

A paradox of the social production of urban space: environmental sustainability and vulnerable territories in Londrina/PR/Brazil

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SUMMARY

The social production of urban space is marked by the segregationist pattern. This encourages denial of decent housing for a portion of the Brazilian population, which has to seek vulnerable territories (favelas) as a survival strategy. The aim of this article is to present the reality scenario where these vulnerable territories (favelas) are present in the urban space of Londrina/PR, which unfolds in the concern to enter into the paradox between the formal construction environment and these territories, as most of them are located in areas of permanent preservation (APP's), which by precept of the Laws: Forest Code (2012) Environmental Code of Londrina (2012), should be preserved. A qualitative approach was the used methodology in the research, with the theoretical-methodological framework based on Lefebvre (2006) and primary and secondary sources were used to obtain the data. Environmental laws clash with the information obtained in the survey: the existence of 69 vulnerable territories, with 3,160 families (10,867 people, 2017) rising to 3,815 families (12,240 people) in 2020 (LONDRINA, 2021). This reality results in the lack of convergence between the territorial planning policy (PDM) and policies such as: environmental, housing, environmental sanitation (other sectoral policies) that should be integrated in favor of the development of inclusive and socially and environmentally sustainable cities, which could contribute to overcoming the paradox of the social production of space.

Keywords: Vulnerable Territory. Territorial Planning. Environmental Preservation Area.

Introduction

The urbanization process, in which the social production of space takes place, fostering the replacement of the natural ecosystem by a territorial organization based on capitalist logic, which brings inequality at its core, which engenders a segregationist pattern in the Brazilian urban space. Socio-territorial segregation refers to the unequal access to urban facilities, mainly to decent housing for a large portion of the Brazilian population, who have to seek the slums as a survival strategy, which in this study are called vulnerable territories, and in their lived space become territories of resistance, since they are the expression of the struggle: against housing as a commodity and in search of inclusive and fair cities.

This form of social production of urban space translates into the paradox between environmental sustainability and vulnerable territories, in view of the inconsistency in the treatment of the environmental issue in terms of territorial planning policy, when one perceives the disconnection between “agenda green” and the “brown agenda”, in the municipal master plans by not “[...] reflecting efforts of an integrated management of urban-environmental conflicts, given the absence of explicit guidelines in this direction” (COSTA, et al, 2011, p.178).

In this context, the objective that centralizes this article is to present the scenario of the reality of the presence of these vulnerable territories (slums) in the urban space of Londrina/PR, through the territorialization-spatialization of the slums identified in the investigation, with the scope of highlighting the differences of and in space, which expresses the paradox of the production of urban space permeated by the struggle for survival and environmental preservation. From the perspective of bringing to analysis

the conflicts and contradictions, which generate, at the same time, the suffering of the oppressive domination of the abstract space (capital logic) and the appropriation of the perceived space, lived in the favela (territory of resistance). These concepts of space are part of the triad: perceived space (spatial practice), conceived space (representations of space, logic of capital) and lived space (spaces of representation, dynamics of everyday life), which underlies Lefebvre's lucubrations (2001, 2002, 2006), which was the theoretical-methodological basis of this investigation.

Favelas are considered territories of resistance, in the sense that the families that produce this lived space have to resort to a strategy of resistance in the face of a concentrated urban land structure that does not allow access to the formal city, which generates the informal city (MARICATO, 2013, 2017), which unfolds in territories of resistance, which are at the same time vulnerable. However, in this fight for the right of the city, the paradox between social and environmental sustainability is engendered, which translates into environmental justice.

In this context, the purpose of this reflection unfolds in the concern to enter into the discussion about the socio-environmental vulnerability present in these territories, since a large part is located in an area of environmental preservation. The geographical focus of the study are the favelas in Londrina, where their location stands out, in valley bottoms (urban rivers). It should be noted that the population growth of Londrina occurred intensely, namely: in 1950, there were 71,412 inhabitants arriving, in 2010, with 506,701 inhabitants, with 97.4% of the population located in the urban space and 2.6% in the rural area. Preliminary data from the 2022 Demographic Census indicate that the municipality has 588,125 inhabitants (IBGE, 2023).

The concern that guides this analysis is based on the premise that in the urbanization process the man-nature relationship expresses the socioeconomic inequality of the social actors that produce the urban space, marked by the formal and informal city. In the informal city, these actors start to produce their lived space (favelas) in an appropriation of nature that by legal precept should be preserved, since it constitutes permanent preservation areas - APP. Therefore, reality manifests the contradiction experienced by these families: survival and environmental preservation. This concern is present in the study carried out by Pelacani et al, (2020) in which the authors consider it relevant to think about the socio-environmental issue based on social inequalities.

Therefore, the environmental issue cannot be thought of separately from the existential issue of family survival, that is, a socioeconomic issue. Therefore, it is necessary to listen to this population and think about intervention in the territory through the dialogue between knowledge: popular knowledge that experiences the

space and scientific/technical knowledge, in the search for a socio-territorial transformation, to propose intervention strategies in the territory through urban planning that has as prerogative the principle present in the City Statute (Law nº. 10.257, of July 10, 2001) in its sole Paragraph that: “[...] establishes norms of public order and social interest that regulate the use of property urban environment in favor of the collective good, security and well-being of citizens, as well as environmental balance” (BRASIL, 2001), therefore, the environmental balance is intrinsically related to the environmental problem that permeates the built space, whether regulated by urban norms, whatever originates from the struggle for survival, vulnerable territories, and this is the point that centralizes the justification for carrying out this research.

It is important to point out that the environmental issue is an integral part of urban planning, as it is linked to environmental sanitation (in the definition contained in Law 11,445/2007, which includes: water supply services, sanitary sewage, urban rainwater management and waste management solid), housing, mobility and land use, therefore it is essential to carry out research aimed at the occupation of urban land (built environment) in its different realities and dimensions, in order to be able to apprehend and analyze the concrete conditions and, in this way, how based on this diagnosis, contribute to the elaboration of an urban development policy aimed at socio-environmental sustainability.

Methodological procedures

The methodology used to achieve the scope proposed in the investigation was based on the collection of data from bodies and institutes, such as: COHAB-LD (Companhia de Habitação de Londrina), City Hall, IPPUL (Institute of Planning and Urban Research of Londrina, IBGE (Brazilian Institute of Geography and Statistics). And the carrying out of field studies (fieldwork) which, due to the COVID 19 pandemic, opted for the observation technique and photographic record. Statistical data were used to outline the general panorama of the urban slums of Londrina, from the perspective of apprehending the segregationist dynamics experienced by families that need housing to survive. Reflection on a theoretical-methodological framework based on Lefebvre (2001, 2002, 2006), having dialectics as a paradigm, to apprehend the social production of urban space through the concepts: perceived, lived and conceived space, based on the regressive-progressive method defended by the author. It is clarified that the research used a qualitative approach, because, “[...] it is what applies to the study of history, relationships, representations, beliefs, perceptions and opinions, products of

interpretations that humans do about how they live, build their artifacts and themselves, feel and think” (MIYANO, 2010, p. 57). The other methodological resource used in the investigation was document analysis, which can be defined as a technique whose purpose is the “[...] intense and extensive examination of various materials, which were not used for any analysis work, or that can be re-examined, seeking other interpretations or additional information, and this search is done through documents” (JUNIOR, et al, 2021, p. 40), mainly with regard to legal documents with the laws.

Research results

The paradox between environmental sustainability and the survival of a poor portion of the Brazilian population (without access to technical and social urban infrastructure) is a problem that refers to territorial planning guidelines.

It should be noted that these guidelines are defined by urban planning, through the elaboration of the municipal master plan (PDM), which constitute the main instrument of the municipal public policy of urban development, and it must follow the precepts of the federal law, the City Statute -EC (2001). One of the objectives that centralizes the aforementioned Law stands out, in Article 2, item I “guarantee of the right to sustainable cities, understood as the right to urban land, housing, environmental sanitation, urban infrastructure, transport and public services , work and leisure, for present and future generations” (BRASIL, 2001).

This objective is essential when observing that the PDM, being the main municipal urban planning policy, is not managing to reach this scope present in the law that governs it, since the absence of decent housing is the expression of the territories vulnerable. This statement gains relevance when it is verified that the number of occupied households in subnormal clusters increased from 3,224,529 (2010) to 5,127,747 (2019), and the total number of subnormal clusters from 6,329 to 13,151, in the entire national territory (IBGE, 2020). It should be noted that there are other local meanings for the definition of subnormal agglomerations, such as: village, stilt house, invasion, community, slums, irregular occupations, among others. Regardless of the definition adopted, the common point that unites these territories is that they have the following characteristics:

[...] the lack of technical (basic sanitation, energy, garbage collection, etc.) and social (health, education) infrastructure, in addition to the precariousness of housing, generally located in inappropriate areas (banks of urban rivers, old dumps , areas with a steep slope), mostly located in - areas of permanent preservation - APPs, which by prerogative of Law (n° 12.651/12) should be preserved. (ANTONELLO, 2022, p. 278)

This dynamic takes place at the municipal scale, with vulnerable territories in

Londrina/PR/Brazil being produced and lived by 3,160 families (totaling 10,867 people) who survive in precarious housing in 69 favelas (LONDRINA, 2021), which are constituted in the space lived by them, in the struggle for decent housing. These territories are spatially distributed in the urban space as follows: North Zone, with 49.93% (1,578 families), South Zone 30.82% (974 families), East Zone with 14.77% (467 families), West Zones 3.79% (120 families), Centro 0.66% (21 families) and in rural areas there are 107 families in slums in the rural districts of the municipality, in 2017 (Figure 1). There was an increase in the number of families in this household condition, reaching 3,815 families, totaling 12,240 people, in 2020 (LONDRINA, 2021).

Figure 1 highlights the location of these territories on the banks of urban rivers in Londrina, which are Permanent Preservation Areas (APP's), as set out in the Forest Code, Law No. 12,651, of May 25, 2012. Permanent Preservation, in item II of Art. 3 like:

Permanent Preservation Area - APP: protected area, covered or not by native vegetation, with the environmental function of preserving water resources, landscape, geological stability and biodiversity, facilitating the gene flow of fauna and flora, protecting the soil and ensure the well-being of human populations. (BRASIL, 2012)

On a local scale, there is Municipal Law nº 11.471, of January 2012, which establishes the Environmental Code of Londrina, which defines permanent preservation along rivers, streams, springs, lakes and reservoirs, that is, in Art. 129 states:

§ 1 The permanent preservation area will be calculated in horizontal projection, from the limit of the floodplain or floodplain, in the highest flood level of the water body in question.

§ 2 The permanent preservation area (APP) of the floodplains will be 50m (fifty meters), from the limit of the floodplain.

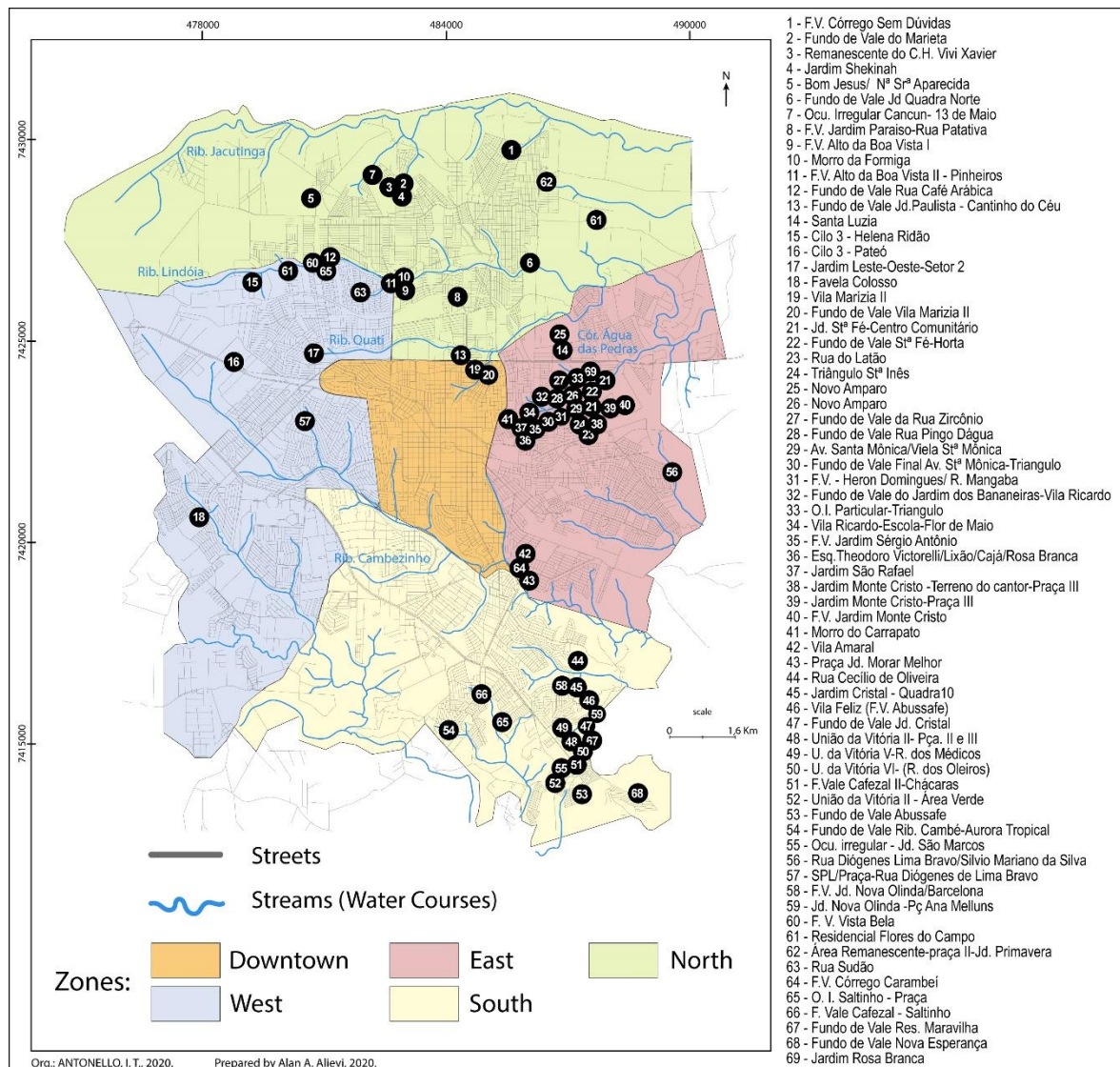
§ 3 The suppression of permanent preservation areas dealt with in this article will depend on authorization from the competent state environmental agency, with prior consent, when appropriate, from the federal or municipal environmental agency, subject to the provisions of § 4 of this article.

§ 4 The suppression of vegetation in a permanent preservation area located in an urban area will depend on authorization from the competent environmental agency, based on a technical opinion. (LONDRINA, 2012).

It is clear in the environmental laws (federal and municipal levels) the definition of permanent preservation, therefore, the presence of vulnerable territories clashes with the environmental law, precisely because of the lack of convergence between public policies for land use planning (PDM) and policies such as: environmental, housing, urban mobility and other sectoral policies that should be integrated in favor of a more balanced urban built environment, aimed at an inclusive and socially and environmentally

sustainable city. This statement is supported by the study carried out by Costa; et al, on the assessment of the environmental issue present in the PDMs when concluding the importance of “[...] an integrated approach to environmental issues and other sectoral policies, which continue to be treated in a segmented and often conflicting manner, without effective mechanisms of compatibility (COSTA; et al, 2011, p. 177).

Figure 1 – Vulnerable territories in Londrina 2017.



It can be seen in Figure 1 that the spatial concentration of favelas/vulnerable territories is found on the edges of the urban fabric, in addition to riverbanks, that is, on

the urban periphery, mainly in regions marked by socioeconomic inequality in Londrina. One can report the periphery of the Southern Region, in which poverty is revealed not only by the low income obtained by the heads of families, but by the lack of job opportunities, by the crime rates, thus suffering from the precariousness of urban infrastructure, particularly with the deficiency of urban equipment related to health, education and means of transport. The socio-spatial segregation process is an expression of the “[...] dynamic imposed by the market logic, it is understood that segregation is the materialization in the urban space of the economic, political, social and cultural exclusion of the population with low purchasing power , in the sense that it is present in the daily lives of people living in the city” (MARQUES DA COSTA; ANTONELLO, 2021, p.4).

Again, the issue of the importance of integration between public policies, both social and technical, looms large, mainly, the presence of vulnerable territories refers to housing policy, in this sense Lima and Mendonça (2001), point out that the housing issue is correlated with the environmental issue, then:

Even before improving existing housing standards, with a view to optimizing energy consumption, or using materials and processes that cause less impact on the environment, conditions of extreme poverty must be verified, in which citizens use sub-housing, configuring It is a social problem and the responsibility of the State. (LIMA; MENDONÇA, 2001, p. 142).

There is an imperative need to expand the public housing policy in order to review the condition of "vulnerability" of families, which is experienced in their living space, in their daily lives, due to housing precariousness, which subjects this population to greater risks. such as: diseases, violence, environmental disasters, since they are mostly located in areas of environmental fragility, this process of vulnerability is related to factors: social, economic, historical, and natural (ACSELRAD, 2008).

The urgency of drawing up and applying social and technical public policies can be verified by the data shown in Table 1. The study carried out by the Paraná Housing Company - COHAPAR (2019), expresses the housing deficit in Paraná, and the breakdown is the vulnerability of this needy population that does not have access to decent housing, in the definition of the typology present in the study it is clear the precariousness, risk and lack of habitability of the homes that the population uses in the struggle for their survival, particularly when taking into account the characteristics that were considered in the classification, two are emphasized, namely: in relation to location “[...] risk, preservation, right of way for highways/railways, airports, high voltage, dump, flood, landslides, infectious diseases, etc. Standard (wood, masonry, canvas, etc.) and state of housing (good, precarious, uninhabitable)” (COHAPAR, 2019, p.6). This matrix conflicts

with the formal production of urban space, which is managed by urban norms and standards determined by law.

These housing conditions are intrinsically linked to economic, social and environmental issues, therefore permeating environmental justice, as “[...] situations of risk and social vulnerability to which individuals and families are subject are not restricted to economic issues and social [...], but also to the environmental burden, predominantly concentrated in such disadvantaged groups” (HOFFART; ANTONELLO 2021, p.32).

Table 1 - Housing Needs - Paraná - Urban - 2019

Type	Housing numbers
Urban Registry	400.834
Consolidable and non-consolidable Precarious Settlements Consolidable – are subject to urbanization and regularization. Non-consolidable - These are the ones that cannot be urbanized or regularized because they are located in an area of environmental preservation or at risk.	194.075
Irregular Occupancies/ Favelas: most of them lack essential public services and have a limited road system with an irregular layout, undefined or irregular lots, configured by the disorder of self-built buildings.	114.130
Degraded Housing Complexes: These are housing complexes with a lack of basic infrastructure and/or with constructive risk (which cannot be confused with problems of lack of maintenance) and/or irregular. They can be totally or partially empty.	4.055
Slums: Adapted properties, initially intended for a single family, commercial, industrial activity or any other function, but which, due to the degradation of the neighborhood or the property, were subdivided internally into rooms for rent.	220
Irregular Subdivisions: Settlement promoted by a subdivision agent, areas of at least 10 households that were subdivided and sold and are disorderly occupied or not by low-income population that, although they may present physical characteristics of regularization	75.670
Urban Total	594.909

Source: COHAPAR, (2019, p.8 -11)

The movement in defense of environmental justice takes into account the reality of vulnerable territories by exposing that “[...] environmental risks are not global and do not affect everyone in an indistinct way. The environmental burden generated by the reproduction of capital is mainly located in spaces where people are excluded, whether due to race, poverty or ethnic issues (HOFFART; ANTONELLO 2021, p.28).

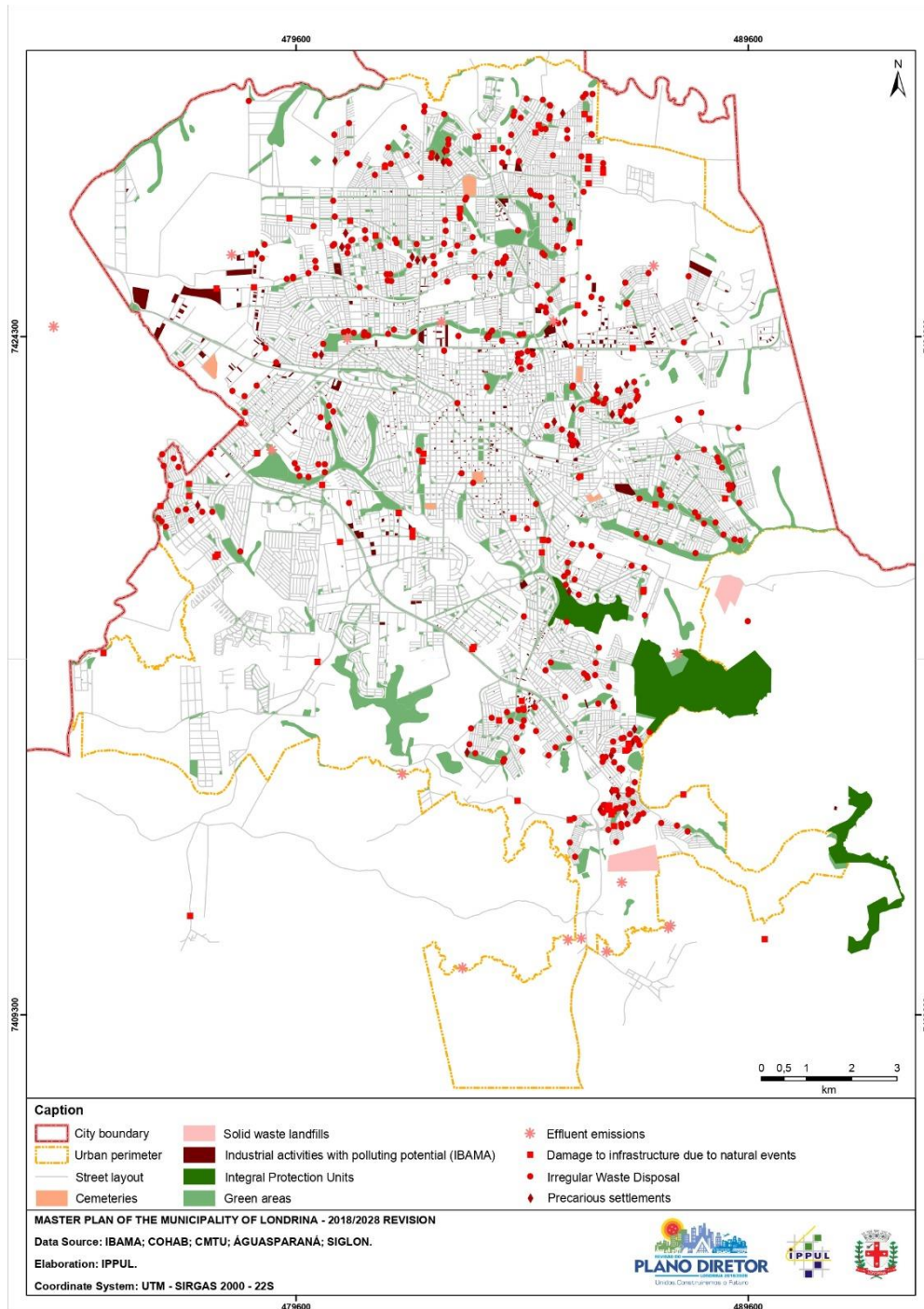
This statement is visible in Figure 2, in which the areas of environmental risks in Londrina are specialized, it can be seen that irregular occupations are present, here in this study called vulnerable territories, this definition makes sense based on the concrete conditions of existence of these territories presented in this reflection, as well as emerges in the analysis of Figure 2.

Two variables used in the IPPUL study (2018) stand out: a) the irregular disposal of urban waste, b) irregular occupations. Those included in the environmental risk category, considering that they occur mainly in the urban periphery (limits of the urban area), coinciding with the green areas, valley bottoms and urban voids. We can see the overlap in the location of these two dynamics in space, therefore, the population of occupations (vulnerable territories) is exposed to risks: sanitary, security (floods, floods, landslides, among others), primarily, this population, in addition to the absence of dignified housing has to coexist with the illegal disposal of urban waste generated by the formal city.

Of course, the correspondence between these two variables is also linked to the lack of basic and regular garbage collection services in most of these territories, in addition to the collection of recyclables carried out by the population as a way of earning income. Figure 3 presents an extract of the landscape of vulnerable territories in Londrina. Another point that the IPPUL study points out is that these areas (urban voids, valley bottoms) are perceived as “abandoned” by the population in general. It is important to underline the conclusion of the technicians in relation to these areas:

[...] that the marginal regions, where the action of the public power is less effective and the legal regulation (city-countryside transition area) is flawed or non-existent, the urban voids and valley bottoms, perceived as abandoned by the population, are more susceptible to environmental hazards. (IPPUL, 2018, p. 47)

Figure 2. Environmental risk areas in Londrina/PR, 2018.



Source: IPPUL, 2018

The considerations presented in the IPPUL technical study are in line with the concern of this investigation, when reflecting on the paradox between the urban built environment, whether formal or informal, and the role of the public power to achieve the sustainability of cities, thus the neuralgic point is in defend the fundamental importance of the convergence of sectorial social public policies with territorial planning (PDM).

Figure 3 – Vulnerable territories – Londrina -PR.



Photographs: Rodela (2022), Antonello (2020,2021,2022).

A, B, C, D (correspond to different territories).

The discussion of environmental conflicts (environmental risks) in the production of urban space fits into the analysis carried out by Acsehrad (2015), when questioning:

Such an expression of the lack of agreement between spatial practices in cities could give sociological substance to the notion of urban “unsustainability”. That is, the conflicts would be the living expression of the social perception of the irreproducibility of spatial practices in cities and the difficulties of enforcing institutions and norms capable of regulating them in order to reproduce urban social relations compatible with the requirements of the capitalist city. (ACSELRAD, 2015, p.65)

Therefore, the notion of “unsustainability” is related to the unequal production of urban space that engenders socio-territorial segregation and, in its wake, environmental injustice. social actors to express this “unsustainability” or/and the problematization resulting from it, thus, these conflicts can be obscured or on the contrary be recognized, which can encourage a change strategy for cities, at a time when:

Dealing with these conflicts in the political sphere could be, from this perspective, the path to an « urban sustainability » seen from the perspective of the democratization of cities, that is, of facing the conditions of vulnerability of the most dispossessed and least wealthy social groups. represented in the spheres of power. (ACSELRAD, 2015, p.66)

It is in this path traced by the author that an urban planning and management based on social participation is defended, in the struggle that actually develops urban development policies anchoring the EC principles, aiming at a democratic city, which can defend and achieve the objective of the function social life of the city and urban property.

Conclusion

In view of the reality of vulnerable territories, it is clear that a political stance is needed to face this urban problem in order to reverse the trajectory of urban “unsustainability”, which, as Acselrad (2015) proposes, can be the symptom diagnosed and expressed by the social actors themselves who experience the results of this contradictory logic that marks the production of urban space.

In this context, it is considered that in the vulnerability experienced and suffered in everyday life, these territories become territories of resistance, from which emanates the struggle to overcome time and space as a commodity, marked by exchange value, which materializes in the structure concentrated urban land, involved in the representation of space, which neglects and subjugates space as a use value, the spaces of representation. Thus, the right to housing is linked to market value, which forges resistance, manifested in the favelas, which demonstrates the possibility of breaking/fighting against the homogenization of abstract space (from the logic of capital), fostering differential space, via the establishment of a lived space in favor of urban sustainability.

The spatialization of vulnerable territories/territories of resistance reveals the socio-territorial segregation of these families. This reality manifests the Brazilian difficulty in achieving the objectives of Sustainable Development/SDGs (UN Brazil, 2022), in particular, SDG 11 (Sustainable Cities and Communities) of the 2030 Agenda, being the maximum expression of the paradox of the built environment. Therefore, it is by acting to break the contradiction that encloses the logic of the production of this space that one can believe and move forward to achieve SDG 11, but for this it is necessary to have a convergence between social public policies and urban development,

through the implementation in the territory of the legal framework in the planning of urban territory, both in the City Statute (2001) and in the Forestry Code (2012).

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