



THE COMMUNITY AS A PERSPECTIVE OF RETERRITORIALIZATION

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Abstract

Objective: to point out the consequences of urban growth on rural territory in the face of climate change.

Methodology: theoretical essay with a systemic approach, presenting, as a basis, the geophilosophical readings of Gilles Deleuze and Félix Guattari, through the method of social cartography. The essay dialogues with urban growth, with the urbanization process and the suppression of rice cultivation that is taking place in the town of Massaranduba, Santa Catarina.

Originality/Relevance: a theoretical reflection is carried out that contributes to the analysis of the urban expansion movement, which, based on the case of Massaranduba, becomes an analysis tool for any other instance.

Results: in a pessimistic scenario, occupation without adequate urban planning will cause numerous problems, such as population concentration; the systemic transformation in rural areas, and in the face of climate change, the potential for disasters. As a path of transformation in a more optimistic scenario, the need to mobilize public policies of popular participation is pointed out as an itinerary.

Social / management contributions: as a way of transformation, in a more optimistic scenario, the need to mobilize public policies of popular participation is pointed out.

Keywords: Regional Development. Sustainability. Public policy.

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Special Edition Guest Editors - Mudanças climáticas e planejamento urbano: cenários e desafios

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A COMUNIDADE COMO PERSPECTIVA DE RETERRITORIALIZAÇÃO

Resumo

Objetivo: apontar as consequências do crescimento urbano sobre o território rural diante do quadro de mudanças climáticas.

Metodologia: ensaio teórico de abordagem sistêmica, apresentando, como base, as leituras geofilosóficas de Gilles Deleuze e Félix Guattari, através do método da cartografia social. O ensaio dialoga com o crescimento urbano, com o processo de urbanização e a supressão da rizicultura que está ocorrendo no município de Massaranduba, Santa Catarina.

Originalidade/Relevância: é realizada uma reflexão teórica que contribui para analisar o movimento de expansão urbana, que a partir do caso de Massaranduba torna-se um instrumento de análise para qualquer outra instância.

Resultados: em um cenário pessimista, a ocupação sem planejamento urbano adequado ocasionará inúmeros problemas, como a concentração populacional; a transformação sistêmica no espaço rural, e diante do quadro de mudanças climáticas, a potencialização de desastres. Como caminho de transformação, num cenário mais otimista, aponta-se a necessidade da mobilização de políticas públicas de participação popular como itinerário.

Contribuições sociais / para a gestão: como caminho de transformação, num cenário mais otimista, aponta-se a necessidade da mobilização de políticas públicas de participação popular.

Palavras-chave: Desenvolvimento Regional. Sustentabilidade. Políticas Públicas.

LA COMUNIDAD COMO PERSPECTIVA DE RETERRORIZACIÓN

Resumen

Objetivo: señalar las consecuencias del crecimiento urbano en el territorio rural frente al cambio climático.

Metodología: ensayo teórico con enfoque sistémico, presentando como base las lecturas geofilosóficas de Gilles Deleuze y Félix Guattari, a través del método de la cartografía social. El ensayo dialoga con el crecimiento urbano, con el proceso de urbanización y la supresión del cultivo de arroz que está ocurriendo en el municipio de Massaranduba, Santa Catarina.

Originalidad/Relevancia: se realiza una reflexión teórica que contribuye al análisis del movimiento de expansión urbana que, a partir del caso de Massaranduba, se convierte en herramienta de análisis para cualquier otra instancia.

Resultados: en un escenario pesimista, la ocupación sin una adecuada planificación urbanística provocará numerosos problemas, como la concentración de la población; la transformación sistémica en las zonas rurales, y ante el cambio climático, el potencial de desastres. Como camino de transformación en un escenario más optimista, se señala como itinerario la necesidad de movilizar políticas públicas de participación popular.

Aportes sociales/de gestión: Como vía de transformación, en un escenario más optimista, se señala la necesidad de movilizar políticas públicas de participación popular.

Palabras clave: Desarrollo Regional. Sustentabilidad. Políticas públicas.



Introduction

The treatment of issues surrounding territory occurs in the multiplicity of events. The processes of globalization influence decision-making agendas at various scales. The territory is never just one thing; there are various forces at play in different directions, and they feed back into the conditions that shape it. Therefore, this text considers physical spaces and social production in their multiplicity.

The concept of multiplicity, in the text, refers to the philosophy of Deleuze & Guattari (2011), as they affirm that multiplicity is composed of dimensions that encompass each other. Each dimension recaptures all the others at another level, according to an open list that can be supplemented with new dimensions. The idea of multiplicity is contrary to the perspective of the One. Instead of thinking about the world from a singular bias, Deleuzo-Guattarian thought considers the branching of possibilities.

It is within the context of multiplicity that the territory exists, as pointed out by Deleuze & Guattari (2011). The branching of events allows the recognition of multiple forces acting on the territory. Deleuzo-Guattarian philosophy considers the material of the territory and virtuality (in the sense of what the territory can become) in its composition, surpassing explanations that are overly rigid and hierarchical. Multiplicity presents various paths, such as sustainability and social responsibility, which emerge as suggestions with the aim of constructing "safer" spaces.

Just as the territory does, regional development also operates in the field of multiplicity. In the past, it was linked to the idea of overcoming regional inequalities and over time has become an instrument for analyzing micro-regional characteristics, moving towards an amplified approach (Randolph, 2013). The challenge proposed in this text is an approach on a local scale, with the intention of articulating it globally.

Another important aspect to address is the issue of climate change. Climate, throughout history, has shown various phases of transformations. Many temporal scales have been influenced by the climate over the course of planetary history. Climate changes occur on a macro scale, showing that Mother Earth has experienced periods of cooling and warming, as noted by Pinsky et al. (2019).

There is no intention here to naturalize climate changes in the present time. Data show that human action, after the initial stages of the industrial revolution, accelerated the process of climate change (IPCC, 2022). It is in the field of intensification of processes that this study will address the consequences of climate-related disasters, which, in fact, are climate variabilities treated on a smaller time scale, as described by Juarês and Silva (2018).

Using a smaller time scale does not imply denying the transformation processes. According to the *Climate Change 2022* report, humanity will face, in the short term, disruptions in livelihoods; food insecurity; sea-level rise and coastal area flooding; infrastructure collapse;



and biodiversity loss as challenges to be faced if the human way of life does not undergo changes. The reflection revolves around a somewhat utopian proposition of the need to consider the present time as a space of change. These themes are of importance; however, this paper will focus on the reality of transformation based on infrastructure collapses.

Mobilized by these concepts, the aim is to point out the consequences of urban growth and the process of urbanization on rural territory, in the context of climate change. For this purpose, two conditions are observed: the first recognizes that urban territory is expanding, and that, because of rural exodus, the rate of growth seems to be more intense than the spatial transformation agendas managed by public policies. The second condition is the experience of climate change aggravated by human behavior, as pointed out by the IPCC (2022). Both conditions are intertwined.

To develop the objective, a dialogical path is proposed between geophilosophy (Deleuze & Guattari, 2010) and regional development. The path will result in a social cartography (Deleuze & Guattari, 2011), pointing out, considering the problems, directions or solutions based on the analysis of the case of reterritorialization experienced in Massaranduba, Santa Catarina. The concepts of geophilosophy, regional development, and social cartography will be presented in the following text, as well as the context and motivation for choosing a small city, with approximately 20,000 inhabitants, located in the north of Santa Catarina, as the study.

The theoretical conditions involving the methodology chosen for this approach will be presented in the next section. It should be anticipated that geophilosophy and social cartography are approached from their connections. The concepts, in the innovative logic of Deleuze & Guattari, are rhizomatic approaches that establish connections among themselves and with the other concepts addressed here. For this reason, they are only announced now and will be addressed in the following section.

The article will be divided into four other sections, in addition to this introductory one. The following section will present the theoretical and methodological foundations; subsequently, the research territory will be discussed. With these elements, the fourth section will point out the geophilosophy of reterritorialization with the problems and consequences of irregular land occupation in urban areas in the context of climate change. Finally, in the final considerations, recommendations for actions will be visualized.

Theoretical Framework

This section will address the relevant concepts for the discussion and is divided into six openings. Each of them will point to structuring concepts for the intended reflection and are divided into two groups. The first group includes the concepts of territory; geophilosophy, and



social cartography. In the second group are concepts interwoven with implications, which intersect, such as the hinterland as a space of dispute, and public management in the face of climate change and how regional development deals with these issues. Each of them will be addressed didactically separately, although in reflection, they are systemic.

The first concept is that of territory. The notion of territory has undergone different conceptions over time, as Saquet (2008) reminds us. In the 1960s, for example, it was used to highlight social contradictions, struggles and classes, and historical forms of post-war world structural changes. From the 1970s onwards, with an emphasis in the following decade, it was understood from a geo-historical perspective, emphasizing the notion of relative space.

Here, another perspective of territory will be used. With Saquet (2008), territory will be considered approaching it with Deleuze & Guattari (2011). The territory is of the nature of the rhizome. To arrive at this affirmation, we start with Saquet (2008, p. 77), who states, "the territory is a collective and multidimensional construction with multiple territorialities." It is what presents itself and the conditions that traverse it. A product of webs that considers three major elements: multidimensionality, the relational actions of the various actors that make up the space, and the processual constructions given from these actors.

It is affirmed that the territory is of the nature of the rhizome because it comprises, according to Deleuze & Guattari (2011), the six approximate principles of the rhizome, which are connection, heterogeneity, multiplicity, asignifying ruptures, decalcomania, and finally, cartography. The territory is a compound of transversality that opposes reductionist views; it is not of the One, but of the many things that are, or that can become. It is not a pivoting root but rather rhizomatic, much like the root of a banana tree. The territory is a field of many events, as previously mentioned, or of numerous webs.

The second opening is the concept of geophilosophy. As evident in the term itself, it presents a dialogical perspective between geography and philosophy, in this case, the common element for dialogue being the concept of territory. According to Deleuze & Guattari (2010), geophilosophy is of the earth and thought. It is of the earth in relation to the territory and of thought because power relations flow, creating and recreating concepts. It is not just an analysis of space as a geographical category but of fields that go through the territory and thought, considering the multiplicity of movement. It is close to what Saquet (2008) calls the TDR movement (territory - deterritorialization - reterritorialization).

Geophilosophy is an intense field of multidimensional character relations. According to Deleuze & Guattari (2010), it considers that the connection between the earth and the territory converges towards the emergence of an immanence. Geophilosophy is concerned with a means of encounters and affections, unveiling the territory as a field of experiments. Therefore, it is affirmed that it is of the plane of thought because, didactically, it tries to "organize" multiplicity, based on the affects derived from experiments.



The Deleuzo-Guattarian reflection on geophilosophy is based on the reflections presented by Nietzsche, in that it presents a dogmatic rupture, such as the idea of seeing the territory merely as a category of geography. It should be noted here that the use of the term category differs from the Aristotelian conception of category. The Greek philosopher uses it as a general concept that expresses the various relationships established between ideas and facts. While geography is used as the presentation of a fundamental concept.

The third concept is related to the research method, social cartography, which is conceived from Deleuze & Guattari (2011). Cartography follows processes through vectors, which the authors call rhizomes. A Deleuzo-Guattarian cartographic research is not merely a descriptive action but proposes an intervention of co-production nature between the searcher and the researched object. This means stating that it is an action of belonging, where the researcher and the research transform each other. According to Deleuze & Guattari (2011), "cartography happens with affects" and cannot be justified by any structural model.

Zourabichvili (2009) classifies the Deleuzo-Guattarian method as an anti-method, or amethod. Cartography in this sense that escapes the formal or traditional presentation of the term allows the construction of a critique of established binary models of approaching the world. It can be classified as an amethod because it puts in check the puritan bureaucracy of academia and considers the map as a representation of thought, not as a tracing. A map is the possibility of many entrances and can be accessed from numerous points. Cartography is born from multiplicity to think about the territory through the TDR movement - a movement that never ceases to happen.

The action of cartography will occur in a relational construction between the multiple forces that traverse both the researcher and the researched object. It provokes an intimate relationship with the territory, asking about the social relations that constitute it. By asking, the lines of intentionality that act on the territory and everything that is there are unveiled. In the case of this research, social cartography will denounce the intentions and power relations that act on urban growth and the process of urbanization and the suppression of rice farming that is occurring in Massaranduba. With the denunciation, possible actions will follow.

Social cartography seeks to map the processes of transformation and multiplicity that occur in social spaces. It focuses on the interactions between different elements, such as people, institutions, cultural and political practices, and seeks to reveal the power relations and flows of desire that operate in these spaces. To address these conditions, the chosen references promote a multidisciplinary dialogue with the theme. Things are what they are there, and at the same time, they are so many other things as well. References that say what they are, and at the same time, present many other things as well.

By presenting the structural concepts, three other questions are opened. The first of these is to think of the hinterland as a space of dispute. This relationship will be approached



from Brenner (2017), who presents the hinterland. The hinterland is not only considered as a transitional place but as a set that encompasses multiple relationships. It is a space of forces, sometimes rural, sometimes urban, which intersect, producing a land that is not yet urban but has already ceased to be rural. It is a field of constant reterritorializations or disputes, given the TDR logic. The hinterland is the territory of many things, but it is not a copy; it is indeed an unsuspected region that leads that land to other facets.

The history of Planet Earth is a journey of environmental and territorial transformations. Authors like Aumond & Silva (2018) recall that the process of climate change is the consequence of natural processes that have always occurred in geological history. What we experience in the present time is a set of transformations and impacts driven by changes caused by human beings, intensely, from the industrial revolution onwards. It is a time when human action affects the planet with an unprecedented intensity. This scenario brings consequences of aggravated environmental impacts with events of great intensity.

According to Aumond & Silva (2018), for example, one of the problems experienced in the state of Santa Catarina is events of great impact. Taking the environmental disaster that occurred in the Itajaí Valley in 2008 as an example, they found opposite situations within the state. While the cities in the Itajaí Valley registered intense rainfall and mass displacements, which resulted in hundreds of deaths, at four hundred kilometers, cities in the Western Region of Santa Catarina recorded crop losses due to a long drought, and many of them rationed the supply of drinking water. On one side, floods, and mass movements, on the other, the absence of rain. The authors cited the events of 2008, but this scene was repeated in the rains of the Santa Catarina coast in 2022 and the drought in the North Plateau and Great West.

The context of climate change implies, for public management, the need to develop care policies. Aumond & Silva (2018) point out that, faced with the chaotic process of occupation and the suppression of vegetation cover, it would be up to public management to establish more efficient policies to reduce the consequences of disasters. Human occupation has transformed, not only in Santa Catarina but in many regions, the natural landscape into a cultural landscape. Within this possibility, it would be an acceptable way to mobilize actions of cooperation between the social actors involved, forming a more responsible territory.

The last conceptual opening will deal with regional development and how it deals with the disciplinary themes pointed out so far. Regional development, as a discipline, is a reflective exercise of regional complexity. Therefore, it does not end with a single theme, but is open to the multiplicity of events. One could reduce the theme to two ideas, first, the idea of development, and then the idea of the regional, but this would not exhaust the debate around the proposed conceptual opening. It is this, but it is so many other things.

When thinking about regional development, one thinks of the region in dialogue with the multiplicity of forces that traverse space. Development is taken as a prerogative beyond



the reductionist idea of economic growth. It represents this too, but it is a set of other things because it is an attempt to explain the phenomena that make up a territory and how they relate socially. Regional development is a relational field of action for multiplicities, forming as many connections as are necessary to explain the surrounding reality.

The structural concepts, pointed out so far, will be connected to the proposed reflection, to think about how urban growth and the suppression of rice farming are occurring in Massaranduba, Santa Catarina, and how these, in turn, transform the space. The TDR movement will allow for a systemic approach, considering different problems and solutions.

Continuing with the discussion, the presented concepts not only provide a theoretical basis for understanding the multifaceted nature of the territorial dynamics in the context of climate change but also offer a framework for addressing the challenges and potential solutions related to the urban-rural dynamics in the specific case of Massaranduba, Santa Catarina. By integrating these diverse theoretical perspectives, the study aims to offer a comprehensive and holistic analysis of the complex interplay among human activities, environmental changes, and territorial transformations.

The research territory

The research territory is the municipality of Massaranduba, Santa Catarina. In the following section, the historical formation of the territory and some current geographical conditions will be presented. Prior to this, Massaranduba was chosen for the research because this reflection is linked to a larger study that aims to investigate how urban growth reterritorializes the rural, transforming it into a new space. The primary research is associated with a postgraduate program in regional development.

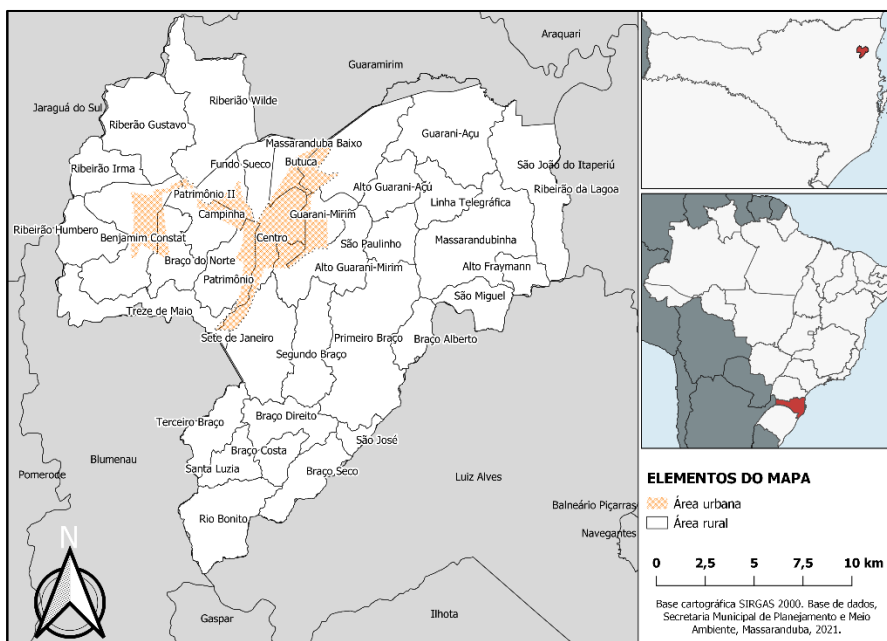
The condition of reterritorialization in Massaranduba is not a unique condition for the choice. The reterritorialization conditions that occur in the municipality are repeated in other territories. With the intensification of the rural exodus movement in Brazil, there has been a transformation not only in housing but also in ways of life, both in urban and rural areas. However, larger municipalities underwent spatial reterritorialization at a different time from smaller municipalities. To justify the choice of Massaranduba, it is asserted that studying reterritorialization phenomena on a smaller scale would theoretically provide systemic solutions to problems that are already occurring on a larger scale.

Massaranduba is a city located in the Vale do Itapocu, in the northern region of the State of Santa Catarina. Currently, it has an approximate population of 17,000 inhabitants, where, according to IBGE (2017), 51% of the population is projected to be in urban areas and the remaining 49% in rural areas. The urban population has intensified in the last decade. The population transformation has also marked, and still marks, an economic transformation.

Formerly, it was an essentially agricultural municipality, and currently, 44% of the economy is supported by the industrial sector, as stated by SEBRAE (2010).

Figure 1

Location of Massaranduba



Source: map elaborated by the authors (2021).

The history of Massaranduba is recorded by the arrival of European migrants in the second half of the 19th century, as reported by Adami & Rosa (2004). With the expansion of the then colony of Blumenau to the north, a path was opened connecting the colony's headquarters to Babitonga Bay in Joinville. This path passed through plains and swamps near the meeting point of the Serra do Mar, where the municipality is now located. It was positioned between the Itajaí-Açu River, the main river of the province of Santa Catarina, and the Itapocu River further to the north.

Before the arrival of European settlers, there are no records of the presence of indigenous peoples, except for some conflicting reports from colonizers, as described by Oliveira (1997). Therefore, there are some difficulties in discussing the history of Massaranduba, and only the 19th century European occupation is taken as the starting point. It is characterized by a larger presence of Germans and Poles in the plain's region, with the Blumenau-Babitonga road as a reference point, while the mountainous region to the south of the plains was occupied by Italians who settled from the banks of the Luís Alves River. This area was incorporated into Massaranduba upon its political emancipation in 1948. Until then, it was connected to the municipality of Itajaí.

The history of the settlement showed that the colonizers developed subsistence

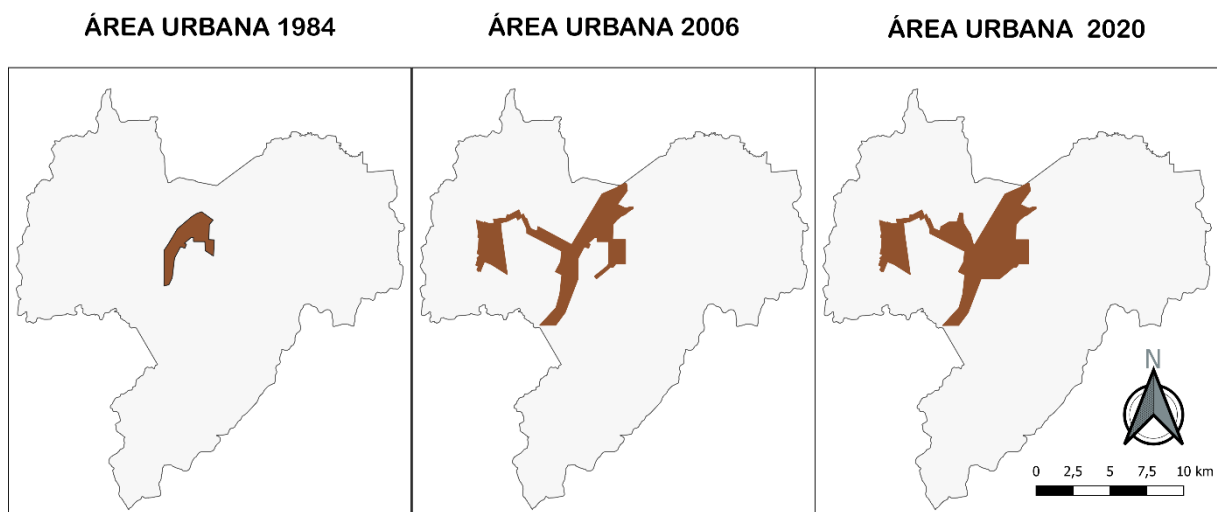
agricultural activities. The plains were spaces for the cultivation of irrigated rice, taking advantage of the water capacity of the streams. The high region, with rugged terrain, developed the cultivation of sugarcane, dairy products, and later, tobacco and bananas.

The headquarters, first of the village, then of the municipality, was in the plains, driven by the growing rice production. Until the 1980s, according to Adami & Rosa (2004), Massaranduba recorded the highest rice production in the state, earning it the title of the rice capital of Santa Catarina. In 1968, a group of approximately fifty farmers formed an agricultural cooperative, bringing together rice producers.

The history of the territorial creation of Massaranduba is essentially rural, derived from family farming. What has been observed in recent times is a movement of reterritorialization, with a growing urban area and an expansion into the hinterland. In addition to the occupation movement, there has been a transformation in the way of life, as highlighted by Anjos (1996). The rural worker has left agriculture to dedicate himself to urban activities. However, the focus of the research is to perceive the level of transformation of areas previously occupied by rice cultivation, now turned into residential spaces.

Figure 1

Expansion of the urban area of Massaranduba



Source: map created by the author (2022) based on the text from the Urban Development Plan of Massaranduba (2022).

Figure 2 shows how the urban area of the municipality has grown since the 1980s. The dates indicated on the map in the figure are linked to the texts of the municipality's master plans and the need to delimit the urban area. The expansion in the urban area is not only a spatial condition, as the map in the figure demonstrates, but it is a territorial occupation of rice cultivation areas, with a higher urban population density and the establishment of other ways



of life, as described by Anjos (1996).

The problem arising from this movement is that urban growth was not accompanied by planning actions. There is a sense, when reading the texts of the master plans, that expansion occurs and only afterwards is there a concern to adapt to it. Moreover, the suppression of rice cultivation is not only the change from a mode of production to a mode of land occupation. The rice cultivation areas were structured through the construction of a network of water distribution channels through the municipality's plains, and the artificial creation of water dams at strategic points for rice cultivation.

The process of housing occupation, from the center to the rural areas, forming an extensive hinterland, leads to constructions on areas that were previously occupied by channels and rice fields. The expansion process disregards the water courses, and there is not sufficient urban planning that discusses such problems, as noted in the text of the Master Plan, Complementary Law No. 142 (2020). The next section will address the conditions and consequences of this movement.

The geophilosophy of reterritorialization: the community's premise

The land, within the context of Massaranduba, as demonstrated by Adami & Rosa (2004), holds a sense of identity. The historical process highlighted the land's occupation for subsistence. The identity was marked by the creation of a space where people left their continent, traveled overseas, settled in another space, and built another way of life adapted to the tropics. It is a process of subsistence because the mode of production was born from the land, whether through agriculture or family-scale farming. These historical roots mark the present time.

The manner of land occupation and its consequences in the face of the framework of climate change is not an action detached from Massaranduba's historical formation. In view of the occupation of the plains with the development of rice cultivation, it is evident that the entire process was negligent of the responsibilities regarding the use of natural resources and the socio-environmental function of the land. The primary necessity of subsistence is recognized, and the passing years have not altered the discourse of exploitative land use.

The establishment of specific spaces for rice cultivation, the mainstay of Massaranduba's agricultural production, involved the construction of a network of channels, using water from streams and brooks to irrigate the crops. The planted area receives additives, such as fertilizers and pesticides, and the water is returned to the riverbed with little to no treatment. Thus, the use of water resources and water contamination result from a productive necessity.

This element highlights a patrimonialist focus on the use and exploitation of the land. It

forms a set, first, the legacy of an exploitative mode of production and, concurrently, permissive environmental laws. The argument in this text is that the patrimonialist use of the land has created a logic of occupying the territory. Just as immigrants settled, the hinterland is now occupied, promoting the construction of spaces that were formerly dedicated to rice cultivation and are now designated for housing and economic production.

The problem arises from this logic of occupation, which maintains an individualistic perspective. The individual legitimately appropriates all natural resources but ignores the need to consider the common good. One issue is that new constructions in the process of housing expansion will occur in areas that were once streams or canals for rice cultivation. The canals disappear, and what happens to the watercourse? It is not only occupation but also the reterritorialization of a rural occupation scenario that has now become another space, urbanized without adequate planning to meet present-day needs.

Figure 2

Via projetada R117, Centro



Source: researcher's collection (2021).

Figure 3 depicts the problem presented in the text well. On one side, there is agricultural production constricted by the opening of a road, and on the other, the houses that mark a new urban area over the agricultural production space. The depicted street is Via Projetada R117, opened in an area previously used for rice cultivation, now replaced by numerous houses. This is not an isolated case. The construction of the street foresaw the implementation of the water and sewage network, but beyond that, there was no other planning action. The rice cultivation channels were roughly diverted with the "red clay," shown on the left side of the photo.

Figure 3

Loteamento Kruger, Benjamim Constant



Source: researcher's collection (2022)

Figure 4 shows the process of reterritorialization in the urban area beyond the town center. The subdivision was built in an area that was previously occupied by a reservoir that supplied rice plantations. This movement alters not only the channels but also the way of thinking about water use, both in agriculture and for human consumption. The space underwent earthworks, and the reservoir has now been transformed into a place for housing.

The issue of water is touched upon here. The proper use of natural resources is a social and common issue, not a patrimonial or individualistic one. Transforming the urban environment into an expansion space without the validation of regulatory bodies, or due to their laxity, risks promoting catastrophic scenarios.

As mentioned, Santa Catarina is experiencing a scenario of intense climatic phenomena. It is a situation with climate change and extreme events, while simultaneously experiencing urban growth. When this happens without considering the socio-environmental aspect, it is a path to potentially amplify a series of disasters, as already occurred in the state, as pointed out by Aumond & Bacca (2012). The proposals of the Master Plan (2020) are seen as a path to suppress potential problems. However, this is a discussion that lacks greater depth, especially regarding the area of suppression of rice cultivation and how it will be occupied.

Considering that historically the constitution of Massaranduba, at least in the flat areas near the urban center, the first reterritorialization caused by land occupants was the construction of rice cultivation and long water supply channels, as indicated by Hilbert (2019)



and Sanches (2022). Extreme climatic events, as suggested by Aumond & Bacca (2012), could theoretically cause floods or water shortages. The water resource was occupied without resilient concern, according to Hilbert (2019). The figures shown indicate that a new reterritorialization is taking place without the necessary caution. Developments are created without a proper water drainage system, for example, and official documents do not legislate about the old rice cultivation channels. It is not the intention of the text to map the consequences of climate change but rather to point out that the legislation is negligent in the face of the changing situation.

Another problem in the occupation process is that urban expansion first happens, and then legal procedures emerge to adapt the law to environmental conditions. Until the *Federal Constitution* (2016), agricultural production and urban occupation did not face significant legal and environmental obstacles or restrictions, just like real estate speculation. There are multiple factors influencing the expansion of urban spaces.

If the history of Massaranduba showed that water management in terms of rice cultivation was guided by common sense, the reterritorialization of this space is also in the present. One question that could be raised is, what is the role, or what is the presence of the state in the face of urban expansion processes? Or, how to propose a legal framework that visualizes urban expansion in a context of climate change, in a way that does not harm the environment and preserves the integrity of citizens?

Urban growth and climate change are related phenomena. What is perceived, not only in Massaranduba, is that urban area expansion occurs in sensitive and vulnerable areas, with minimal state presence and intervention. Risks are maximized when population concentration creates a more vulnerable and poor population. The way urban spaces are structured in an economy guided by the logic of capital and consumption.

Faced with these issues, a structural solution would be the regulation of land occupation through the City Statute (Brazil, 2001), highlighting guidelines for the common good. It would be a paradigm shift from the conditions given until the *Federal Constitution of 1988*. Starting from the occupation and use of land as an individual solution to think about the community that is reterritorializing a space.

The Statute is a political instrument that visualizes urban development without losing sight of the social functions of property. A legal and theoretical perspective that would generate local instruments to minimize areas of vulnerability and provide greater resilience in the face of climate change. If it is so, why does urban expansion still occur in problematic areas? One thing is the tool, and another is the distance from the local application of the tool.

The scenario of transformations should lead to two actions: mitigation and adaptation. The multiplicities that traverse a small municipality like Massaranduba could serve as an example and, at the same time, provide a more efficient space for reterritorialization than areas



with a higher population concentration. But this is a discourse that is in the realm of possibility, given politically timid conditions.

Considerations

Regional development was announced at the opening of the reflection and was implicitly present in every paragraph, even if it was explicitly suspended for a few pages. The regional complexity does not end in a single theme; a localized scenario was addressed, in the case of Massaranduba, with the intention of highlighting a systemic perspective. A possible dialogue between the surrounding reality of Massaranduba and the multiplicity of forces through the relational field of the many things that happen there.

Considering the possibilities of dialogue with regional development, the aim was to point out the consequences of urban growth on rural territory, in the context of climate change, using the example of Massaranduba. Two conditions were reflected upon. The first, in a pessimistic scenario, is that uncontrolled urban development will cause numerous problems, such as population concentration, systemic transformation in rural areas, and, in the context of climate change, the exacerbation of disasters.

As a path of transformation in a more optimistic scenario, the need for the mobilization of public policies with popular participation was highlighted. In this context, some cartographic contributions are sought to review the reterritorialization framework. They involve two paths: mobilization of public policies and education for community life.

The municipality of Massaranduba has made progress with public policies by structuring the City Statute. However, greater cooperation among the involved social actors could be developed. The issue of urban expansion and water use represents multiple interests. Greater and more effective involvement could occur through the creation of co-management bodies, involving the interests of family farming, urban expansion, and foreseeing policies for the mitigation and prevention of the impacts of climate change.

The second set of proposals involves an educational itinerary, whether through formal education or paths of community involvement to discuss the ecosocial responsibility of all actors involved. The multiplicity of events are not the responsibility of just a few entities but of the entire community. Educate for what? As mentioned earlier, the mobilization of ecosocial responsibility and the recognition of the consequences of disasters caused by the climate change framework, given the extreme conditions already experienced in Santa Catarina.

The proposals may suggest a utopian path, speaking of public participation and education. However, if not done, the chances of reproducing events with impactful disasters will become increasingly prevalent. In summary, the recommendation is for public involvement policies and a more effective educational framework.



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