

CITY, ENVIRONMENT AND INJUSTICE: THE ROLE OF URBAN PLANNING IN ENVIRONMENTAL QUALITY

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Highlights:

- The production of cities, historically influenced by capitalism, produces segregated environments.
- The possibilities and limitations of the environment are amplified by access to, or lack of access to, capital.
- The environmental impacts of the appropriation and occupation of the land intensely affect the poorest.
- The lack of urban planning reduces environmental quality and increases environmental injustice.
- Society is integrated into the environment, being responsible for its quality or degradation.

Abstract: Throughout human history, the production of cities and their organization based on urban site characteristics have been relatively closely linked. As cities expand, new relief compartments are included into this urban reality, transforming the first nature into a second one that suits the desires of a society divided into classes. To understand the role of urban planning in producing cities and maintaining environmental quality, this study seeks to associate the appropriation and occupation of landforms with the commodification and unequal distribution of natural resources and environmental problems. Based on theoretical and conceptual discussions on the production of cities, urban planning and environmental quality, we understand that the class society materializes into the urban space to perpetuate capitalism, highlighting environmental injustice, consisting in the poor distribution of access to quality environments and misguided accountability for the occurrence of environmental disasters.

Keywords: Cities; Relief; Urban Planning; Environmental Quality; Environmental Injustice.

CIDADE, AMBIENTE E INJUSTIÇA: O PAPEL DO PLANEJAMENTO URBANO NA QUALIDADE AMBIENTAL

Resumo: A relação entre a produção das cidades e sua organização a partir das características do sítio urbano, demonstraram ao longo da história da humanidade um vínculo relativamente próximo. Na medida em que as cidades se expandem, novos compartimentos do relevo são inseridos nessa realidade urbana, transformando a

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primeira natureza numa segunda que se adequa aos anseios de uma sociedade dividida em classes. Objetivando compreender o papel do planejamento urbano na produção das cidades e manutenção da qualidade ambiental, o estudo visa ainda associar a apropriação e ocupação das formas do relevo à mercantilização e distribuição desigual de recursos naturais e problemas ambientais. A partir das discussões teóricas e conceituais acerca da produção de cidades, planejamento urbano e qualidade ambiental, compreendemos que a sociedade dividida em classes se materializa no espaço urbano de modo a perpetuar o capitalismo, evidenciando a injustiça ambiental, consistindo na má distribuição do acesso a ambientes de qualidade e responsabilização equivocada pela ocorrência de desastres ambientais.

Palavras-chave: Cidades; Relevo; Planejamento Urbano; Qualidade Ambiental; Injustiça Ambiental.

CIUDAD, MEDIO AMBIENTE E INJUSTICIA: EL PAPEL DE LA PLANIFICACIÓN URBANA EN LA CALIDAD AMBIENTAL

Resumen: La relación entre la producción de las ciudades y su organización a partir de las características del sitio urbano ha demostrado un vínculo relativamente estrecho a lo largo de la humanidad. A medida que las ciudades se expanden, nuevos compartimentos de relieve se insertan en esta realidad urbana y transforman la primera naturaleza en una segunda que se ajusta a las aspiraciones de una sociedad dividida en clases. Para comprender el papel de la planificación urbana en la producción de ciudades y el mantenimiento de la calidad ambiental, este estudio pretende asociar la apropiación y ocupación de formas de relieve con la mercantilización y distribución desigual de los recursos naturales y los problemas ambientales. A partir de las discusiones teóricas y conceptuales sobre la producción de las ciudades, la planificación urbana y la calidad ambiental, se constató que la sociedad dividida en clases se materializa en el espacio urbano para perpetuar el capitalismo, lo que produce injusticia ambiental, mala distribución del acceso a ambientes de calidad y responsabilidad equivocada por la ocurrencia de desastres ambientales.

Palabras clave: Ciudades; Relieve; Planificación urbana; Calidad ambiental; Injusticia Ambiental.

INTRODUCTION

The development of society is historically linked to the process of appropriating natural resources, gradually transforming them to meet the needs of a particular period or mode of production. From the appropriation of the landscape to the different uses of the land, humankind appropriates and transforms these resources, often without considering the impacts that arise from these interventions.

Considering the activities carried out by human beings in contemporary times, we will adopt the urban site as a starting point to understand the role of urban planning in environmental quality. In cities, the relationship between society and nature gains prominence by highlighting the coexistence of these two elements, while at the same time demonstrating the distance created throughout human history. When considering the relationships established in the urban site, understood as the physical environment used in the construction of cities

(GEORGE, 1983), the components of soil, relief, and bedrock influence how the occupation process occurs. Understanding the importance of the physical elements of the urban site for the discussions in this study, we consider the forms of relief and the processes responsible for their creation, as well as the alterations in morphodynamics, since both the occupation process and its consequences interfere with urban planning and environmental quality.

Morphodynamics, according to Tricart (1977), consists of interconnected processes responsible for regulating morphogenesis and pedogenesis, that is, giving rise to landforms and different soil types. By adopting cities as a case study, and consequently the characteristics of the urban site, it is understood that intervention in natural dynamics has historically occurred in an intense and degrading manner, impacting the environment.

In cities, the appropriation and subsequent occupation of landforms is commonly observed; these spaces acquire exchange value and are distributed in a manner congruent with the class divisions identified in the capitalist mode of production. Consequently, the class division becomes evident in the urban landscape, as does environmental degradation, especially in valley bottoms and hillsides, where people with lower purchasing power predominantly reside.

The zoning of housing classes according to the valuation of landform divisions, when associated with a lack of urban planning, directly affects the quality of the environment. A series of events associated with urban environmental problems stemming from poor or absent urban planning are observed, frequently affecting the poorest segment of the population.

Understanding the city as an environment in which social and natural relations are established, influencing and being influenced, highlights the role of human beings in the transformations of this environment. The environment, as a system, remains in equilibrium until forces act, disrupting the dynamic balance of natural processes (HACK, 1960). Human beings and their actions appear in this scenario as a force disrupting the dynamic balance, with the consequences affecting the urban population, although not uniformly.

This study discusses the historical construction of the city as a locus of social relations and the domination of nature, examining the interventions made in the environment to adapt natural conditions to social factors and interests. The role of topography in urban planning and its implications for environmental quality are essential for constructing discussions about the relationship between human beings and the environment.

For example, the impermeabilization of the soil surface promoted during the production of urban space disrupts the balance of runoff and infiltration dynamics. Water that previously infiltrated now flows superficially, causing flash floods, localized flooding, and increasing the likelihood of floods followed by inundation (COSTA, 2019).

Based on this premise, this study aims to understand the role of urban planning in the production of cities and the maintenance of environmental quality. It also seeks to associate the appropriation and occupation of landforms with the commodification and unequal distribution of natural resources and environmental problems. Related to the main objective of this study, it is expected to interpret the relationships between environmental quality and environmental injustice, given that a society divided into classes has differentiated access to urban space.

Methodologically, this study proposes theoretical discussions providing means to understand the production of cities from the process of land occupation. Emphasis will be placed on the role of urban planning and studies related to environmental quality, in the sense of relating the fact that environmental problems often accompany socioeconomic problems.

According to Japiassu and Marcondes (2001), it is within contradictions that it becomes possible to identify truths, based on the rationalization of a given problem or object. The construction of dialectical pairs allows us to question the relationship between the natural and the social throughout the history of cities and humanity, as well as the role of urban planning in the appropriation and occupation of landforms, affecting the quality of the environment.

Based on this premise, the present study is organized into four theoretical sections designed to highlight the role of the relationship between society and nature in the construction of cities that reflect the prevailing mode of production. It also raises discussions about the role of landforms in the organization of urban space, as well as the valuation and unequal distribution of natural components. Finally, the study addresses urban planning, environmental quality, and the unequal distribution of environmental impacts in urban areas, resulting from environmental injustice.

THE HISTORICAL CONSTRUCTION OF CITIES

Over time, a city has acquired the title of locus of technological, intellectual, social, and economic development; however, it is interesting to go back to the

beginnings and understand how this role was assumed. Based on the transformation of the relationship between human beings and the environment, the development of different techniques, as well as political and social organization, are part of the historical construction of cities.

Soja (2008) points to the advancement of agriculture at the detriment of hunting as one of the main changes that allowed the emergence of the first settlements. The transition from nomadism to sedentary life allowed small groups to form and produce their food through an incipient commercial network; these groups connected, allowing the exchange of surpluses (SOJA, 2008).

Mumford (1998) highlights the role of women in the advancement of agricultural techniques and their interest in settling in a specific location to care for their children, ensure their safety, and produce food. The women's presence in the village, while the men went hunting, allowed them to connect with the land, learning to manage its natural dynamics and extract the greatest possible amount of food from this resource.

Furthermore, Mumford (1998) emphasizes that affective relationships with place are fundamental for human beings to abandon nomadism at a certain point in history. The author reaffirms the existence of the city of the dead, even before the city of the living existed, the so-called Necropolis. This organization allowed the deceased to be buried, and from there affective bonds with the place were created (Mumford, 1998).

Whether due to affection or the development of agriculture, the origin of cities can be associated with a set of causes that, in an integrated way, influenced the production of urban space. Regarding the first urban agglomerations, Soja (2008) highlights the relationship between administrative demands, agricultural production time, the spread of faith, the emergence of surpluses, and also the commercial and community relations that arise from sedentary lifestyles. At the moment when the relationships between human beings and the environment become closer, there is a greater understanding of the dynamics of nature, improving agricultural production; fertilization and irrigation are fundamental tools to enhance food production in this period of human history (SOJA, 2008).

The surplus production becomes a means of exchange and even allows for improvements in the diet of these communities, thanks to the variety of products that become available, thus leading to population growth due to improved quality of life (SOJA, 2008). By creating a commercial network, these villages and communities gradually develop and can be considered a prelude to a city, which,

according to Mumford (1998),

[...] can be described as a structure that is especially condensed to accommodate the maximum number of facilities in a minimum of space, but also capable of structural expansion that allows it to find a place that serves as a shelter for the changing needs and more complex forms of a growing society and its accumulated social heritage. (Mumford, 1998, pp. 38-39, translated)

The link between the processes and interests of a given period in the construction of the space in which social, economic, cultural, religious, etc., relations begin to be structured is noticeable. For Lefebvre (2013), the role of the mode of production in the construction of space is evident, since both rural and urban areas reflect the interests of society at that moment. It is interesting to understand that the way space was organized during feudalism differs from the space produced by capitalism; the social and economic relations are different, and consequently, so will the space be.

According to Lefebvre (1972), the city not only reflects the needs of a mode of production, but also plays a fundamental role in its territorial organization and maintenance. The produced and organized space enables the establishment of power relations, creating territories marked by the action and influence between cities within a network. Lefebvre (1972, p. 41, translated) understands that in antiquity "the political city organized, dominated, protected, administered, and exploited a territory with its peasants, villagers, shepherds, etc." This organization demonstrated a division of political and economic functions, a reality that has remained throughout the history of cities.

Brenner (2014) understands urbanization not only as a process that occurs on a local and regional scale, but as a phenomenon that influences and is affected by global dynamics. From the moment that technological advances in transportation and communication become present in a large part of the planet, processes such as urbanization reach the most remote places.

Considering the capitalist mode of production as a system based on profit, class differentiation, and private property, it is interesting to see how the city materializes these characteristics and contradictions. Lefebvre (2013) considers those who own the land as primarily responsible for organizing urban space, mainly arranged according to the interests of the elite.

For Lefebvre (1972), the city is both a product and capable of producing, based on the aspirations of a society and mode of production divided into classes, with contradictory and segregating relationships. It is within the city that production and consumption take place, serving the different classes present in the

urban space and privileging those with greater access to capital.

According to Lefebvre (2013), the mode of production not only organizes and produces space, but also defines the idea of time. Time in the capitalist mode of production is considered a fast, changeable time that is extremely demanding of innovations that sustain the reproduction of capital (LEFEBVRE, 2013).

The acceleration of time for the benefit of production becomes clear when we consider the advances in industry, technology, consumption, and means of transport and communication, promoting what Harvey (2013a) calls the compression of space-time. It is possible to observe the acceleration of productive processes which, when impacting urban space, cause time in the city to be conceived in an accelerated form. Distances between places become shorter and relationships with space more superficial, since changes are more constant than permanence in space.

According to Carlos (1997), a city, in constant transformation, also becomes a symbol of the separation between man and nature, in which the social relations established from capitalism produce an unequally structured and distributed society/city. Brenner (2014) understands this inequality as a characteristic of capitalism, materializing in a segregated and exclusionary urban space.

The current configuration of cities aims at the reproduction of capital, exploiting cheap labor and stimulating accelerated consumption. The urban mode of life, of fast time, of production and consumption, also affects relations with rural spaces, which receive greater production demands to supply the cities (BRENNER, 2014).

The differentiation between rural and urban, rich and poor, developed and underdeveloped, among others, stimulates competition between peers and reinforces the segregative character of capitalism as a mode of production. Lefebvre (1972, p. 36, translated) emphasizes that "the separation of classes is simultaneously illusory and extremely real". It is illusory insofar as they are grouped together in society as a whole, but it is real since in materiality these disparities are evident and give rise to a series of conflicts in the city.

Singer (1980) understands urban land as the starting point for socioeconomic disputes that occur in cities, primarily driven by capitalism. These conflicts become even more evident in the process of urban space production, since the use value of land is transformed into exchange value, increasing the price in the transition from rural to urban land (CARLOS, 2018). Thus, the city becomes a commodity, increasingly refined, in order to maximize the profits of those who own

the land.

The transformation of rural land into urban land is a practical example of how much more valuable it becomes when it receives urban infrastructure, being subdivided into smaller pieces and resold at high prices. Harvey (2013b) considers that the capitalist mode of production has found in cities the ideal environment to multiply profits, even with minimal investment.

The city, previously seen as an agglomeration that brought together the basic needs for community life, currently acquires other functions, reflecting the predatory characteristics of capitalism. Corrêa (2004) understands that even the location of a city relates to the interests of capitalism, allowing one city to complement or even exploit the resources of another in order to enhance the reproduction of capital.

For Magrini (2013, p. 365, translated), a city results from "the different elements that participate in its process of production and appropriation". The author highlights, for example, the presence of different times and materialities in the urban fabric, which evidence socio-spatial practices developed by its inhabitants (MAGRINI, 2013).

These socio-spatial practices elucidate the transformative power of each class present in the city, creating landscapes that correspond to their consumption and production potential. In this way, the city not only reflects the characteristics of the prevailing mode of production, but also exposes the contradictions and disparities present in capitalism. The encouragement of private property, the exploitation of labor, and the unequal distribution of land allow for the creation of urban landscapes that demonstrate the consumption capacity of inhabitants in different parts of the city.

ASPECTS OF THE RELATIONSHIP BETWEEN LANDFORMS AND CITIES

The contradictions of capitalism appropriate and materialize upon a substrate, here referred to as the urban site, "defined as the topographical framework in which the city took root, at least in its origins" (GEORGE, 1983, p. 37, translated). Landforms, in the production of urban space, are transformed into a commodity, demonstrating the human capacity to establish value in objects, including physical components of nature.

According to Miyazaki (2013, p. 32, translated), the "urban site may seem a less important element in the face of advances in techniques related to

construction, earthworks and land reclamation,” but for a long time, the physical characteristics of the urban site were considered when expanding occupied areas. Overcoming these natural obstacles through tools provided by engineering has become a common practice in urban spaces, from land reclamation to the channeling of waterways.

It is necessary to understand the influence of the urban site, not only in the early stages of urbanization, but throughout human history, highlighting the limitations and potential of the urban site (MIYAZAKI, 2013). In the history of cities, their establishment frequently occurred along the banks of river channels, due to logistical issues related to water supply and transportation.

Mumford (1998) highlights, for example, the emergence of cities in river valleys such as the Nile and Tigris-Euphrates. The valley bottoms presented interesting characteristics for an urban site, such as the presence of flat terrain, proximity to water sources, soil productivity, and easy access to transportation routes, in this case, the rivers.

The absence of construction techniques compelled humans to find suitable areas for building and establishing villages; however, with the passage of time and technological advances, the ability to transform the environment has become increasingly intense. Suertegaray (2021) understands that the production of the city is linked to the construction of an environment in which the urban population can settle and develop, transforming the first nature into a second nature endowed with artificial elements. Thus, from the development of engineering techniques,

Urban dynamics transform the urban site, flood rivers, promote heat islands, change surface and groundwater flows, and pollute the air. In other words, urban dynamics produce a second nature, they produce an environment. These transformations express a historical process of appropriation of nature and reappropriation by capitalist dynamics. Furthermore, the urban landscape is not homogeneous; it reveals differentiated environmental problems (SUERTEGARAY, 2021, p. 56, translated).

Considering this second nature, Mumford (1998) highlights the capacity of human beings to transform the environment according to their needs, from the very beginnings of urbanization. By draining swamps or regulating the direction of waterways, humans have already interfered directly and indirectly in the dynamics of nature.

Lefebvre (2013), when addressing the role of transportation in the advancement of the urbanization process, emphasizes how important proximity to waterways was, long seen as the main transportation route. According to the

author, as access routes such as railways and airports are created, the human capacity to travel, transforming the environment, is enhanced (LEFEBVRE, 2013). For Lefebvre (2013), traveling long distances, no longer limited by physical barriers or the ability to travel on foot or by animal traction, allowed for the establishment of commercial relations with other villages.

The ability to travel and overcome natural obstacles made it possible to choose more distant and suitable areas for habitation, dispersing existing agglomerations. Despite technological advances, the urban site is still considered during the process of urban appropriation and occupation, mainly due to land appreciation. This appreciation, according to Singer (1980), occurs from the moment a real estate developer decides to include a new area in the urban space. Elements such as slope and soil type contribute to the appreciation or depreciation of the land, considering the number of interventions necessary to make it habitable.

Urban land and relief, in this way, become commercialized according to the interests of capitalism, in which the most favorable areas and types of land for occupation are allocated to the wealthiest classes. Lefebvre (2013) understands that each social group has access to land limited by its purchasing power. In this sense, urban space, divided by class, materializes on the urban site in an unequal and segregated manner, based on the prices imposed by real estate developers who direct occupation in order to obtain maximum profit (LEFEBVRE, 2013).

The interest in profiting, including from landforms, demonstrates the ability to add value to natural elements and affects the process of urban space production. In this sense,

The appropriation of space by society evidences the importance of relief as a factor of antagonistic nature, sometimes favorable to occupation, sometimes presenting features and processes that discourage the mechanism of occupation by human groups. Thus, relief has a restrictive character for certain types of human occupation (GIRÃO; CORRÊA, 2004, p. 39, translated).

Aiming to overcome vulnerabilities in the environment to occupation, humans deconstruct the environment in order to reconstruct it to meet the demands of society (CASSILHA; CASSILHA, 2009). The authors understand that this appropriated and transformed environment is finite and demonstrates fragility; interferences and impacts accumulate in the environment throughout human history and culminate in the environmental degradation perceived in a large part of cities.

The interventions, promoted for the performance of human activities, allow

us to affirm that the urban site influences, through its natural forms, the expansion of the urban fabric. However, according to Miyazaki (2013, p. 33, translated), the urban site should not be considered as "a unique and exclusive definer in the configuration of urban forms, because, in that case, we would be limiting the analysis to a simplistic environmental determinism".

Directing the discussion to the field of planning, instead of blaming the natural components of the environment for hindering urban development and expansion, it is interesting to consider the importance of prior studies in urban planning. Girão and Corrêa (2004) highlight geomorphological studies as a tool to understand the elements of the urban site, evidencing the potentialities and vulnerabilities, thus reducing exposure to the risk of events such as floods and landslides, commonly associated with urban areas.

Thus, urban planning is fundamental in the process of appropriating and occupying land in urban areas, making it possible to reduce the impacts generated on the environment. Urban planning, combined with geomorphological studies, also allows the occupation process to be directed towards less vulnerable areas, restricting exposure to the occurrence of dangerous events.

THE ROLE PLAYED BY URBAN PLANNING

The environment created from the relationship between the social and the natural presents a series of indications that the appropriation and occupation of the terrain, as well as the use of other natural resources, occurred in a predatory manner. The depletion of mineral reserves, the degradation of arable land, and the urban environmental problems that have accompanied the history of humanity should not be read merely as a "response" from a vengeful nature, but as a consequence of the disruption of the dynamic equilibrium of natural processes.

According to Hack (1960), the planet, as a system, possesses dynamics that can be altered by the addition or removal of elements, influencing natural processes. When considering the natural or social conditions of a given environment, it is relevant to consider the importance of prior studies, as they are strong allies in the prevention of disasters and environmental problems, especially in urban areas.

Based on this premise, recognizing the environment and its constituent elements is of paramount importance, especially when considering the actions of human beings. Girão and Corrêa (2004, p. 36, translated) emphasize that the intervention promoted by human action has become "a relevant agent modifying

the environment, altering the balance and dynamics of natural processes." In this way, the authors highlight the negligence of human beings towards natural elements, disrupting the dynamic equilibrium, excessively consuming or degrading natural resources, and ignoring social well-being and environmental quality.

Human action on the environment has demonstrated throughout history its immediate and predatory nature. For example, the process of colonization, realized with the intention of exploitation, has led to the degradation or even decimation of natural resources in various countries, resulting in their reserves being exploited to the point of exhaustion.

Occupation, especially in cities, demands the appropriation of resources and the transformation of the natural characteristics of the environment, inserting elements that facilitate the development of human activities. The expansion of the urban fabric, stimulated by population growth, appropriates new areas of the terrain and transforms them. Pavements, buildings, and other urban infrastructure are examples of interventions capable of directly or indirectly affecting natural processes.

Understanding that urban expansion occurs over natural elements, especially relief, soils, and waterways, Guerra and Marçal (2014) reinforce the importance of geomorphological studies in urban planning. Studying the elements present in the urban site allows for the direction of expansion, minimizing the impacts of transformations on the environment.

Mumford (1998) indicates the urgency for planning to consider not only urban elements but also rural ones, especially considering that the reality of one affects the other. For example, the rural exodus promoted by the precariousness of work and mechanization of agricultural practices has led to urban sprawl in many cities; from there, processes such as the formation of slums and other types of irregular occupation have become part of the urban reality.

Planning should therefore consider not only urban components, but also those that can be incorporated in the medium and long term through some form of migration. Thus,

Planning, like the [...] German word "planung," the French word "planification," and the Spanish word "planeamento," has very ancient roots, going back to the Latin word "planus." The establishment of an initial plan and action in accordance with that plan, which is an approximate definition of what planning (urban or any other) is, originally had to do with the two-dimensional representation of a structure – the plan of that structure. As can be intuitively perceived, the word "planning" always refers to the

future. This essential content remains if the discussion is transcribed to the field of urban planning, something very different and infinitely more complex than the planning of a structure, as it involves a whole collective full of conflicts and contradictions and a considerable dimension of unpredictability (SOUZA, 2006, p. 149, translated).

Based on the discussion presented in Souza (2006), it is interesting to maintain the association of planning with future activities, not necessarily predicting, but considering the possibility of events that would affect the quality of the environment and urban services. The problem lies in the fact that urban planning is frequently not considered in the city's construction process. However, after the city has materialized, when problems arising from inadequate occupation become apparent, the urgency to mitigate the impacts arises.

According to Souza (2010), urban planning differs from urban management, because it considers prior studies and provides the necessary tools for the development of cities while minimizing the impacts of urban occupation, while management consists of monitoring this planning, reducing possible impacts.

Cassilha and Cassilha (2009, p. 66, translated) believe that by adopting "the notion of equilibrium as a primary practice, urban planning and the planning system should have, as their main objective, the establishment of a superior standard of quality of life for the population". To this end, urban infrastructure must meet the urban population's demand, reducing the existence of environmental problems or difficulties in accessing health and education services. Imbalances in access to these services can be seen as evidence of poor planning execution, or even the absence of planning at all.

Considering the created environment also means revisiting the past and future possibilities, bearing in mind that natural elements are transformed and the disruption of dynamic equilibrium causes a series of phenomena over which human beings have no control. In this sense, Mota (1999, p. 100, translated) believes that this "urban planning should therefore result in the conservation of natural resources, understood as the appropriate use of the environment within the limits capable of maintaining its quality and balance at acceptable levels".

This balance can be disrupted by a succession of events. Pedro (2011) points out that the increase in the number of inhabitants creates demands for territorial expansion, occupying other parts of the landscape. Considering this population growth, there is the possibility that areas suitable for occupation could be studied and selected to guide growth. However, reality shows that the

expansion of the urban fabric is driven by the interests of real estate agents, amplifying the discrepancies of the capitalist mode of production.

The capitalist mode of production can be considered classist insofar as it divides society into classes according to their capacity for consumption and production. It is also segregating, as it directs these classes to spatial divisions within the city that correspond to their consumption capacity. The major problem is that the areas designated for the population with lower purchasing power are those with the highest occurrence of urban environmental problems and impacts, associated with the ineffectiveness of public management.

Every human action in the environment generates some form of impact, and according to Coelho (2013, p. 24, translated), this can be understood as "a process of social and ecological changes caused by disturbances (a new occupation and/or construction of a new object: a production plant, a road, or an industry) in the environment". These environmental impacts represent not only a consequence of the interventions carried out in the environment, but also the absence of studies prior to installation, considering the dynamics of nature and the insertion of society in a given environment.

In the urban environment, planning allows for the creation, organization, and restructuring of the city according to the needs of its inhabitants. However, as planning is driven by the interests of capitalism, social well-being is relegated to a secondary position. Silva (2008, p. 92, translated) believes that the "urban image gradually assumes a mercantile form, transforming itself into an excellent business", the "product" is improved by adding market value. When consumed in a differentiated manner considering the financial capacity of each class, it becomes evident for whom the improvements are made and for whom the quality environment is intended.

The origin of cities is associated not only with the urban site, but also with planning (or the lack thereof), which, in creating this urban space, segments it and directs the occupation process, especially based on economic interests. In capitalism, the segregation of classes and, consequently, the impacts and problems of urban environments become evident; it is urgent to discuss who is affected by the problems arising from urbanization and the inefficiency of planning.

ENVIRONMENTAL QUALITY AND ENVIRONMENTAL INJUSTICE RELATED TO LAND OCCUPATION

By exposing the relationship between society and nature through the lens of urban development and its impact on the landscape, the discrepancies inherent in a class-based mode of production become clear. Aspects such as environmental injustice and the difficulty of accessing quality environments for those without capital are an urban reality built over the years. Therefore, it is important to define the concept of environment in order to understand what constitutes a quality environment.

The environment, which can be understood as the combination of biotic and abiotic elements, represents the possibility for the development of life and its relationships within a specific spatial area (SANTOS; CALDEYRO, 2007; SOUZA, 2019; SUERTEGARAY, 2021). In terms of complexity, it is possible to consider the environment as similar to geographic space in terms of its scope; however, the focus here lies on how natural elements enable and influence the relationships between humans and the environment.

According to Suertegaray (2021), the environment emerges as a result of human action on space, transforming nature and creating possibilities for it to become a commodity that arouses the interest of capital. In this sense, as a product endowed with commercial values, the higher the quality of this environment, the more valued it becomes, reaching more demanding audiences capable of paying for such quality.

Santos and Caldeyro (2007), understanding the environment as a fundamental element for the development of life, hold human beings responsible for environmental quality, a result of the level of interference of social actions in nature. In a city, for example, the more degraded the environment, the more devalued it becomes, leading to problems such as socio-spatial segregation and environmental injustice.

This responsibility, currently attributed to human beings, is not in vain. For a long time, environmental problems were understood as unrelated to the human condition. Media outlets and radical environmentalists sometimes considered events such as floods and mass movements as punishments or responses from a nature angered by its inhabitants.

By placing themselves “outside” the environment, humans remove all responsibility they have for environmental impacts. Souza (2019, p. 79, translated) reinforces the idea that “the environment, therefore, is not something

that 'surrounds us', an envelope: the environment is also us, historically and culturally situated", therefore, humans are not only responsible for environmental problems but are also part of them.

By adopting the idea of an environment historically and socially constructed by human beings, as well as by the other physical components that are part of it, it is urgent to see it as a set of interconnected systems, endowed with natural flows and cycles. As social activities are inserted into this natural environment, the flows and cycles tend to be disrupted, leading to a state of environmental imbalance.

Santos and Caldeyro (2007, p. 20, translated) reinforce the idea of a system and chain reaction, highlighting the fact that "the state of one element is a conditioning and determining factor in the state of another element, and so on". As an example, as the soil surface becomes impermeable, infiltration decreases and surface runoff of rainwater increases, consequently overloading the urban drainage system and promoting, in some cases, flash floods, localized flooding, and inundations. Thus, the elements of this environment are connected and depend on each other to function adequately, constituting a quality environment.

As socially and historically constructed, Coelho (2013) understands the environment as both active and passive; by providing physical support, it can be socially modified, while simultaneously modifying society. Referring to the discussion on the production of cities, planning, and the valuation of natural resources, when degraded by the occupation process, a specific spatial area loses commercial value, becoming directed towards the population with lower purchasing power. Thus, the environment is passive when subjected to such degradation and active when its natural conditions promote changes in the dynamics of occupation.

This access to the environment evidences the segregative character of the capitalist mode of production and the characteristics of the production of urban space. Carlos (2018) understands the segregation of urban space and the way the contemporary city is constructed, analyzing it as a result of the commodification of nature for the sake of capital reproduction.

The biggest problem lies in the disparities of this production model, because while those who possess capital have the possibility of choosing where to live, the same does not happen with those who do not have access to capital. The poorest population must accept what is destined for them, often in degraded

areas vulnerable to occupation, where urban environmental problems such as floods and mass movements are part of the reality.

According to Carlos (2018), elements such as private property and social hierarchy allow capitalism to distance the poorest from quality environments and prevent access to services offered by the city. This distancing from basic elements, such as a quality environment and integration into society, has led to studies aimed at understanding not only the social injustice behind segregation, but also the environmental injustice stemming from the unequal distribution of resources and environmental impacts (MENDONÇA, 2004; ACSELRAD, 2015).

According to Lima (2013),

Cities provoke profound modifications, and problems increase when there is no concern for planning urban spaces with a "view" of the environment as a whole, that is, considering social, economic, and environmental aspects (LIMA, 2013, p. 51, translated).

These modifications, without proper planning, affect not only the environment but also social and economic elements, since, according to Lima (2013), they influence the quality of the environment. Exposure to socio-environmental problems is, according to the author, a result of the unregulated interaction between society and nature, materializing in cities. It is in this materialization that the importance of urban planning and geomorphological knowledge is inserted; understanding the dynamics of nature and the desires of society is fundamental to reducing the impacts of the urbanization process.

The city, as a materialization of a system divided into classes, reflects this division in the access to and allocation of quality environments. Insofar as degraded environments are destined for the poorest population, we have what Acserald (2015) understands as environmental injustice. Conceived as an inconsistency in the responsibility for practices harmful to the environment, environmental injustice considers the accountability for environmental impacts, given that those who degrade the environment are usually not held responsible, while the poorest population is forced to live with such degradation.

According to Souza (2019),

Conceptually, therefore, environmental injustice has been understood as referring to social and spatial inequality in the distribution of the burden represented by the generation of contaminants as byproducts of industrial processes. But it is worthwhile to broaden this understanding, realizing that it concerns any process in which the potential harms of the exploitation and use of resources and the generation of undesirable waste are socio-spatially distributed asymmetrically,

depending on class cleavages and other social hierarchies (SOUZA, 2019, p. 130, translated).

Exposure to disaster risks, for example, arising from the occupation process during the city's development, as well as the capacity to withstand such events, also constitutes elements of environmental injustice (SOUZA, 2019). According to Coelho (2013), these urban environmental problems, whether ecological or social in nature, do not affect the urban space as a whole, and it is in this differentiation of those affected and those held responsible that environmental injustice is identified.

It is important to emphasize not only the environmental aspects, but also the economic, social, political and cultural ones, since, according to Cidade (2013), these contribute to understanding the exposure of certain social groups to events commonly identified in degraded environments.

Environmental problems stemming from a lack of urban planning affect environmental quality to varying degrees of intensity. Environmental quality, as a subjective concept, varies according to the individual or group evaluating it. Ferreira (2016) also associates it with quality of life, such as the health and well-being of a given population, as these are related to the environment in which individuals or social groups are embedded.

Luengo (2002) associates this environmental quality with the environments in which a given group is situated, especially in terms of comfort, ecological, economic-productive, sociocultural, and aesthetic aspects of spatial dimensions. In the materiality of urban space, urban planning becomes the main tool for guaranteeing environmental quality, adequately distributing occupations and offering quality urban services to the urban population as a whole.

However, the difference in access to quality services and environments in cities is evident. While the wealthier population can choose safer parts of the terrain, the poorer segment tends to be directed to valley bottoms and steep hillsides.

While the wealthy population has access to technologies and knowledge geared towards civil construction, the poor are left with irregular construction, with little planning and low-quality materials. In this sense, the environment degraded by exploitative practices causes the socioeconomically vulnerable population to be affected by the occurrence of urban environmental problems.

FINAL CONSIDERATIONS

From the moment we understand cities as the materialization of social, economic, political, cultural, etc., relations, it becomes clear that society has the capacity to transform the first nature into a second nature suited to the desires of capitalism. Divided into classes, the city clearly reflects the characteristics of the capitalist mode of production, appropriating natural elements and transforming them into commodities.

As a historical product, the city, as well as the constructed environment, retains the impacts and characteristics of events and processes that occurred during the development of society. The absence of urban planning that considered not only the expansion of the urban fabric, but also the physical components of the environment that would be affected, makes environmental degradation an urban reality.

A considerable portion of Brazilian cities have their core origins near river channels, which for a long time served not only as access routes and water sources, but also as dumping grounds for waste. As urban growth occurs, the population with greater purchasing power moves away from the valley bottoms in search of environmental quality and, consequently, a better quality of life.

It can be concluded from the discussions that cities built over time, disregarding urban planning and environmental quality, currently show scenarios of environmental degradation. The problem takes on even greater proportions when the most vulnerable population is forced to reside in these degraded areas. Environmental injustice, therefore, lies in the unequal distribution of a quality environment, especially when the most socioeconomically vulnerable are held responsible for the frequent environmental disasters identified in cities.

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