
Transformations in the metropolitan rural landscape: the advance of agribusiness and its conflicts

Transformaciones en el paisaje rural metropolitano: el avance del agronegocio y sus conflictos

Transformações na paisagem do rural metropolitano: o avanço do agronegócio e seus conflitos

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Abstract

This article discusses the transformations of the rural landscape in the Paraíba Valley and Sorocaba Metropolitan Regions, located within the São Paulo Macrometropolis, based on the perception of those who live and inhabit rural spaces within these metropolises. It reaffirms the concept of Metropolitan Rural, challenging the apparent contradiction between these two terms and assuming as a premise the paradigm of the new rurality – the contemporary, multifunctional, and pluriactive rural, a fundamental space for water production, climate regulation, and food security in metropolises. The results reveal that the metropolitan rural remains an agricultural space, but food production is being transformed by the expansion of commodities, with potential impacts that threaten ecosystem services fundamental to the climate resilience of metropolises.

Keywords: Metropolitan Rural; São Paulo Macrometropolis, rural landscape, contemporary rural, agribusiness expansion

Resumen

Este artículo analiza las transformaciones del paisaje rural en las Regiones Metropolitanas del Valle de Paraíba y Sorocaba, ubicadas en la Macrometrópolis de São Paulo, desde la perspectiva de quienes viven y habitan los espacios rurales dentro de las metrópolis. Reafirma el concepto de Rural Metropolitano, cuestionando la aparente contradicción entre estos dos términos y asumiendo como premisa el paradigma de la nueva ruralidad: el rural contemporáneo, multifuncional y pluriactivo, un espacio fundamental para la producción de agua, la regulación climática y la seguridad alimentaria en las metrópolis. Los resultados revelan que el rural

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metropolitano sigue siendo un espacio agrícola, pero la producción de alimentos se está transformando por la expansión de los productos básicos, con posibles impactos que amenazan los servicios ecosistémicos fundamentales para la resiliencia climática de las metrópolis.

Palabras clave: Rural Metropolitano; Macrometrópolis de São Paulo, paisaje rural, rural contemporáneo, expansión de la agroindustria

Resumo

Esse artigo aborda as transformações da paisagem rural nas Regiões Metropolitanas do Vale do Paraíba e Sorocaba, situadas na Macrometrópole Paulista, a partir da percepção de quem vive e habita os espaços rurais inseridos nas metrópoles. Reafirma o conceito de Rural Metropolitano, desafiando a aparente contradição entre esses dois termos e assumindo como premissa o paradigma da nova ruralidade – o rural contemporâneo, multifuncional e pluriativo, espaço fundamental para a produção de água, regulação climática e segurança alimentar das metrópoles. Os resultados revelam que o rural metropolitano permanece como espaço agrícola, mas a produção de alimentos vem sendo transformada pela expansão das commodities, com potenciais impactos que ameaçam serviços ecossistêmicos fundamentais para a resiliência climática das metrópoles

Palavras-chave: Rural metropolitano; macrometrópole paulista, paisagem rural, rural contemporâneo, expansão do agronegócio.

Introduction

Rural spaces are fundamental for climate regulation, biodiversity protection, and water and food production (Bellenzani; Fernandes; Travassos, 2021). On the other hand, they are areas where land-use change severely impacts the provision of these ecosystem services (Millennium Ecosystem Assessment, 2005).

Regarding what is rural and what is urban in contemporary times, two ideas prevail: the first asserts that the rural tends to disappear as a category of analysis as the urban experience transcends the city (Brenner & Schmidt, 2015). The second points to the emergence of a new rurality based on the appreciation of natural heritage and the diversification of economic activities, functions, and social interests beyond agriculture (Abramovay, 2003; Veiga 2004; Silva 1999). For Wanderley (2009), despite the apparent antagonism between these two ideas, it is possible to establish a dialogue between them, and to consider an extensive urbanization that

recognizes the permanence of the rural as a singular space. Thus, we affirm the metropolitan rural landscape—the rural landscape that persists and survives even in highly urbanized spaces such as metropolises—as a strategic space for climate adaptation and resilience (Favareto and Empinotti (2019). However, it has not been sufficiently addressed in territorial planning, where an urban-centric approach prevails. Consequently, the metropolitan rural landscape tends to be relegated to a residual space, peripheral to cities.

This article is based on the doctoral thesis "Lived Landscapes of the Metropolitan Rural: Perceptions, Meanings, and Transformations of Rurality" (Bellenzani, 2024), which investigated how rurality and its transformations are perceived in the rural landscape by residents of rural spaces in the Metropolitan Regions of Sorocaba (RMS) and Vale do Paraíba e Litoral Norte (RMVPLN), within the São Paulo Macrometropolis (MMP). The research revealed various transformations of the metropolitan rural landscape, evidencing that the metropolitan rural landscape is not only agricultural, but continues to be agricultural, and this agriculture is undergoing transformations. significant. These transformations, and their potential impacts, are the focus here.

The article is structured in four parts. The first briefly discusses rural development in the São Paulo Macrometropolis. The second briefly discusses the research methodology, and the third presents the results, focusing on the transformations in agricultural production. Finally, the fourth section offers some concluding remarks and recommendations.

Transformations in the metropolitan rural landscape

The MMP is comprised of the Metropolitan Regions of São Paulo, Campinas, Sorocaba, Baixada Santista, Vale do Paraíba and Litoral Norte, Jundiaí, Piracicaba, and the Bragantina Regional Unit.

Although defined by predominantly urban attributes and with most municipalities classified as urban (Portes, 2019; Bellenzani, 2024), a large portion of

the MMP's territory is classified as rural, according to the 2010 IBGE Census: 74% of the area is classified as rural, and 25.6% as urban. Rural spaces are insufficiently recognized in the relevant territorial planning instruments – the Metropolitan Action Plan and the Integrated Urban Development Plans (Bellenzani, 2024) and Master Plans (Travassos, Mori, and Araújo, 2023).

Galvão (2017) and Portes (2019) found a strong presence of rurality throughout the macro-metropolitan territory. Fernandes (2020) proposed a typology for rural areas in the MMP, resulting in five types, described by Fernandes et al. (2023). This typology, as well as those recently proposed by the IBGE (2017 and 2023), supported the definition of the research's territorial segments.

Through semi-structured interviews, we sought to capture the transformations perceived by the interviewees. Fifty in-person interviews were conducted, twenty-five in each Metropolitan Region, including farmers, people involved in tourism, public servants, and residents. Interviewees were selected using chain sampling (Vituno, 2014), seeking to balance traditional and neo-rural inhabitants (Giuliani, 1990).

The material was analyzed for its content (Souza and Santos, 2020) and systematized according to categories based on the literature and informed by the content of the testimonies themselves.

The choice of this methodological and procedural approach aims to capture, as Buttner (2015) states, the "inside" perspective, that is, the perspective informed by everyday life. The "outside" perspective is the researcher's analytical perspective, informed by theory and the research itself, by relating the findings to academic and institutional literature. The hypothesis, which proved consistent, is that the everyday perspective can bring to light recent phenomena that have been insufficiently addressed in academic works related to the metropolitan rural area and, thus, contribute to illuminating them. This is the case with the expansion of commodities in the MMP.

The testimonies related to the perception of landscape transformations, responding to question: “What changes do you notice in this landscape (where you live and/or work)?” were classified into four themes: land structure, natural landscape, agricultural production and culture, as cited in the responses.

Table 1: Classification of responses, by region and by topic, in number and percentage.

| Theme | RM VPLN | | RM S | |
|-------------------------|---------|------------|--------|------------|
| | Number | Percentage | Number | Percentage |
| Land Structure | 12 | 32 | 18 | 47 |
| Natural Landscape | 16 | 42 | 9 | 24 |
| Agricultural Production | 7 | 18 | 11 | 29 |
| Culture | 3 | 8 | 0 | zero |
| Theme | 38 | 100 | 38 | 100 |

Source: Prepared by the author (2024)

Some interviewees identified changes in more than one category, as expected, since they are related. The perception of transformation in agricultural production, the focus of this article, appeared in both sections, being more pronounced in the RMS. The following transcribed statements illustrate this phenomenon.

We're worried because there's real estate speculation in condominiums right next door. We don't want to be surrounded by condominiums, but by farms. But not by farms that use pesticides, by agribusiness, which is also growing a lot here. Soybeans and corn, mainly (Agroecological farmer, Salto de Pirapora, RMS, 2024).

A lot of change. Before, they grew vegetables, beans, and everything. Then, they switched to sugarcane. Then, people started leasing lots to plant soybeans. Agribusiness is moving in and leasing people's lands. It's not allowed in the settlement, but around it's like this: sugarcane, corn, soybeans, or subdivisions (Farmer, Agrarian Reform settler, Ipanema II settlement, Iperó, RMS, 2024).

To produce rice in the floodplain, I have to have water. Currently, there are a lot of problems. It's drying out, and water quality is crucial for rice. When soybeans started to appear here, I brought a researcher from Embrapa, and he said, "How can you plant soybeans in a waterlogged area?" But they plant, build a drainage system, and have good productivity because the soil is fertile, and if the water has sewage, it doesn't matter; the organic matter stays there." (CATI Extension Agent, Taubaté, RMVPLN, 2024).

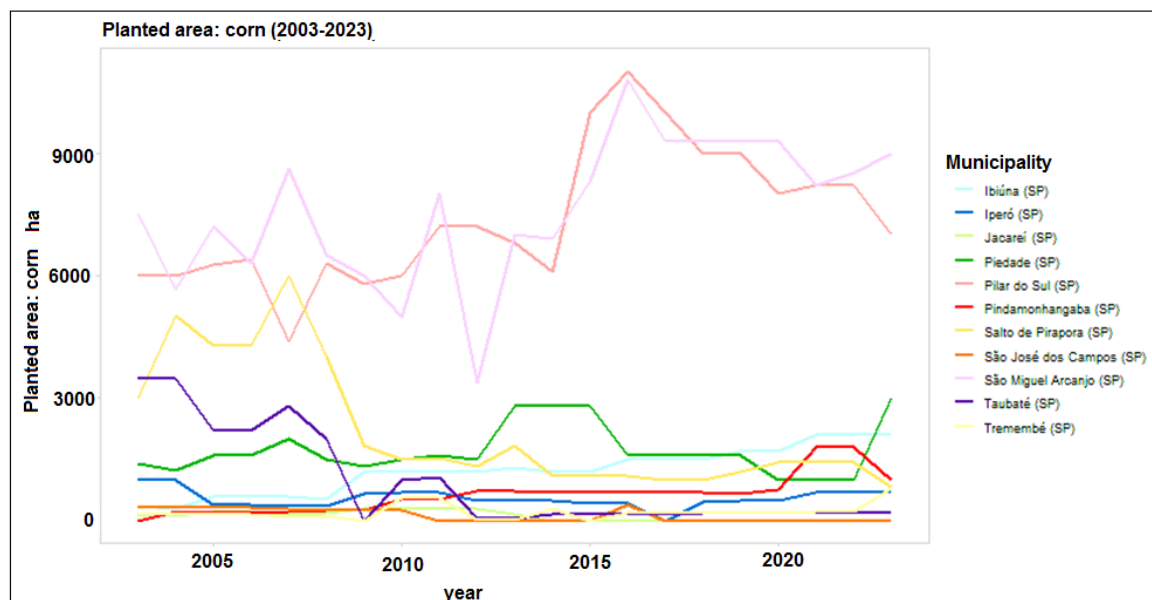


We'll have to leave soon, maybe. People had fruits, vegetables, greens, potatoes, carrots, cabbage. Not anymore; they lease them for soybeans and corn. It's in the hands of a few people. A lot of production, few producers. Some owners have larger farms, but there are small ones who have been leasing them. This place could soon be surrounded by soybeans. It will either become urban or become soybean, and we'll be stuck in the middle, squeezed. (Conventional family farmer, Pilar do Sul, RMS, 2024).

In fact, things are changing. If the land is flatter, it ends up being leased for soybeans. Back then, no one thought of planting soybeans in Ibiúna—never, no one had planted soybeans in Ibiúna. In recent years, there's only one producer here in Ibiúna who plants soybeans. About two years ago, they already had 250 hectares in Ibiúna alone. They're leasing from the smallholders. 250 hectares in Ibiúna is a lot of land; the properties are relatively small. (Organic farmer, entrepreneur, Ibiúna, RMS, 2024).

The data extracted from the Municipal Agricultural Survey, presented in the following figures, corroborate what was mentioned in the statements, showing the increase in the area planted with soybeans and corn in both Metropolitan Regions, as well as the decrease in rice farming in the RMVPLN².

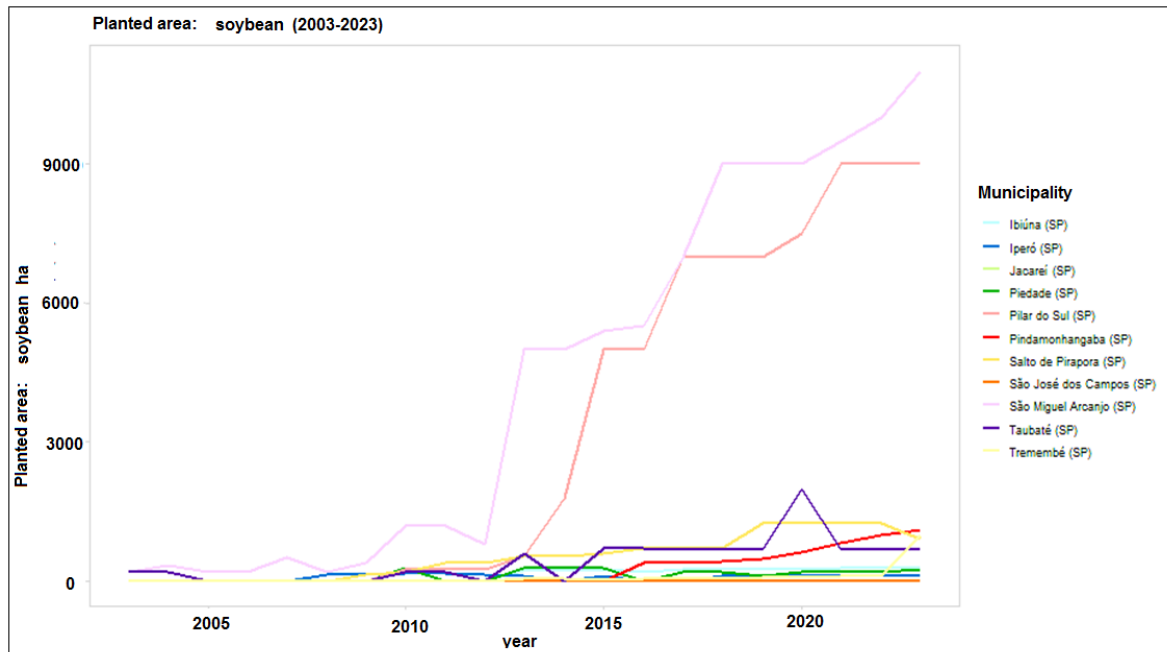
Graph 1 – Area planted with corn, in hectares, 2003-2023, in the territorial scope of the research.



Source: Bellenzani, 2024. Adapted from IBGE (2023a). Prepared by Leonardo Barbosa da Silva (2024).

²The data refer only to the municipalities and cultures where the phenomenon was mentioned in the testimonies and/or observed by the researcher. It is not a comprehensive analysis of the spatiotemporal dynamics of agriculture.

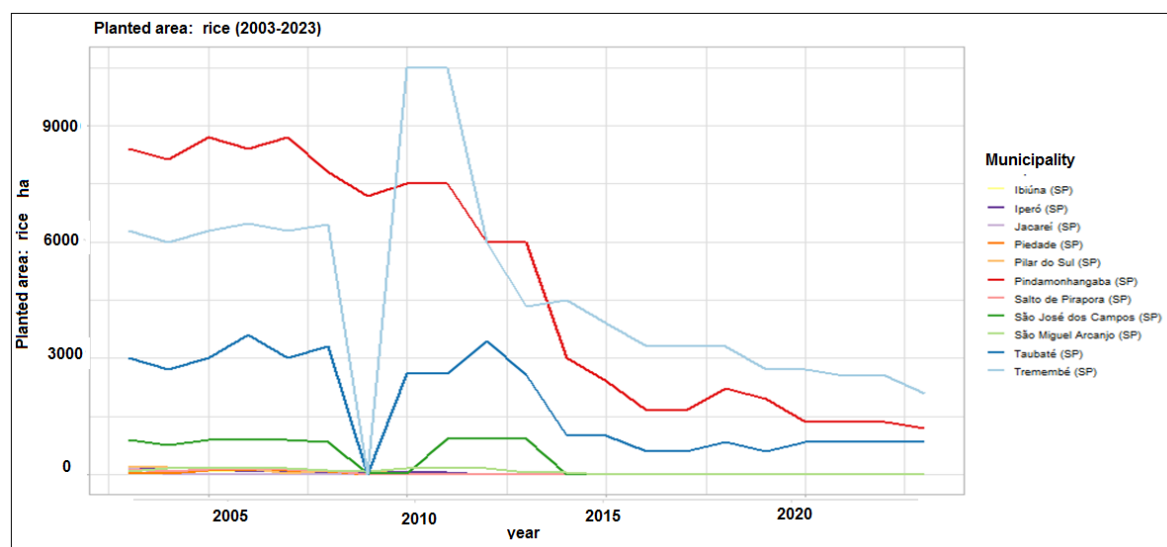
Graph 2 – Area planted with soybeans, in hectares, 2003-2023, within the survey's territorial scope



Source: Bellenzani, 2024. Adapted from IBGE (2023a). Prepared by Leonardo Barbosa da Silva (2024).

It is important to note that the analysis of changes in agricultural production was only conducted for the municipalities and crops mentioned in the interviews, and not systematically. However, in addition to confirming the reported increase in the area planted by commodities within the research's territorial scope, it is significant because it highlights the need for deeper and more comprehensive analyses in the other Metropolitan Regions (MRs) that make up the MMP.

Graph 3 – Area planted with rice, in hectares, 2003-2023, within the survey's territorial scope



Source: Bellenzani, 2024. Adapted from IBGE (2023a). Prepared by Leonardo Barbosa da Silva (2024).

The impacts of agribusiness on water resources have been a source of concern and are well-referenced in the literature (Ioris, 2005; Scantimburgo, 2016). Alongside the impacts resulting from urban expansion, which are well-referenced in the literature (Cruz, 2023; Rasera and Bovo, 2024, Maia and Leonelli, 2024), the trend of replacing food production with commodity crops in rural metropolitan areas can severely threaten the ecosystem services provided by these spaces, whose conservation is fundamental to the climate resilience of metropolises. It is also concerning because, while the implementation of condominiums and subdivisions is subject to environmental licensing, which requires compensatory and mitigating measures, the planting of commodities only requires licensing, even in Environmental Protection Areas (APAs) and in the buffer zones of fully protected conservation areas, for areas larger than 1,000 hectares (São Paulo, 2011), or when native vegetation is removed. This is not the case.

Agribusiness is not regulated by territorial planning instruments; when it does, it only respects the Forest Code. Given favorable soil and relief conditions, once a market exists, it thrives.

Final Considerations

Investigating landscape transformations in the rural metropolitan area through the perceptions of those who live and work in these spaces brought to light a phenomenon still under-explored in research on the rural metropolitan area. The transformations in agriculture, mentioned in interviews, observed in the field, and corroborated by official data, reveal worrying dynamics that require further investigation.

Understanding these dynamics, present even in highly urbanized regions like the MMP, requires viewing these territories as spaces of agricultural production. In the field of territorial planning, where this research is located, insufficient attention has been paid to this dimension, as the prevailing approaches

have prioritized urban expansion over these territories and/or their importance as conservation spaces. Without in any way minimizing the importance of these two dimensions, it is important to note that there are others that require further investigation.

The rural metropolitan area, in addition to being pluriactive, multifunctional, and connected to the urban area, remains and endures as an agricultural one. Considering this aspect, alongside the recognized, pertinent, and necessary importance of rural spaces within the São Paulo Macrometropolis as providers of ecosystem services and environmental resilience, requires attention to the characterization and qualification of agricultural activity and its spatial-temporal transformations. If the current scenario continues, they will strongly impact agrifood systems and water security, not to mention the social impacts. This article, far from advancing the characterization of these dynamics, is intended to be a provocation.

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