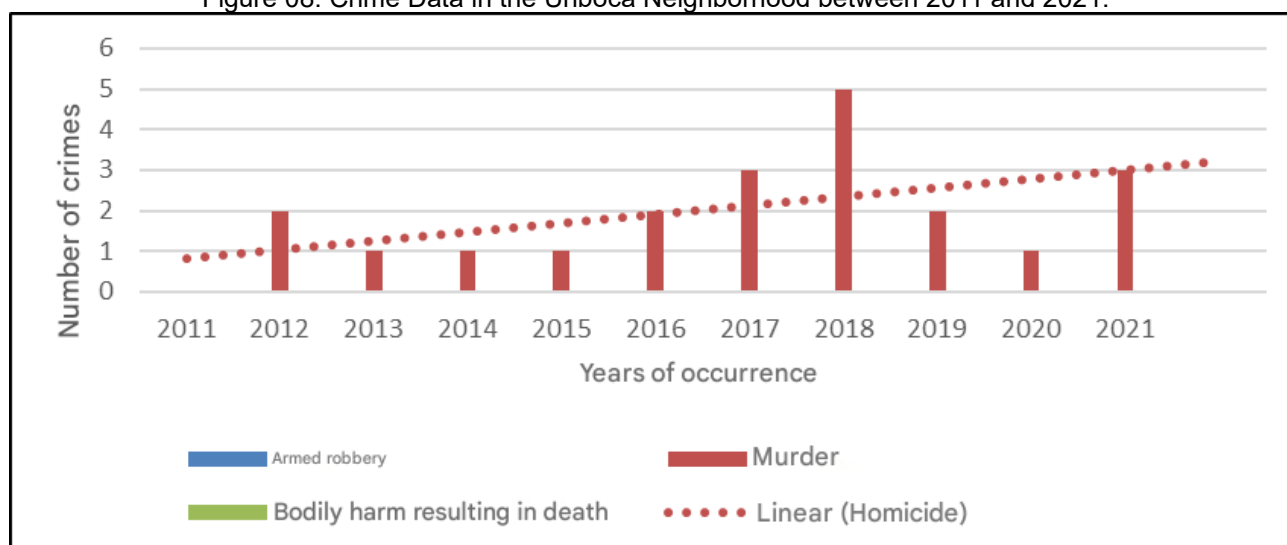
URIBOCA	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Robbery	0	0	0	0	0	0	0	0	0	0	0
Homicide	0	2	1	1	1	2	3	5	2	1	3
Bodily Injury Followed by Death	0	0	0	0	0	0	0	0	0	0	0
TOTAL/YEAR	0	2	1	1	1	2	3	5	2	1	3
GRAND TOTAL											21

Source: Prepared by the authors, 2024

Figure 08 shows the trend of increase in homicide crimes, proving that in the period from 2011 to 2021 the trend was upward.

Marituba, according to the Brazilian Forum on Public Security, referring to 2022, was among the 50 (fifty) most violent cities in the country, according to the rate of Intentional Violent Deaths, with a population above 100 thousand inhabitants, with a rate of 41.6 deaths for every 100 thousand inhabitants, well above the national average of 23.3 deaths (FBSP, 2023).

Figure 08: Crime Data in the Uriboça Neighborhood between 2011 and 2021.



Source: Prepared by the authors, 2024.

DISCUSSION

Regarding Table 02, in 2021 there was only 01 (one) record in the neighborhood of Aurá for the crime of Robbery, and zero for the crime of Bodily Injury Followed by Death, as opposed to the 12 cases of homicides. These data are in line with the data found by the Brazilian Forum on Public Security (FBSP 2023), as the crimes of Bodily Injury Followed by Death and Robbery have low rates compared to homicides. As an example, in 2021 there were only 110 (one hundred and ten) Robberies registered in the entire territory of Pará, and 28 (twenty-eight) crimes of Bodily Injury Followed by Death.

Although there was an increase in crime rates in the years 2019 to 2021, this increase was still lower than in previous years (put the year), showing a downward trend from the beginning of the study, in 2011, possibly with a direct relationship with the closure of the neighborhood dump. This may corroborate the hypothesis that in a more organized environment, with a clear separation of public and private space, already evidenced by Jacobs (2011), all this plays an important role in reducing crimes and in a greater sense of security for the residents of certain areas, which may be the case of the neighborhood of Aurá, in the municipality of Ananindeua/PA.

Another point that makes the analysis of the results more complex is the impact of data from the new IBGE census (2022), which found that the Brazilian population grew less than previously estimated and proposed a revision of all rates used in the period between 2010 and 2022 (FBSP, 2023).

Therefore, it is observed that the crime rates after the closure of the Aurá Dump are being reduced, showing that the neighborhood has possibly had less flow of people seeking to survive from the Dump and thus, perhaps no longer being co-opted for crime.

Observing the crime rates in the years 2016 and 2017 in the neighborhood of Aurá, it was observed that they were the highest in the historical line for homicides, meeting what was proposed by the Brazilian Forum on Public Security – FBSP (2023), and these crimes may have direct relations with criminal factions, due to disputes within the territory.

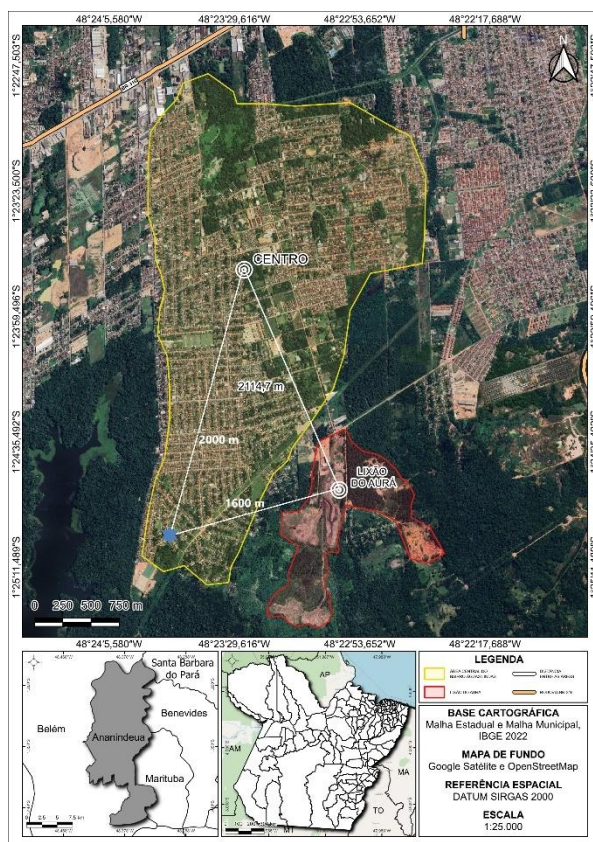
Another bias to be perceived and understood is that such homicide rates analyzed are possibly influenced by territorial disputes by militiamen and rival factions, which dispute the territory with the intention of profiting from the sale of drugs, weapons, criminal courts, which involves the decree of the death of some faction or not, as a result of adjustments in conduct based on the deliberation of the leader of a certain faction, agreeing with

Mittelbach's (2021) study on the territorial expansion of the militia and the criminal dynamics of the city of Rio de Janeiro.

Within this context, SGT PM A.T.C, a CGS student, from the Military Police (true occurrence), was brutally murdered, possibly by members of a criminal faction with links to the Rio de Janeiro Red Command, on March 8, 2024. It should be noted that the murderers' homicide was precisely in areas very close to the Aurá Dump. Figure 07 shows the exact location of the security agent execution.

The homicide and location of the criminals took place precisely inside the Lixão do Aurá, a place abandoned by the government, with rare access by reputable people, because in that place, in line with the theories of Janes Jacobs (1961), "there are no eyes on the streets", therefore, people willing to inspect other people and thus contribute to a safer environment and conducive to coming and going, what she called the "ballet of the sidewalks", therefore, becoming an ideal place for criminal practices.

Figure 07: Location of the Aurá Dump in Ananindeua and the site of the murder of a Public Security agent in Pará.



Source: Prepared by the authors, 2024

Table 03 shows a relevant increase in homicide crimes in the Uriboca neighborhood, especially after 2015, when operations began at the Marituba Sanitary Landfill. For the crime of homicide, there was an increase in cases by 39.4% in the period from 2016 to 2021, that is, the period after the opening of the Marituba Sanitary Landfill, to receive MSW from the metropolitan region of Belém, which can infer a greater flow of people in the Uriboca neighborhood, showing a relevant growth, especially in the years 2017, 2018 and 2019, corroborating with Alvarez et al. (2015) in their study on Crime location: space and execution victims in the municipality of Marituba, metropolitan region of Belém – PA.

Figure 08 shows that, in 2020, the number of homicides was below previous years; in 2021, there is a 300% increase for the same crime, possibly as a result of the relaxation of social distancing measures, caused by the Corona Virus epidemic, in agreement with the studies by Faria *et al* (2022), who observed the same behavior in Belo Horizonte/MG, because in 2020 there was a lower absolute number of crimes, with an average equal to 34%. Thus, the results of the survey confirm a significant impact of social isolation measures on crime, including crime against the person (homicide).

The municipality of Marituba has a rate of 41.6 deaths per 100 thousand inhabitants, almost double the national rate (FBSP, 2023). The Uriboca neighborhood, according to data from the 2022 Census, has approximately 12 thousand inhabitants, therefore, in 2021 alone, according to the analyses in Table 03, the Uriboca neighborhood had a homicide rate of 25 (twenty-five) deaths for every 100 thousand inhabitants, a rate above the national average, but well below the local average, which is 41.6 deaths for every 100 thousand inhabitants.

Still analyzing Table 03, no crime of robbery or bodily injury followed by death was observed in the Uriboca neighborhood, agreeing with data from the National Public Security Forum (2022), presenting the same pattern, as it is a national trend, with low criminal rates involving Robbery and Bodily Injury Followed by Death - LCSM.

The confirmation of the data from the General Department of Operations - DGO, of the Military Police of Pará - PMPA (SEGUP, 2023), was through confirmation in the General Bulletins of the Corporation, where some Service Orders were observed, which dealt with the following Operations: STRONGER POLICE, SAFE SCHOOL and DAWN OF PEACE.

After collecting all the data, a proposal was made to the respective Municipalities for programs that ensure the presence of public policies aimed at public security, such as: (a)

Proximity Police; (b) daily operations with the increase of Operation Stronger Police, Safe School and Madrugada da Paz.

According to information from the General Department of Operations – DGO/PMPA (SEGUP, 2023), in the neighborhoods analyzed, the existence of public security and social policies was observed in the vicinity of the dump, through the Military Police of Pará, which since the beginning of the new government administration, in January 2019, has adopted the Operation called "STRONGER POLICE", where extra garrisons are inserted in ostensive policing, increasing the police force in the period from 5 pm to 11 pm, based on the criminal stain of these areas and strategic policing points.

Another public security operation, according to the DGO-PMPA (SEGUP, 2023) is the so-called "SAFE SCHOOL", where a pair of military police officers take extra services in the two main school shifts, preventing possible attacks by active aggressors in schools in the Metropolitan Region of Belém, as well as making it difficult for factions to approach young students to the margins.

As in its Policing structure, the Military Police of Pará has the Great Environmental Policing Command - CPA within its organizational chart, being the Environmental Policing Battalion - BPA, headquartered in the Metropolitan Region of Belém (SILVA et al, 2014), it would be prudent for the BPA to act constantly in the areas studied, as alternatives for public security and social programs for the Metropolitan Region of Belém, interconnected with the environment and its conservation, together with the Department of the Environment – SEMAS, as well as the local city halls, and a commission can be created to discuss, analyze and propose environmental and public safety solutions for the neighborhoods served with large projects for the disposal of Urban Solid Waste – MSW's.

Another social bias to mitigate environmental degradation, the increase in violence in these neighborhoods, especially the Intentional Lethal Violent Crimes – CVLI's, the co-optation of people for trafficking, especially young people, is the installation of the project of a "USIPAZ – USINA DA PAZ", close to the dump of each neighborhood, as a form of social return to the citizens covered by the dumps and landfills project, because this program of the Government of the State of Pará was not observed in the neighborhoods analyzed.

In Figure 09, data from the Assistant Secretariat for Criminal Analysis – SIAC/SEGUP, where the crime rates of recent years in the neighborhoods where the TERRITORIES FOR PEACE Program was established are analyzed. Thus, it is observed that there was a reduction in Intentional Lethal Violent Crimes - CVLI's in all neighborhoods

covered by the program, especially in the neighborhoods of Icuí-Guajará (Ananindeua), Cabanagem (greater Belém) and Jurunas (greater Belém), with reductions of more than 80% in the homicide rate in the neighborhoods analyzed.

Figure 09: Crime Data in the Neighborhoods served by the "USIPAZ – USINA DA PAZ" program.

municipalities	NEIGHBORHOODS ²	TIME 1	TIME 2	TIME 3	TIME 4	TIME 5	Grand total
		1 YEAR BEFORE	1 YEAR START	1 YEAR LATER	2 YEARS LATER	3 YEARS LATER	
ANANINDEUA	ICUI-GUAJARA	32	19	16	7	4	78
	BENGUI	19	5	8	3	2	37
	CABANAGE	34	22	17	4	4	81
BELEM	GUAMA	59	32	31	17	27	166
	JURUNAS/CONDOR	46	37	22	26	12	143
	TERRA FIRME	26	11	11	13	8	69
MARITUBA	UNION/SAO FRANCISCO	5	1	1	3	3	13
Grand total		221	127	106	73	60	587

Source: SIAC/SEGUP, 2024.

The Peace Plants, according to the Strategic Secretariat for the Articulation of Citizenship – SEAC (SEGUP, 2023), are part of a larger program of the state of Pará, which is TERPAZ – Territories for Peace, under the coordination of SEAC itself, in partnership also with the private sector.

The Usinas da Paz, according to SEAC (SEGUP, 2023) are also concerned with violence prevention, social inclusion and community strengthening, with several axes within the project, ranging from technical and professional training, basic education, art and culture to engagement in the search for employment and income, microcredit and entrepreneurship, solidarity economy, as well as the promotion of environmental and social education.

Therefore, a totally inclusive program that provides young people from the periphery with prospects for study, work, income and distancing from dumps as a form of subsistence, as well as from the criminal environment.

In the study by Silva Filho et al. (2023) the feasibility of implementing a recycling and processing plant for civil construction waste in the vicinity of the Aurá dump is shown. It is also suggested the installation of Cooperatives aimed at the recycling of Urban Solid Waste, with greater participation of the environmental and social secretariats of each municipality involved in the issue of urban solid waste disposal in the Metropolitan Region of Belém, which involve the municipalities of Belém, Ananindeua and Marituba.

CONCLUSION

It was observed with the criminal data of the neighborhoods of Aurá and Uriboca that after the closure of the Dump there was a reduction in crimes in that area, on the other hand in the neighborhood of Uriboca, even in a more controlled environment that is the Marituba Sanitary Landfill, there was growth, therefore, not corroborating with the initial hypothesis that in a more controlled environment the trend would be the reduction of crimes committed by the people.

Thus, it will be prudent that the state entities, city hall, the conglomerate executing the project for the receipt of Urban Solid Waste – MSW, from the Metropolitan Region of Belém – RMB, the Military Police of Pará, Secretariats of the Environment and other *stakeholders* get involved in the process, aiming at the stabilization of the social relationship with the environment and, thus, being able to provide both an environmental return (smaller degraded areas for the resolution of the GARBAGE problem), and social (less involvement of people in crimes, with the decrease of Lethal Intentional Violent Crimes – CVLI's, related to the GARBAGE problem).

It was observed that the pandemic, caused by the Coronavirus (COVID-19), possibly had an influence on the data of occurrences, especially in the years 2020 and 2021, when government measures of social isolation contributed greatly to the reduction of the flow of people in urban centers and, thus, suitable and disreputable people stopped transiting and the numbers of Lethal Intentional Violent Crimes – CVLI's were also reduced, becoming one more variable, in addition to the environmental one.

By making a joint analysis of Figures 05 and 07, it can be confirmed that the crime rate may be related to environmental degradation, because with the end of the Aurá Dump the number of homicides in Aurá had a downward trend. In the Uriboca neighborhood, where the Marituba Landfill is located, this trend was the opposite, with an increase over time.

That it is important to strengthen and consolidate policies to combat drug trafficking, combat criminal factions, combat local militias, etc.

The Military Police of Pará, through the Environmental Policing Battalion, must be inserted in the context of the places studied in order to combat through ostensive policing, collateral damage to the environment itself and the local population, which are directly affected by local environmental issues and social ills, here studied public security.

Observing the evolution of Terapaz, through the Usinas da Paz, it was observed a very important State project to be implemented in the areas studied, as it brings a look in the social focus of the most important within a vision of citizenship, with the hooking of the local society, which seek to be inserted in various matrices: educational, environmental, social, various entertainments, etc. Thus, occupying mainly children and young people, who will have diverse focuses and a counterpoint to local crime, possibly with futures of escape from this local reality.

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