

Socio-spatial Segregation and Climate Vulnerability in Urban Peripheries

Jeane Aparecida Rombi de Godoy

Professor at the University Center of Várzea Grande (UNIVAG).
PhD in Architecture and Urbanism, Mackenzie Presbyterian University (UPM).

jeane.godoy@univag.edu.br

<https://orcid.org/0000-0003-4577-4651>

Sandra Medina Benini

Professor at the University Center of Várzea Grande (UNIVAG).
PhD in Geography, São Paulo State University (FCT/UNESP), and PhD in Architecture and Urbanism, Mackenzie Presbyterian University (UPM).

sandra.benini@univag.edu.br

<https://orcid.org/0000-0002-7109-8717>

Allan Leon Casemiro da Silva

PhD in Agribusiness and Development, São Paulo State University (UNESP).

allan.leon@unesp.br

<https://orcid.org/0000-0002-2397-3492>

Segregação socioespacial e vulnerabilidade climática nas periferias urbanas

RESUMO

Objetivo – Analisar criticamente a relação entre segregação socioespacial, políticas urbanas e vulnerabilidade climática nas cidades brasileiras, demonstrando que a exposição desigual aos riscos climáticos constitui uma expressão direta da produção capitalista do espaço urbano e das escolhas políticas que historicamente marginalizam determinados territórios e populações.

Metodologia – O estudo adota uma abordagem qualitativa de natureza teórico-crítica, caracterizando-se como um ensaio analítico fundamentado na revisão e interpretação de literatura especializada sobre produção do espaço urbano, segregação socioespacial, políticas públicas urbanas e justiça climática. A análise articula diferentes escalas — do urbano global ao contexto brasileiro — e mobiliza estudos empíricos e documentos institucionais como suporte interpretativo.

Originalidade/relevância – A originalidade do trabalho reside na articulação entre a crítica à produção desigual do espaço urbano e o debate contemporâneo sobre mudanças climáticas, explorando um gap teórico ainda pouco aprofundado nos estudos urbanos: a compreensão da vulnerabilidade climática como fenômeno socialmente produzido, territorialmente distribuído e politicamente condicionado, e não como resultado natural ou exclusivamente ambiental.

Resultados – Os resultados demonstram que os impactos das mudanças climáticas seguem a geografia da desigualdade urbana, incidindo de forma mais intensa sobre periferias caracterizadas por precariedade habitacional, déficit de infraestrutura e negligência histórica das políticas públicas. Ao mesmo tempo, demonstram que as políticas urbanas vigentes tendem a reforçar esse padrão ao concentrar investimentos e estratégias de adaptação climática em áreas centrais e valorizadas.

Contribuições teóricas/metodológicas – O artigo contribui teoricamente ao reforçar a centralidade da justiça climática como categoria analítica para a compreensão das desigualdades urbanas contemporâneas, tensionando abordagens tecnicistas e despolitizadas do planejamento urbano. Metodologicamente, oferece um quadro interpretativo que integra a análise da produção do espaço urbano à problemática climática, evidenciando a dimensão territorial da injustiça ambiental.

Contribuições sociais e ambientais – No campo social e ambiental, o estudo aponta a necessidade de reorientação das políticas urbanas a partir de princípios de equidade territorial, prevenção de riscos e participação social, destacando que a construção de cidades resilientes depende do enfrentamento estrutural das desigualdades socioespaciais que expõem as populações periféricas aos impactos mais severos da crise climática.

PALAVRAS-CHAVE: Segregação socioespacial. Vulnerabilidade climática. Cidades brasileiras.

Socio-spatial Segregation and Climate Vulnerability in Urban Peripheries

ABSTRACT

Objective – To critically analyze the relationship between socio-spatial segregation, urban policies, and climate vulnerability in Brazilian cities, demonstrating that unequal exposure to climate risks constitutes a direct expression of the capitalist production of urban space and of political choices that have historically marginalized specific territories and populations.

Methodology – The study adopts a qualitative, theoretical-critical approach, characterized as an analytical essay grounded in the review and interpretation of specialized literature on the production of urban space, socio-spatial segregation, urban public policies, and climate justice. The analysis articulates different scales—from the global urban context to the Brazilian reality—and draws on empirical studies and institutional documents as interpretative support.

Originality/Relevance – The originality of the study lies in articulating the critique of the unequal production of urban space with the contemporary debate on climate change, addressing a theoretical gap still insufficiently explored in urban studies: the understanding of climate vulnerability as a socially produced, territorially distributed, and politically conditioned phenomenon, rather than a natural or exclusively environmental outcome.

Results – The results demonstrate that the impacts of climate change follow the geography of urban inequality, affecting more intensely peripheral areas characterized by housing precariousness, infrastructure deficits, and the historical neglect of public policies. At the same time, they show that current urban policies tend to reinforce this pattern by concentrating investments and climate adaptation strategies in central and economically valued areas.

Theoretical/Methodological Contributions – The article contributes theoretically by reinforcing the centrality of climate justice as an analytical category for understanding contemporary urban inequalities, challenging technocratic and depoliticized approaches to urban planning. Methodologically, it offers an interpretative framework that integrates the analysis of the production of urban space with the climate issue, highlighting the territorial dimension of environmental injustice.

Social and Environmental Contributions – In the social and environmental fields, the study points to the need to reorient urban policies based on principles of territorial equity, risk prevention, and social participation, emphasizing that the construction of resilient cities depends on structurally addressing the socio-spatial inequalities that expose peripheral populations to the most severe impacts of the climate crisis.

KEYWORDS: Socio-spatial segregation. Climate vulnerability. Brazilian cities.

Segregación socioespacial y vulnerabilidad climática en las periferias urbanas

RESUMEN

Objetivo – Analizar críticamente la relación entre segregación socioespacial, políticas urbanas y vulnerabilidad climática en las ciudades brasileñas, demostrando que la exposición desigual a los riesgos climáticos constituye una expresión directa de la producción capitalista del espacio urbano y de decisiones políticas que históricamente han marginado determinados territorios y poblaciones.

Metodología – El estudio adopta un enfoque cualitativo de carácter teórico-crítico, y se configura como un ensayo analítico fundamentado en la revisión e interpretación de literatura especializada sobre la producción del espacio urbano, la segregación socioespacial, las políticas públicas urbanas y la justicia climática. El análisis articula diferentes escalas —del contexto urbano global a la realidad brasileña— y moviliza estudios empíricos y documentos institucionales como soporte interpretativo.

Originalidad/Relevancia – La originalidad del trabajo reside en la articulación entre la crítica a la producción desigual del espacio urbano y el debate contemporáneo sobre el cambio climático, explorando un vacío teórico aún poco desarrollado en los estudios urbanos: la comprensión de la vulnerabilidad climática como un fenómeno socialmente producido, territorialmente distribuido y políticamente condicionado, y no como un resultado natural o exclusivamente ambiental.

Resultados – Los resultados demuestran que los impactos del cambio climático siguen la geografía de la desigualdad urbana, afectando con mayor intensidad a las periferias caracterizadas por la precariedad habitacional, el déficit de infraestructura y la negligencia histórica de las políticas públicas. Al mismo tiempo, evidencian que las políticas urbanas vigentes tienden a reforzar este patrón al concentrar inversiones y estrategias de adaptación climática en áreas centrales y valorizadas.

Contribuciones teóricas/metodológicas – El artículo contribuye teóricamente al reforzar la centralidad de la justicia climática como categoría analítica para la comprensión de las desigualdades urbanas contemporáneas, tensionando enfoques tecnicistas y despolitizados de la planificación urbana. Metodológicamente, ofrece un marco interpretativo que integra el análisis de la producción del espacio urbano con la problemática climática, evidenciando la dimensión territorial de la injusticia ambiental.

Contribuciones sociales y ambientales – En el ámbito social y ambiental, el estudio señala la necesidad de reorientar las políticas urbanas a partir de principios de equidad territorial, prevención de riesgos y participación social, destacando que la construcción de ciudades resilientes depende del enfrentamiento estructural de las desigualdades socioespaciales que exponen a las poblaciones periféricas a los impactos más severos de la crisis climática.

PALABRAS CLAVE: Segregación socioespacial. Vulnerabilidad climática. Ciudades brasileñas.

1 INTRODUCTION

The intensification of climate change has increasingly exposed the structural inequalities that shape contemporary cities. In the Brazilian urban context, the impacts of extreme climate events—such as floods, landslides, and heat waves—are not distributed evenly across the territory, but rather fall selectively on areas historically marked by urban precariousness, socio-spatial exclusion, and the fragility of public policies (Godoy et al., 2024). This selectivity reveals that the urban climate crisis cannot be understood as a strictly environmental phenomenon, but rather as a direct expression of a mode of spatial production that naturalizes inequality and converts certain territories into permanent spaces of risk.

Brazilian urban peripheries recurrently concentrate the most severe effects of climate change, not merely due to their territorial location, but above all because of the socioeconomic and infrastructural conditions that characterize them. Housing precariousness, the occupation of environmentally fragile areas, insufficient drainage and sanitation systems, and the limited action of the State configure a scenario in which extreme climate events cease to be exceptional and become part of the everyday experience of these populations (Godoy; Benini, 2024). In this sense, climate vulnerability cannot be treated as a natural condition, but rather as the outcome of political and urban planning choices historically guided by the logic of capital valorization and the commodification of urban space.

The relevance of this debate is situated within a broader context of crisis of the contemporary urban model, in which cities are simultaneously consolidated as spaces of economic accumulation and of systematic production of inequalities. Brazilian urbanization, marked by deeply rooted processes of socio-spatial segregation, has produced a fragmented territory characterized by the coexistence of well-protected and well-infrastructured areas alongside vast urban sectors exposed to precarious living conditions and environmental risk (Corrêa, 2003). Climate change, far from inaugurating this situation, operates as a catalytic element that renders visible and intensifies the asymmetries already inscribed in urban form (Harvey, 2008).

Within this context, the central objective of this article is to critically analyze the relationship between socio-spatial segregation, urban policies, and climate vulnerability in Brazilian cities, advancing the argument that unequal exposure to climate risks constitutes a direct expression of the capitalist production of urban space. The study seeks to demonstrate that climate vulnerability is a socially produced phenomenon, deeply intertwined with urban planning strategies, the selective allocation of public investments, and the logic of real estate valorization that structures contemporary urbanization (Godoy et al., 2024). At the same time, the article problematizes the limits of current public policies and discusses climate justice as a fundamental axis for the reorientation of urbanism.

From a methodological standpoint, the article adopts a qualitative, theoretical-critical approach, grounded in the systematic analysis of specialized literature on the production of urban space, socio-spatial segregation, urban policies, and climate justice. The investigation articulates different scales of analysis—from the global urban debate to the Brazilian context—and draws on empirical studies, institutional documents, and analyses of public policies as interpretative support. This approach is oriented toward understanding the structural processes

that sustain urban climate vulnerability, rejecting technicist readings or naturalizing explanations of environmental disasters.

The contribution of this article to urban studies lies in its critical articulation between the unequal production of urban space and the issue of the climate crisis, emphasizing the territorial dimension of climate injustice. By demonstrating that climate impacts are socially and spatially produced, the study reinforces the need for approaches that integrate urban planning, social justice, and environmental responsibility. In this sense, it engages with the field of critical urbanism and urban geography by challenging the limits of the neoliberal model of urbanization and affirming the centrality of territorial equity in the construction of more just and resilient cities (Harvey, 2008; Santos, 2023).

Beyond this introduction, the article is organized into five sections. The second section discusses socio-spatial segregation as a structuring element of the production of urban space. The third examines climate vulnerability in urban peripheries, highlighting the unequal distribution of environmental risks. The fourth section critically analyzes Brazilian urban policies and their implications for the intensification of climate inequalities. The fifth section presents a reflection on climate justice and the need to reorient urbanism. Finally, the sixth section brings together the concluding remarks, synthesizing the main findings of the research and outlining theoretical and political challenges for addressing the climate crisis in cities.

2 SOCIO-SPATIAL SEGREGATION AND THE PRODUCTION OF URBAN SPACE

Understanding socio-spatial segregation requires recognizing it as a constitutive element of the capitalist production of urban space, rather than as a collateral effect or an occasional distortion of urban growth. As emphasized by Villaça (2001) and Corrêa (2023), urban space is the result of historically situated political and economic decisions and is produced in an intentional and unequal manner. Far from being a spontaneous or neutral process, the spatial organization of cities expresses power relations, disputes over value, and strategies of appropriation driven primarily by the interests of economic elites.

In this sense, the city comes to be treated as a commodity, subjected to the logic of exchange value. Villaça (2001) demonstrates that the production of urban space occurs selectively, guided by the maximization of land and real estate profitability. Areas endowed with infrastructure, services, and accessibility concentrate investments and higher-income populations, while socially vulnerable groups are progressively displaced to less valued sectors of the territory. This pattern of spatial organization not only reflects existing socioeconomic inequalities but actively contributes to their reproduction, consolidating a cycle of exclusion that perpetuates itself over time (Godoy et al., 2024).

Socio-spatial segregation, therefore, should not be interpreted as an accidental outcome of urban capitalism, but as a functional mechanism within its logic of accumulation. David Harvey (2008) deepens this analysis by demonstrating how neoliberalism intensifies such processes, transforming cities into privileged spaces for the circulation and valorization of capital. Practices such as real estate speculation, the financialization of urban land, and gentrification operate as mechanisms of expropriation, promoting the displacement of low-income populations from central areas and reinforcing the privatization of urban space. In this

context, the right to the city is systematically subordinated to market interests, turning urban space into a permanent field of conflict.

This dynamic transcends the material dimension of the city and assumes the contours of structural violence. The territorial exclusion of popular classes constitutes a recurring mechanism of oppression inscribed in the very form of the city. Milton Santos (2023), in analyzing the Latin American context, argues that this pattern results in fragmented urbanism, characterized by the coexistence of enclaves of prosperity and extensive areas marked by precariousness. In Brazilian cities, according to the author, there is an overlap of distinct technical milieus: on the one hand, the “technical-scientific-informational milieu” accessible to elites; on the other, a restricted and insufficient “technical milieu” imposed on marginalized populations. This asymmetry produces a profoundly unequal urban geography, in which peripheral areas are not merely spaces distant from the center, but territories systematically deprived of adequate living conditions.

Socio-spatial segregation is also directly articulated with environmental and climate vulnerabilities, revealing one of the most pernicious facets of contemporary urbanism. Mike Davis (2006) demonstrates that capitalist urbanization on a global scale has produced a growing mass of populations confined to slums and informal settlements, particularly in the Global South. The expansion of these precarious territories does not result from disorderly urban growth per se, but from a neoliberal logic that concentrates wealth while simultaneously pushing significant segments of the population into environmentally fragile areas lacking infrastructure.

According to Davis (2006), urban peripheries are configured as true sacrifice zones, where the effects of climate change—such as floods, landslides, and extreme heat events—are more intensely felt. In these areas, the absence or insufficiency of state intervention exacerbates exposure to risk, rendering poor populations disproportionately vulnerable to socio-environmental disasters (Godoy et al., 2024). Thus, socio-spatial segregation acts as an amplifying factor of the climate crisis, deepening pre-existing inequalities and undermining the possibilities for urban adaptation and resilience.

Within this framework, the production of urban space assumes a multidimensional character of domination, involving economic, political, social, and environmental dimensions. Harvey (2008) emphasizes that segregation constitutes a central strategy for the reproduction of capital, insofar as it directs investments, services, and opportunities toward selectively valued areas, while relegating peripheral territories to neglect and abandonment. Cities thus come to express a structural dichotomy between spaces of consumption and investment and territories of exclusion, configuring urban forms that naturalize inequality and socio-spatial injustice.

The notion of spatial justice, formulated by David Harvey (1992), becomes fundamental to the critical analysis of this process. For the author, there can be no social justice without an equitable distribution of urban space and the resources associated with it. However, the persistence of socio-spatial segregation prevents substantive advances in this direction, as urban planning and management remain oriented toward the maintenance of inequalities (Godoy; Benini; Palmisano, 2025). Practices such as gentrification, the privatization of public space, and the forced displacement of low-income populations to peripheral areas consolidate patterns of spatial injustice and reinforce mechanisms of social exclusion (Legroux, 2022).

These dynamics not only reflect socioeconomic inequalities but also intensify them, especially when articulated with environmental and climate vulnerabilities. Thus, a cycle of marginalization emerges that is difficult to break, in which territorial segregation, the precarization of living conditions, and exposure to risk mutually reinforce one another. In this sense, socio-spatial segregation constitutes a concrete expression of the capitalist logic of urban space production, in which territories are organized primarily to serve the interests of economic elites.

As demonstrated by Harvey (2008), Villaça (2001), Corrêa (2023), Santos (2023), and Davis (2006), this is a structurally unequal process that deepens social and environmental disparities and transforms urban peripheries into preferential spaces of vulnerability. This phenomenon transcends the economic dimension, assuming the form of structural violence that perpetuates exclusion and limits the possibilities of resistance and adaptation among poorer populations, while simultaneously consolidating urban centers as enclaves of privilege (Godoy et al., 2024). Such a framework exposes the limits of the neoliberal model of urbanization, which is incapable of promoting socially just, environmentally balanced, and genuinely inclusive cities in the face of contemporary challenges.

3 CLIMATE VULNERABILITY AND URBAN INEQUALITIES

Climate vulnerability affecting urban peripheries cannot be understood in isolation from the structural inequalities that organize the production of space in capitalist cities (Godoy; Benini, 2024). Far from affecting urban territories in a homogeneous manner, climate change operates as a factor that intensifies existing socio-spatial asymmetries, directing its most severe impacts toward historically marginalized populations (Godoy; Benini; Palmisano, 2024). In this sense, extreme climate events do not constitute neutral phenomena, but are articulated with an urban pattern that selectively exposes specific social groups to heightened environmental risks.

In analyzing the expansion of urban peripheries in the global context, Mike Davis (2006) emphasizes that slums and informal settlements are marked by construction precariousness, fragile infrastructure, and the absence of urban planning. These structural characteristics render such territories particularly susceptible to events such as floods, landslides, and heat waves. Consequently, climate impacts tend to assume more severe proportions precisely where material conditions for coping are most limited, transforming extreme environmental episodes into recurring social crises.

The unequal distribution of environmental risks reinforces the direct relationship between socio-spatial segregation and climate vulnerability. David Harvey (2008) argues that neoliberal urbanism operates through the systematic displacement of low-income populations to environmentally fragile areas—unstable hillsides, flood-prone zones, and territories lacking essential services. This dynamic is driven by the selective valorization of urban land, whereby central and well-located areas concentrate investments, while peripheral territories remain on the margins of environmental protection and adaptation policies (Legroux, 2022). In this process, climate vulnerability results not only from territorial location, but also from the scarcity

of economic, institutional, and technological resources available to peripheral populations to confront situations of risk.

Housing precariousness constitutes one of the main vectors amplifying these impacts. Milton Santos (2023) demonstrates that unequal urbanization in Brazil has produced extensive territories in which populations live in dwellings built with fragile materials and without the support of formal infrastructure. Under such conditions, extreme climate events have disproportionate effects, as the absence of adequate drainage, sanitation, and energy supply systems compromises any effective response to disasters (Godoy et al., 2024). The structural deficiencies that shape everyday life in urban peripheries become, under conditions of climate intensification, permanent factors of risk and deterioration of living conditions (Godoy; Benini, 2024).

The unequal production of urban space, as analyzed by Corrêa (2023), is sustained by a planning model that reproduces the territorial marginalization of popular classes. Climate change deepens this scenario by transforming historically neglected areas into zones of continuous exposure to environmental risk. The selective action of the State—privileging investments in infrastructure, sustainability, and resilience in central areas—contributes to the consolidation of an asymmetric urban geography, in which protection against climate impacts becomes a socially differentiated privilege (Godoy; Benini; Palmisano, 2024). In peripheral territories, the absence of consistent public policies reinforces situations of institutional abandonment and climate injustice.

In this context, the notion of climate justice acquires analytical centrality. As emphasized by Mike Davis (2006), global urban peripheries concentrate populations that, despite having contributed minimally to global warming, are those who suffer most from its effects. The historical exclusion of these populations from decision-making processes related to urban and environmental planning exacerbates their exposure to risk, configuring a cycle of structural injustice in which the costs of the climate crisis fall disproportionately on the poorest groups.

Thus, socio-spatial segregation places urban peripheries at the epicenter of climate change impacts, while privileged segments of the population remain relatively protected by adequate infrastructure and mitigation policies. The recurrence of disasters associated with housing fragility, the lack of essential services, and state neglect demonstrates how extreme climate events tend to assume the contours of humanitarian crises in peripheral areas. As Harvey (2008) observes, climate change does not constitute an external element to the functioning of cities, but rather integrates an urban system sustained by the reproduction of inequalities, deepening the marginalization of populations in situations of heightened vulnerability.

4 Políticas Urbanas, Planejamento e Desigualdades Climáticas

Urban public policies in Brazil have been structured around a planning model that, rather than reducing asymmetries, contributes to the reproduction of socio-spatial inequalities and to the deepening of climate vulnerability in urban peripheries (Godoy et al., 2024; Godoy; Benini; Palmisano, 2025). As argued by David Harvey (2008), neoliberal urbanism is oriented

toward the valorization of urban land and the creation of environments favorable to capital accumulation, frequently subordinating the needs of socially marginalized populations. In the Brazilian context, this rationale is recurrently expressed in interventions aimed at the requalification of central areas, conceived primarily to attract investments, stimulate the real estate market, and strengthen tourism-related activities, while peripheral territories—more exposed to climate impacts—remain on the margins of adaptation and environmental mitigation policies (Godoy; Benini; Palmisano, 2024).

The restructuring of Avenida Faria Lima in São Paulo constitutes an emblematic example of this pattern of intervention. Over recent decades, the area has consolidated itself as one of the country's main financial hubs, receiving substantial investments in infrastructure, mobility, and the upgrading of public space, largely oriented toward meeting the demands of the corporate sector and high-income groups (Reis; Vêras, 2024). In contrast, peripheral areas of the city, such as the East Zone and the South Zone, continue to face long-standing deficits in urban infrastructure, particularly with regard to drainage, sanitation, and the mitigation of floods and heat waves. In these regions, the absence of preventive planning transforms periods of intense rainfall into recurrent episodes of risk to life, property, and the safety of resident populations.

Milton Santos (2023) observes that Brazilian urbanization has been conducted in such a way as to confine low-income populations to environmentally degraded territories lacking adequate infrastructure. São Paulo's East Zone exemplifies this process, especially due to its occupation of floodplain areas and proximity to watercourses, factors that intensify the occurrence of flooding (Oliveira, 2016). Neighborhoods such as Itaquera, Vila Prudente, and São Miguel Paulista experience frequent floods, exacerbated by excessive soil impermeabilization and insufficient drainage systems. Although these areas are densely populated and present high levels of social vulnerability, public policies directed toward environmental infrastructure in these territories have remained limited. The Upper Tietê Macro-Drainage Plan, designed to reduce the impacts of flooding, has proven incapable of keeping pace with disorderly urban expansion and the lack of maintenance of existing systems, leaving thousands of families exposed to seasonal risks (FABHAT, 2016).

The selective adoption of projects labeled as "sustainable" in central areas also reveals the instrumentalization of environmental discourse as a strategy of urban marketing. Corrêa (2023) highlights that the production of urban space under capitalism tends to respond primarily to market demands, shaping interventions that reinforce processes of real estate valorization. Parque Augusta, in São Paulo, illustrates this logic. Located between high-income neighborhoods such as Higienópolis and Consolação, the project was widely promoted as an initiative aimed at sustainability and the expansion of urban green areas (Politi; Abascal, 2022). However, its social and environmental effectiveness is limited, since its benefits are concentrated in an area already well endowed with infrastructure, contributing primarily to the valorization of surrounding real estate.

This situation contrasts sharply with the reality of peripheral neighborhoods such as Grajaú and Capão Redondo, where the scarcity of public spaces, housing precariousness, and the presence of informal settlements reveal a profound inequality in the distribution of urban investments. The concentration of "green" projects in privileged areas, far from promoting

environmental justice, tends to exacerbate socio-environmental vulnerabilities in urban peripheries.

The situation of Brazilian favelas reveals, in an even more acute manner, the limitations of public policies in the face of climate change impacts. Mike Davis (2006) points out that, in cities of the Global South, poor populations are frequently exposed to extreme risks without adequate institutional protection. In Rio de Janeiro, communities such as Morro da Providência and the Complexo do Alemão repeatedly suffer from landslides and floods during periods of intense rainfall (Rodrigues, 2016). Housing precariousness, combined with the occupation of unstable areas, is aggravated by the absence of consistent preventive policies. In general, state action is limited to emergency responses, such as temporary removals, without the implementation of structural solutions capable of effectively reducing climate vulnerability in these territories.

Another relevant aspect of contemporary urban policies concerns the removal of communities in the name of large-scale development projects. During preparations for the 2016 Olympic Games, the Vila Autódromo community in Rio de Janeiro was partially removed to enable the construction of the Olympic Park in Barra da Tijuca (Comitê Popular da Copa e Olimpíadas do Rio de Janeiro, 2014). Under the argument of safety and sustainability, hundreds of families were displaced to peripheral areas often lacking adequate infrastructure. Vila Autódromo, located in a highly valued area of the city, was sacrificed in favor of attracting investments and projecting an image of urban modernization, while resettlement areas remained exposed to elevated socio-environmental risks, reproducing and deepening existing vulnerability.

These examples demonstrate how urban public policies in Brazil have operated selectively, prioritizing real estate valorization and capital accumulation in central areas, while neglecting peripheral territories most affected by climate change. Insufficient investment in adaptation infrastructure, combined with the forced removal of populations in the name of large projects, reveals a persistent pattern of socio-spatial exclusion. Urbanism as practiced in much of Brazilian cities, by disregarding the centrality of climate justice, contributes to the deepening of inequalities and the intensification of environmental risks in urban peripheries, undermining the construction of more equitable and resilient cities in the face of the contemporary climate crisis (Godoy; Benini, 2024).

5 CLIMATE JUSTICE AND THE REORIENTATION OF URBANISM

The construction of an effective climate justice agenda entails a structural revision of urban policies and of the foundations that guide the planning of contemporary cities (Godoy; Benini; Palmisano, 2025). More than responding episodically to extreme events, this perspective requires confronting the historical inequalities that systematically expose certain social groups to the impacts of climate change. As argued by David Harvey (2008), particularly in the context of the Global South, urbanism has been guided by a rationality that privileges capital valorization and the concentration of investments in central areas, reproducing a pattern of territorial exclusion that weakens urban peripheries. Within this model, climate solutions tend to benefit already protected spaces, further deepening existing socio-spatial disparities.

In the Brazilian context, where significant segments of the urban population live under precarious conditions, climate justice demands adaptation policies that prioritize the most vulnerable territories. Peripheral neighborhoods in cities such as São Paulo—such as Grajaú and São Mateus—face recurrent episodes of flooding and landslides, intensified by the historical absence of adequate infrastructure, including efficient drainage systems and controls on soil impermeabilization. Milton Santos (2023) emphasizes that these territories are systematically kept on the margins of urban development as a result of planning processes that are far from neutral, but instead guided by selective interests. This logic contributes to the expansion of climate risks and to the worsening of living conditions in urban peripheries (Godoy; Benini, 2025).

An approach grounded in climate justice presupposes not only the redistribution of material resources, but also the transformation of the decision-making processes that structure urban planning. Henri Lefebvre (2009), in formulating the concept of the “right to the city,” argues that historically marginalized groups must actively participate in decisions that affect their territories. In a context of climate intensification, this principle implies recognizing peripheral communities as central actors in the definition of adaptation and mitigation strategies, overcoming technocratic practices and standardized solutions that frequently serve the interests of the real estate market and central areas.

The recurrence of emergency policies adopted in the aftermath of climate-related disasters reveals the limits of a predominantly reactive mode of urban governance. In the Brazilian case, such responses are often restricted to palliative measures, without addressing the structural factors that produce urban vulnerability. Mike Davis (2006) observes that, in cities of the Global South, governmental interventions tend to occur belatedly, prioritizing short-term actions at the expense of structural policies capable of reducing future risks. In contrast to this model, climate justice requires the adoption of an equitable form of urbanism oriented toward prevention, resilience, and the preparedness of areas historically exposed to environmental impacts.

Climate justice, in this sense, must be understood as an ethical and political imperative that demands a reorientation of urban priorities. Environmental infrastructure projects, such as the Tietê Linear Park—designed to mitigate flooding in São Paulo—demonstrate the transformative potential of structural interventions aimed at environmental restoration and risk reduction (Peixoto, 2010). However, the concentration of such projects in more central areas limits their social reach. The expansion and adaptation of similar initiatives to peripheral regions, such as the East Zone, where soil impermeabilization has caused recurrent flooding, is fundamental to the construction of a more equitable urban policy (Godoy et al., 2024).

The implementation of an urbanism committed to climate justice can be structured around three interdependent axes. The first consists of prioritizing investments in resilient infrastructure in areas of greatest socio-environmental vulnerability. The second concerns ensuring the effective participation of local communities in planning and decision-making processes, recognizing their knowledge and lived experiences. The third axis involves the equitable redistribution of public resources in order to correct historical inequalities in the allocation of urban investments. These principles are essential to breaking the cycle of socio-spatial exclusion and expanding the adaptive capacity of cities in the face of climate change.

As emphasized by Milton Santos (2023), the construction of a truly just urbanism is inseparable from the guarantee of equitable access to the city as a whole. Such a perspective entails not only redistributing urban benefits, but also ensuring differentiated protection against climate risks, which affect territories unevenly. The consolidation of an equitable and climatically just model of urbanism therefore requires a profound reconfiguration of urban governance structures, financing mechanisms, and the processes of spatial planning and management. This transformation goes beyond technical solutions, demanding a paradigmatic shift in the ways cities recognize, value, and protect the diverse communities that constitute their urban fabric.

6 FINAL REMARKS

The analyses developed throughout this study allow us to assert that socio-spatial segregation and climate vulnerability do not constitute parallel or independent phenomena, but rather deeply intertwined dimensions of the same process of unequal production of urban space. In Brazilian cities, the historical organization of territory reveals a systematic pattern of selective exposure to risk, in which peripheral populations are repeatedly positioned in the most precarious, environmentally fragile, and institutionally neglected spaces.

The research demonstrates that the impacts of climate change are not randomly distributed across urban space. On the contrary, they follow the geography of social inequality, affecting more intensely those territories where housing precariousness, the absence of infrastructure, and the fragility of public policies are concentrated. Floods, landslides, and recurrent heat waves in urban peripheries cannot be understood as natural disasters, but rather as expressions of urban and political choices that, over time, have normalized the exposure of specific social groups to risk.

By analyzing recent urban policies, the study shows that the predominant planning logic remains oriented toward real estate valorization and the concentration of investments in central areas, while peripheral territories remain on the margins of structural climate adaptation strategies. Urban requalification, sustainability, and modernization projects tend to reinforce preexisting inequalities, either through the territorial selectivity of investments or through the displacement of populations in the name of large-scale developments. This model of urbanism, by prioritizing economic interests, directly contributes to the reproduction of socio-environmental vulnerability.

In this way, the urban climate crisis is revealed in this study less as an exclusively environmental problem and more as a political and territorial one. The vulnerability observed in urban peripheries is socially produced, sustained by decisions that have historically disregarded the right to the city for significant segments of the population. Persisting in punctual and emergency responses to climate-related disasters means leaving intact the structures that produce risk, thereby perpetuating a cycle of material losses, forced displacements, and the deepening of inequalities.

The conclusions of this study indicate that confronting the effects of climate change in cities requires a profound shift in the priorities of urban planning. Climate justice, as understood here, cannot be reduced to technical or compensatory actions, but must guide an effective redistribution of investments, infrastructure, and environmental protection, with centrality

given to historically vulnerable territories. This implies recognizing urban peripheries not as residual spaces, but as legitimate territories of life, which demand structural policies of prevention, adaptation, and social participation.

Thus, this study argues that there is no possibility of constructing resilient cities without directly confronting the socio-spatial inequalities that structure Brazilian urbanization. The climate crisis exposes, in an unavoidable manner, the limits of a model of urbanization based on the commodification of space and the naturalization of exclusion. Overcoming this model requires not only new policies, but a substantive transformation in the way urban planning is conceived—one oriented toward the centrality of life, territorial equity, and collective responsibility in the face of contemporary climate risks.

REFERENCES

DAVIS, Mike. **Planeta Favela**. São Paulo: Boitempo, 2006.

COMITÊ POPULAR DA COPA E OLIMPÍADAS DO RIO DE JANEIRO. **Megaeventos e violações dos direitos humanos no Rio de Janeiro**. Dossiê do Comitê Popular da Copa e Olimpíadas do Rio de Janeiro. Rio de Janeiro, jun. 2014. Disponível em: https://comitepopulario.wordpress.com/wp-content/uploads/2014/06/dossiecomiterio2014_web.pdf. Acesso em: 14 set. 2025.

CORRÊA, Roberto Lobato. **O espaço urbano**. 4. ed. São Paulo: Editora Ática, 2003.

FUNDAÇÃO AGÊNCIA DA BACIA HIDROGRÁFICA DO ALTO TIETÊ (FABHAT). **Plano de Bacia Hidrográfica do Alto Tietê – UGRHI 06: Relatório I**. São Paulo: FABHAT, 2016.

HARVEY, David. Social justice, postmodernism and the city. **International Journal of Urban and Regional Research**, v. 16, n. 4, p. 588–601, 1992. DOI: <https://doi.org/10.1111/j.1468-2427.1992.tb00198.x>.

HARVEY, David. **O neoliberalismo: história e implicações**. São Paulo: Edições Loyola, 2008.

LEFEBVRE, Henri. **The production of space**. Tradução de Donald Nicholson-Smith. Oxford: Blackwell, 2009.

LEGROUX, J. Teorias da justiça social e espacial: diálogos com a geografia a partir da década de 1970. **Geosp**, v. 26, n. 1, e-188003, abr. 2022. DOI: <https://doi.org/10.11606/issn.2179-0892.geosp.2022.188003>.

GODOY, J. A. R.; BENINI, S. M.; PALMISANO, A.. Dicotomias na participação democrática: conformação e desilusão no planejamento urbano brasileiro. **Cadernos Metrópole**, [S. l.], v. 27, n. 63, p. e6368226, 2025. Disponível em: <https://revistas.pucsp.br/index.php/metropole/article/view/68226> . Acesso em: 15 ago. 2025.

GODOY, J. A. R. de; BENINI, S. M. . CONTRADIÇÕES NA GESTÃO DE ÁREAS DE PRESERVAÇÃO PERMANENTE URBANAS NO BRASIL. **Boletim de Conjuntura (BOCA)**, Boa Vista, v. 20, n. 59, p. 211–235, 2024. DOI: 10.5281/zenodo.14567462. Disponível em: <https://revista.ioles.com.br/boca/index.php/revista/article/view/6280> . Acesso em: 16 jun. 2026.

GODOY, J. A. R.; BENINI, S. M.; SILVA, A. L. C.; PALMISANO, A.. The geography of inequality: socio-spatial segregation and climate vulnerability in Brazilian urban peripheries. **International Journal of Business and Management**, v. 19, p. 231–240, 2024. Disponível em: <https://ccsenet.org/journal/index.php/ijbm/article/view/50860> . Acesso em: 16 jun. 2025.

GODOY, J. A. R.; BENINI, S. M.; PALMISANO, A.. Social vulnerability and illegal occupation in urban APP areas: legal and environmental perspectives in Brazil. **RGSA (ANPAD)**, v. 18, e09580, 2024. Disponível em: <https://rgsa.openaccesspublications.org/rgsa/article/view/9580>. Acesso em: 20 ago. 2025.

OLIVEIRA, F. V. Urbanização e formação socioespacial da Zona Leste da cidade de São Paulo: aspectos históricos e forma urbana. **arq.urb**, n. 17, p. 4–21, 2016. Disponível em: <https://revistaarqurb.com.br/arqurb/article/view/169>. Acesso em: 14 set. 2024.

PEIXOTO, Graco Braz. **Várzeas do Tietê será o maior parque linear do mundo**. Secretaria Municipal de Habitação, Prefeitura de São Paulo, 1 fev. 2010. Disponível em: <https://capital.sp.gov.br/web/habitacao/w/noticias/14609>. Acesso em: 14 set. 2024.

POLITI, H. C.; ABASCAL, E. H. S. Espaço público e parques urbanos: a disputa pública pelo novo Parque Augusta. **Cadernos de Pós-Graduação em Arquitetura e Urbanismo**, v. 22, n. 1, p. 119–135, 2022. DOI: <https://doi.org/10.5935/cadernospos.v22n1p119-135>.

SANTOS, Milton. **A natureza do espaço: técnica e tempo, razão e emoção**. 4. ed. São Paulo: EdUSP, 2023.

REIS, E. C. G. dos; VÉRAS, M. P. B. Desigualdades sociais, territórios da vulnerabilidade e mobilidade urbana. **Cadernos Metrópole**, v. 26, n. 60, p. 537–560, 2024. DOI: 10.1590/2236-9996.2024-6007. Disponível em: <https://revistas.pucsp.br/index.php/metropole/article/view/63374>. Acesso em: 14 set. 2024.

RODRIGUES, Rute Imanishi (Org.). **Vida social e política nas favelas: pesquisas de campo no Complexo do Alemão**. Rio de Janeiro: Instituto de Pesquisa Econômica Aplicada (IPEA), 2016.

SOJA, Edward. **Seeking spatial justice**. Minneapolis: University of Minnesota Press, 2010.

VILLAÇA, Flávio. **Espaço intra-urbano no Brasil**. São Paulo: Studio Nobel, 2001.

DECLARAÇÕES

CONTRIBUIÇÃO DE CADA AUTOR

Concepção e Design do Estudo: Jeane Aparecida Rombi de Godoy; Sandra Medina Benini; Allan Leon Casemiro da Silva.

Análise Formal: Jeane Aparecida Rombi de Godoy; Sandra Medina Benini; Allan Leon Casemiro da Silva.

Metodologia: Jeane Aparecida Rombi de Godoy; Sandra Medina Benini.

Redação – Rascunho Inicial: Jeane Aparecida Rombi de Godoy; Sandra Medina Benini.

Redação – Revisão Crítica: Jeane Aparecida Rombi de Godoy

Revisão e Edição Final: Sandra Medina Benini; Jeane Aparecida Rombi de Godoy.

Supervisão: Jeane Aparecida Rombi de Godoy.

DECLARAÇÃO DE CONFLITOS DE INTERESSE

Eu/Nós declaro(amos) que o manuscrito intitulado **“Segregação socioespacial nas periferias urbanas”**:

1. **Vínculos Financeiros:** Não possui vínculos financeiros que possam influenciar os resultados ou a interpretação do trabalho. Nenhuma instituição ou entidade financiadora esteve envolvida no desenvolvimento deste estudo.
 2. **Relações Profissionais:** Não possui relações profissionais que possam impactar a análise, interpretação ou apresentação dos resultados. Nenhuma relação profissional relevante ao conteúdo deste manuscrito foi estabelecida.
 3. **Conflitos Pessoais:** Não possui conflitos de interesse pessoais relacionados ao conteúdo do manuscrito. Nenhum conflito pessoal relacionado ao conteúdo foi identificado.
-