

ARTICLE

Geographies of the reenterization of agri-food production networks: some reflections from Brazil

revista

Geo 
USP
espaço e tempo

ISSN 2179-0892

Volume 28 • n° 2 (2024)

e212769

Iñigo Arrazola Aranzabal¹ 

¹Universidade Federal da Bahia, Salvador, BA, Brasil

E-mail: inigo.azzola@gmail.com

How to cite this article: ARRAZOLA, I. Geographies of the reenterization of agri-food production networks: some reflections from Brazil. **Geosp**, v. 28, n. 2, e212769. 2024. <https://doi.org/10.11606/issn.2179-0892.geosp.2024.212769en>



This is an Open Access article distributed under the terms of the Creative Commons Attribution license (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Geographies of the renterization of agri-food production networks: some reflections from Brazil

ABSTRACT

In this article, I argue for the necessity of considering rent consolidation processes in agrifood relationships, which are founded on the establishment of agribusiness network-territories. To this end, I examine the rent capture strategies of this sector in Chapada Diamantina, Bahia, Brazil. I demonstrate how these corporate strategies are based on: 1) controlling key spatial resources; 2) integrating agricultural expansion spaces into the territorial networks of the companies to capture the produced value in the form of rent. For this purpose, I draw on recent conceptualizations of rentierism in contemporary processes of capitalist restructuring that prioritize the analysis of the establishment of differentiated property regimes. Likewise, I draw inspiration from Brazilian critical geography studies that highlight the diverse spatial and institutional structures upon which the sector's methods of rent extraction have evolved over time. The text contributes to understanding how enterprises multiply their positions to control the circulation of value along agrifood production networks. **Keywords:** Agribusiness. Rentism. Brazil. Networks. Territory.

Geografías del rentismo en las relaciones agroalimentarias, algunas reflexiones desde la Chapada Diamantina, Bahía

RESUMEN

En este artículo defiendo la necesidad de dar cuenta de los procesos de consolidación del rentismo en las relaciones agroalimentarias a partir de la formación de territorios-red del agronegocio. Para ello, examino las estrategias de captura de renta por parte de este sector en la Chapada Diamantina, Bahía, Brasil. Muestro cómo éstas se fundamentan en el dominio de recursos espaciales clave y en la integración de los espacios de expansión agrícola en las redes territoriales de las empresas a través de las cuales el valor producido es capturado en forma de renta. Me inspiro para este propósito en: 1) las conceptualizaciones recientes sobre el rentismo en los procesos contemporáneos de reestructuración del capitalismo que otorgan prioridad analítica al establecimiento de regímenes diferenciados de propiedad; 2) los trabajos de la geografía crítica brasileña que señalan la variedad de formas espaciales e institucionales sobre las que se han construido las formas de extracción de renta del sector a lo largo del tiempo. De esta manera, el texto contribuye al entendimiento de la multiplicación de las posiciones desde las que las empresas ejercen control sobre la circulación de valor a lo largo de las redes de producción agroalimentarias.

Palabras clave: Agronegocio. Rentismo. Brasil. Redes, Territorio.

Geografias do rentismo nas relações agroalimentares, algumas reflexões a partir da Chapada Diamantina

RESUMO

Neste artigo, defendo a necessidade de dar conta dos processos de consolidação do rentismo nas relações agroalimentares mediante a formação de territórios-rede do agronegócio. Para isso, examino as estratégias de captura da renda por parte do setor na Chapada Diamantina, Bahia, Brasil. Estas estratégias se fundamentam no domínio de recursos espaciais chave e na integração dos espaços de expansão da agricultura corporativa nas

ARRAZOLA, I.

redes territoriais das companhias através das quais o valor produzido é capturado na forma de renda. Inspiro-me para isto em: 1) as conceitualizações recentes sobre o rentismo dos processos atuais de reestruturação do capitalismo que dão destaque ao estabelecimento de regimes diferenciados de propriedade; 2) os trabalhos da geografia crítica brasileira que sinalam a variedade de formas espaciais e institucionais construídas para a extração de renda do setor ao longo do tempo. Desta maneira, o texto contribui ao entendimento da multiplicação das posições a partir das quais as empresas exercem controle sobre a circulação de valor nas redes de produção.

Palavras-chave: Agronegócio. Rentismo. Brasil. Redes. Território.

INTRODUCTION

In this article, I analyze the rent capture strategies employed by capitalist agriculture in the Brazilian countryside through the formation of networked territories. Although the appropriation of land rent has long been discussed as an essential aspect of historical accumulation modes in this country (Martins, 1986; Andrade, 2022; Delgado, 2012), the expansion and intensification of agribusiness during the last decades has recently been conceived in part of the literature based on the consolidation of rent-seeking in agri-food relations (Kay; Vergara-Camus, 2018; Arboleda; Purcell, 2022). This rentierism is understood as the methods used to capture value based on ownership rights, extending beyond land ownership and distributed throughout production and distribution chains. Likewise, the increasing capture of this rent has been considered a driver for the rise in labor productivity in capitalist agriculture. However, it also leads to displacements, impoverishment of the population, phagocytosis, and increased toxicity of ecosystems (Araghi, 2009; Moore, 2020).

I understand the deployment of corporate rentier strategies as processes of spatial reconfiguration. In this text, I explore two primary geographical dimensions of the reconfiguration driven by the expansion of agribusiness in Chapada Diamantina, situated in the heart of the State of Bahia, Brazil. Thus, I analyze the attempts of rent capture by companies in the region as processes that involve, among other aspects: 1) the fragmentation of space and selective access to resources; 2) the insertion of expansion areas within the spatial networks of agribusiness production consolidated by companies throughout their trajectory. With this spatial analysis of rent-seeking practices conducted by agribusiness, I aim to enhance the comprehension of the increasing significance of rent extraction in agriculture as highlighted in recent literature.

The article is divided as follows: in the next section, we will review the ways in which rent - especially land rent - has been conceptualized over time in political economy until we reach the consolidation of what is known as rentierism in agri-food relations. We will also review the processes through which the state, companies, and large rural producers in the country have established conditions for rent appropriation at various historical moments. Later, in the following section, we will detail the spatial dimensions involved in the rentier strategies of agribusiness in the Chapada Diamantina, the region that inspired this work. We will conclude the text by summarizing the main results and conclusions.

METHODOLOGICAL CONSIDERATIONS

This text is written based on the broader research work developed by the author in his doctoral thesis. During the almost three years that I lived in Chapada, I was able to accompany the populations affected by the expansion of agribusiness companies with the help of the Pastoral Land Commission (CPT), as well as learn first-hand about the ecosystem impacts of their activities. In these pastoral trips, I was able to participate in numerous workshops, interviews and informal conversations with residents and representatives of local communities. Likewise, during this period, I was able to support the environmentalist movements in the Chapada mobilized against the expansion of agribusiness into new highland areas, which allowed me to be present at the hearings with public authorities and with representatives of the companies carried out because of this expansion.

This text is based on the broader research conducted by the author in his doctoral thesis. During the almost three years that I lived in Chapada, I was able to accompany the populations affected by the expansion of agribusiness companies with the help of the Pastoral Land Commission (CPT), as well as learn firsthand about the ecosystem impacts of their activities¹. During these pastoral trips, I had the opportunity to participate in various workshops, interviews, and informal conversations with residents and representatives of local communities. During this period, I supported environmentalist movements in Chapada that mobilized against the expansion of agribusiness into new highland areas. This involvement enabled me to participate in hearings with public authorities and company representatives in response to the expansion.

In addition to the fieldwork conducted during this time, much of the information supporting the analysis in this article comes from the compilation and analysis of various secondary sources. Notably, the data used to examine the unequal spatial distribution of water concessions granted to companies were collected from the State Environmental Information System of Bahia (SEIA). Similarly, information about the ownership links of the companies was obtained using data provided by the Federal Revenue and pre-processed by the Brasil.io project². The reconstruction of business networks from this data was carried out through Social Network Analysis (SNA) techniques. This approach made it possible to identify, topologically characterize, and visualize the components of the agribusiness company networks operating in the region.

Finally, the data presented in this analysis were cross-referenced with information from other studies focused on the expansion of corporate agriculture in other cerrado regions of the country. This literature review was especially crucial for: 1) aligning the proposed analysis with prior research in Brazilian critical geography, underscoring the importance of considering the various spatial dimensions involved in agribusiness expansion; 2) enhancing the understanding of the examined business networks by integrating insights from recent studies on the socioeconomic frameworks utilized by companies to expand in these environments over the last few decades.

¹ The time I spent working as a volunteer within the regional team of the CPT was a profoundly enriching period of learning. Neither this text nor my research work as a whole would have been possible without the support of this organization, for which I will always be deeply grateful.

² The Brasil.io project has a mission to “make Brazilian data of public interest more accessible,” which, due to formatting, dispersion, or size, are not easily usable by citizens (BRASIL.IO, 2020a).

CENTRALITY OF RENT IN AGRIBUSINESS ACCUMULATION STRATEGIES

Rent capture beyond land rent

Classical discussions on the agrarian question position land rent as a parasitic element within accumulation processes. Land rent is associated with the monopoly maintained by landowners, facilitated by private property. The historical role of land rent in the early stages of capitalism is noted by Marx, who shifted its importance from the realm of commercialization - as conceived by Ricardo - to production. In this context, land rent was primarily seen as an obstacle to the complete development of productive forces. It did so by appropriating a portion of the value generated in agriculture, thereby impeding the equalization of returns across various sectors of the economy. Land rent would, therefore, function as a constraint imposed by agriculture on the remaining economic spheres.

This parasitic view of land rent left a profound mark on discussions surrounding the agrarian issue and the land conflicts that unfolded in the second half of the 20th century in Brazil and other Latin American countries. However, from the 1960s onward, theoretical analyses began to emerge that repositioned the role of land rent within the dynamics of accumulation and space production (Swyngedouw, 2012; Paulani, 2016). Land rent thus came to be seen as crucial in capital circulation, playing a decisive role in altering land use and influencing investment decisions in both rural and urban areas. Furthermore, greater emphasis was placed on the role of land rent in coordinating capital flows between various productive sectors and financial capital (Harvey, 2006). Likewise, analyses have highlighted the ideological dimension of rent as a unifying element in social organization and a central component of hegemonic consensuses on hierarchies and social relations (Swyngedouw, 2012).

The increasing significance of capturing rent has led to numerous studies highlighting the role of rentier practices in restructuring the world order in recent decades. In general terms, we can perceive rent capture as the extraction of extraordinary benefits stemming from a position of monopolistic control within the capital circuit (Ioris, 2018; Arboleda; Purcell, 2021). These practices have been identified as fundamental to the recent dynamics of capital fixation and mobility, which produce uneven geographical development and its associated conflicts. By analyzing how the configuration of different ownership regimes establishes differentiated opportunities for rent extraction within value circulation processes, these analyses have broadened the concept of rent beyond fixed assets such as land. In this framework, the establishment of these ownership regimes “acts as barriers and prerequisites for the revitalization and implementation of capital accumulation circuits” (Arboleda & Purcell, 2021, p. 16).

In the domain of agriculture, these dynamics have resulted in the consolidation of rentier practices within contemporary agri-food relations (Arboleda & Purcell, 2022). The recent restructuring of agribusiness has been characterized by the proliferation of positions from which the most influential actors can extract rent. Control over strategic assets such as seeds, water, machinery, digital platforms, and logistics networks is essential for understanding the rise of rentier practices within agri-food production and distribution networks. This issue is closely associated with many of the socio-environmental conflicts that arise from capital expansion in rural areas. The rentierization of agri-food production

relationships thus entails the development of new institutional ownership regimes capable of generating wealth and extracting rent beyond mechanisms based solely on market-driven value circulation (Arboleda; Purcell, 2021).

Historical transformations of institutional arrangements for rent capture in Brazil

The Brazilian case may serve as a paradigmatic example to illustrate the explanatory significance of rent appropriation strategies. The methods of rent appropriation have evolved over time, leading to the emergence of diverse institutional configurations. José de Souza Martins is widely recognized as one of the leading scholars for his work on this issue. This author links the end of monopolistic control over the labor force following the abolition of slavery with the establishment of private property in the country when explaining the initial conditions that facilitated the subjection of land rent (Martins, 1986). This is fundamental in understanding Brazilian agrarian conflict for Martins since, unlike European countries, in Brazil peasants do not fight to remain on the land but to enter it (Martins, 1995). This understanding leads him to conceptualize the conflicts of the latter half of the 20th century as disputes between “working land,” referring to landless peasants seeking access to land, and “business land,” alluding to companies interested in capturing land rent.

However, for Martins, the Brazilian agrarian question was definitively closed in its classical formulation – the issue of land rent capture as an obstacle to capitalist development – with the arrival of the military dictatorship in 1964. Over the two decades of the regime’s rule, conditions were established to solidify the alliance between the landowning class and the capitalist class (Martins, 1985). The expansion of the agricultural frontier into the states of the Amazon and the central west was paradigmatic in this regard. Companies and large producers relocating to these areas employed strategies focused on acquiring subsidies and public credits offered by the state. These mechanisms enabled the consolidation of large-scale capitalist agriculture in these areas and constituted, to a significantly greater extent than the profits of productive activities themselves, the main source of benefits (Ioris, 2018). Thus, the extraction of land rent must be understood as a product contested within networks of relationships and political processes with a significant class character. Within these networks, certain groups successfully guide and establish institutional arrangements that create favorable conditions for land rent subjection (Ioris, 2018).

In the eastern region of the Chapada Diamantina, where we conducted the research that underpins this article, these rentier appropriation mechanisms operated during the second half of the 20th century. The policies implemented in the 1970s to attract investors and companies created conditions for the appreciation of land rent. The loans provided for land acquisition in northeastern Brazil were funded by the World Bank with the aim of fostering agricultural modernization. Henry Henfrey, a British anthropologist who traveled throughout the region alongside the CPT and rural unions during that time, analyzed the impact of these policies, which ultimately favored land concentration and the expulsion of landless workers. The author investigated the class character of land rent capture processes in the region, which were initiated by selectively implemented measures. These measures are a consequence of the influence and control exerted over the state by landowning and business elites at various levels: federally, within the Ministry of Agriculture, and at state

and municipal levels within the military police and judiciary. These dynamics led to the withholding of resources meant for the modernization of small producers, while speculators were able to obtain significant loans from the World Bank for land acquisition (Henfrey, 1989, p. 15).

During the 1960s and 1980s, the mechanisms for capturing land rent positioned the State as a facilitating actor and a central strategic arena. Following the debt crisis and hyperinflation of the early 1990s, the resurgence experienced by capitalist agriculture since the second half of that decade required renewed foundations. This period marked the beginning of what Delgado refers to as the new political economy pact for agribusiness, characterized by a “specific capital accumulation project for which rent capture is essential” (Delgado, 2012, p. 109). The ongoing reconfiguration of the foundations through which the now-called agribusiness ensures rent appropriation involves its expansion into other agricultural frontier areas in the Brazilian cerrados, with the leading role played by national and international companies distributed along production networks. These revised foundations are essential for understanding the current dynamics of rent capture within the agribusiness sector. Throughout this ongoing process, the state’s facilitating role, while still fundamental, has become less prominent compared to previous eras. Haesbaert (1997) confirms this shift in his analysis of agribusiness modernization and expansion in the northeastern cerrados.

Rentier involves around companies have significant greater over in the circulation of generated produced agriculture, even if they do not necessarily own large amounts of land. agriculture. In this sense, the role of major global trading companies established in the cerrados becomes prominent as they concentrate grain storage and displace, at least in relative terms, traditional credit mechanisms in their areas of influence, including subsidized credit by the State (Frederico, 2013). Nevertheless, the reactivation of subsidized credits through the National Rural Credit System remains essential, despite the emergence of other mechanisms involving the participation of holdings, investment funds, and bond issuance (Clapp, 2014; Frederico; Buhler, 2015). Moreover, large agricultural companies are actively involved not only in commodity production but also in land revaluation processes, enabling them to achieve extraordinary profits through land trading (Fernandes; Frederico; Pereira, 2019).

STRATEGIES FOR CAPTURING RENT BY AGRIBUSINESS BASED ON THE FORMATION OF NETWORKED TERRITORIES IN CHAPADA DIAMANTINA, BAHIA

The reproduction of rentier practices by agribusiness over time involves processes of socio-spatial reorganization. Many studies focused on this geographical perspective have emphasized the territorial dimension of rent capture dynamics by agribusiness (Cavalcante; Fernandes, 2008; Teixeira, 2016; Fernandes; Frederico; Pereira, 2019; Cavalcante, 2020). On the other hand, many studies also document the spatial forms through which these communities organize to reclaim their living spaces and resist the encroachments of companies (Welch, 2005; Roos, 2016; Schneider; Niederle, 2010; Mondardo; Nunes, 2019). These analyses challenge the singular legitimacy of territory as a governance space, leading to the emergence of multi-territorial spaces where the modes of spatial organization and

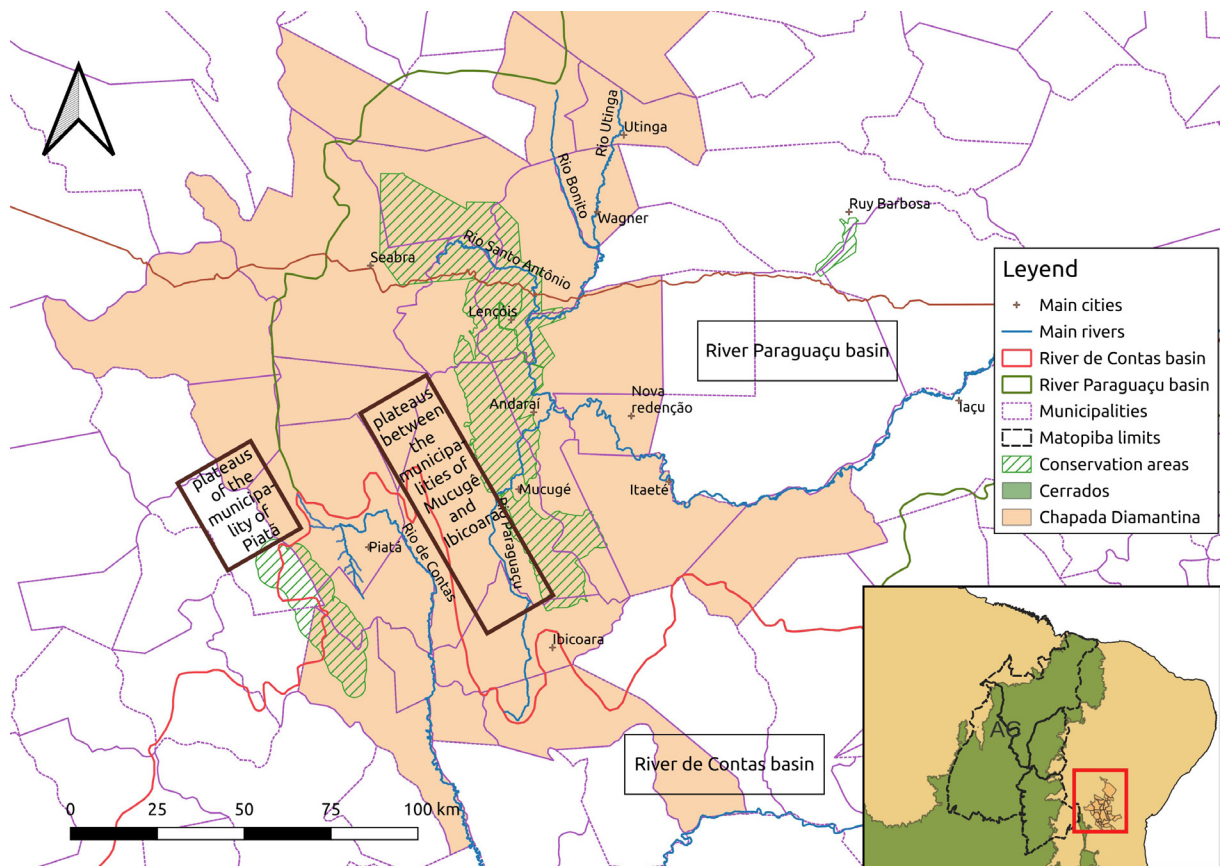
occupation imposed from above by the State or companies come into friction with the exercise of other territorialities striving for recognition (Fernandes, Frederico, & Pereira, 2019).

However, the studies mentioned, overly focused on this territorial dimension, struggle to demonstrate how rentier processes of value capture operate within the circuits of capital, connecting the spaces of agribusiness expansion with other areas through which captured value circulates. In this sense, several authors have argued for the need to adopt multidimensional geographic analyses to account for the complexity and contradictions of socio-economic restructuring processes (Jessop; Brenner; Jones, 2008). Indeed, the processes of installation of agricultural companies from the southern region of the country during the 1980s have already been examined by Brazilian critical geography from this dual geographical dimension (Haesbaert, 1997). To understand the processes of de/re-territorialization caused by the arrival of corporate agriculture to the large plateaus of western Bahia, Haesbaert analyzed the territorial and network dimensions involved in the dynamics of appropriation, differentiation, and exclusion experienced by both southern entrepreneurs and migrant rural workers, as well as by the northeastern native population. Drawing on both dimensions, the author was able to analyze the reconfiguration of identity and lived space experienced by these subjects during the period of consolidation of large-scale capitalist agriculture in the region. This geographical analysis expanded the understanding of the diverse forms of insertion encountered by them within a context marked by inequality and confrontation with difference.

Works like the one mentioned above are fundamental, not only as a source of inspiration but also to mark historical continuity with the literature produced in Brazil when proposing extensions, in this case, to the paths of geographic analysis on forms of rentier appropriation by agribusiness. The territorial and network dimensions examined below for the expansion of the sector in Chapada Diamantina thus serve as support to understand the spatiality of the circulation of value produced by capitalist agriculture and the rentier capture strategies carried out by companies.

The process of occupation of Chapada Diamantina by agribusiness can be considered an extension of the general dynamics of agricultural frontier expansion into the cerrado region of northeastern Brazil. Large agribusiness producers began arriving in the region from the 1980s, mostly from states in the south and southwest of the country. The companies initially settled in the plateau area between the municipalities of Mucugê and Ibicoara, although they later expanded to other areas (see Map 1). As in other cerrado areas, the impacts caused by agribusiness in the region include the expulsion of populations and water depletion, also affecting the water supply of cities located under their areas of influence (Mucugê Miranda, 2012; Repórter Brasil, 2019).

To fully grasp this concept of networked-territorial production that underpins the rentier capture of agribusiness, it is essential to delve into the strategies employed by companies. For this purpose, I view companies as carriers of broader corporate networks through which they deploy their land rent capture strategies. These corporate networks integrate Chapada as part of a networked set of territories through which produced value is captured in the form of rent. The chosen mode of exposition and analysis consists of two moments. Initially, I pinpoint the primary irrigators within the Mucugê-Ibicoara plateau region, known for its significant concentration of large-scale corporate agriculture. For this purpose, I examine the available information on water concessions by the environmental agency of



Map 1 – Location of the main agribusiness areas in Chapada Diamantina. Author's elaboration.

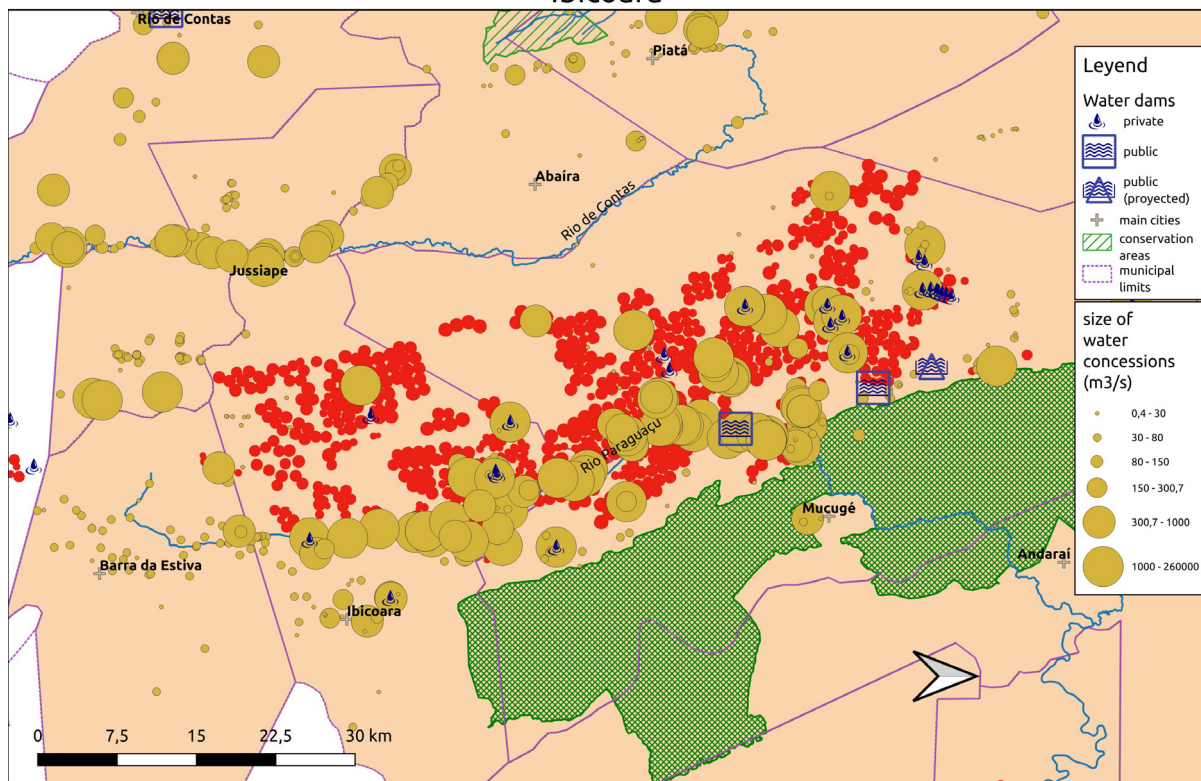
the State of Bahia, INEMA. The uneven spatial distribution of these concessions in favor of large-scale agriculture underscores the localized nature of land rent. Its appropriation is determined by the interplay of institutional mechanisms and power dynamics that dictate access to water sources. As will also be exposed, this leads companies to play an active role in influencing decisive areas of the State essential for the construction of the necessary water infrastructure to expand their activities.

With the information obtained in this initial part of the analysis, it is possible to move towards the second moment, consisting of the reconstruction of corporate networks. The data on water concessions allow me to locate the major irrigators in the Mucugê and Ibicoara plateaus, which represent the epicenter of corporate agriculture concentration. Thus, using data from the shareholding matrix of Brazilian companies made available by the Federal Revenue, it is possible to trace the set of companies and partners that make up the networks of the companies operating on Chapada.

I start, therefore, with the first step. Map 2 illustrates the location of concessions processed by INEMA to corporations between 2012 and 2021, according to the size of the granted capture. It can be observed that those with the highest water uptake tend to concentrate in plateau areas near water surfaces. However, in recent years, large concessions have also been issued for water capture through underground wells³.

³ It is important to mention that the information of water concession showed in the maps is useful only as a proxy of the inequalities in the access of this resource. However, it does not provide us a full image of these inequalities given the lack of data, an aspect denounced repeatedly by activists and public servants.

Water concessions distribution according to their size - plateaus of Mucugê and Ibicoara



Map 2 - Distribution of water concessions according to the size of the concession.

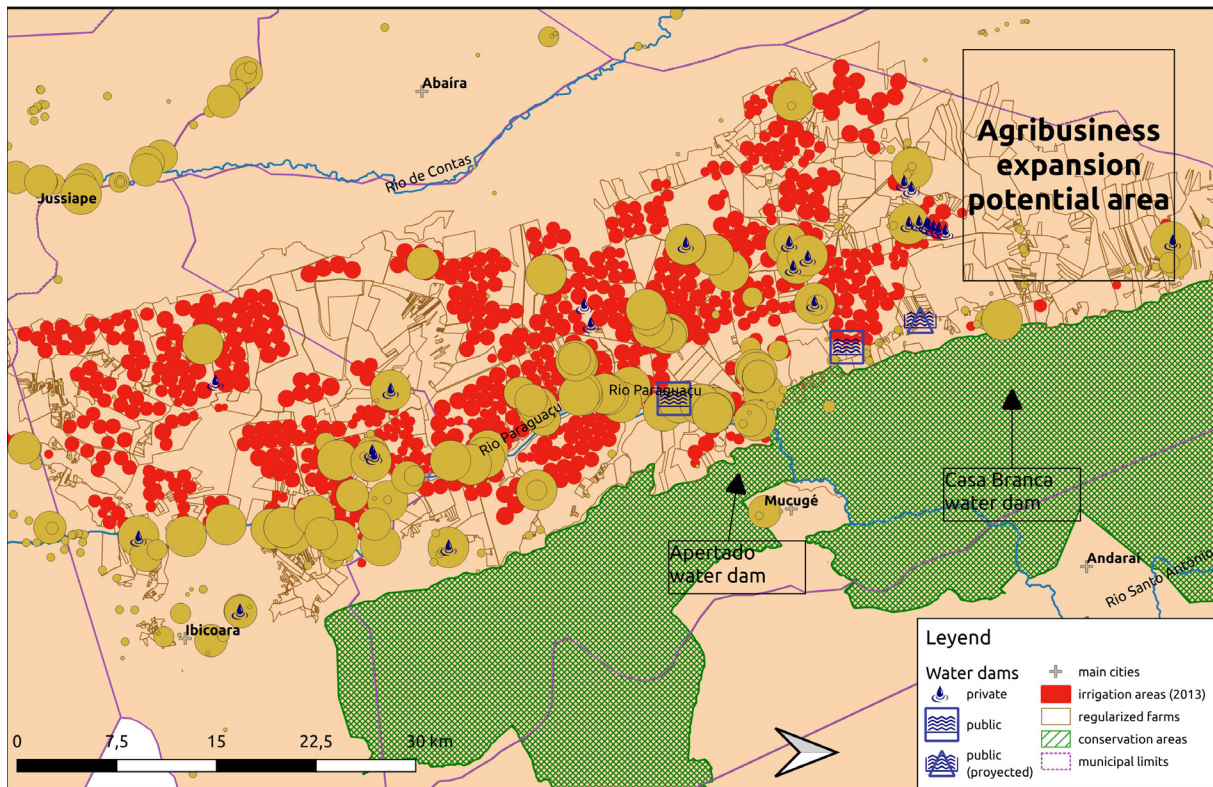
Source: INEMA (2021). Author's elaboration.

The spatial distribution of these permits provides an approximation of the locational aspect of land rent: it's no coincidence that areas of central ecosystemic recharge are where corporate captures are most concentrated. However, the appreciation of these areas cannot be understood without considering the role played by the implementation of certain strategic water infrastructure, such as the Apertado dam. Since the inauguration of this dam in 1998, the total irrigated area in the plateaus of Mucugê and Ibicoara has grown rapidly, surpassing 40,000 hectares in 2014 according to data from the National Water Agency (ANA). Currently, the expansion of agribusiness in this space continues to be carried out through new dams made through public-private partnerships, such as the Casa Branca dam. The construction of this infrastructure has caused tensions within the Bahian government itself, whose environment secretary publicly questioned the need to use state resources for projects that exclusively benefit agricultural entrepreneurs (Bahia, 2021).

As shown in Map 3, the foreseeable future occupation of the remaining plateau areas—currently predominated by small family farmers—by agribusiness will lead to the sector forming a barrier around the boundaries of the Chapada Diamantina National Park, a matter of concern for federal authorities overseeing this protected area⁴. The territorial dimension of land rent capture has to do not so much with the natural suitability of certain spaces, but with the socio-spatial processes through which they become appropriable for agribusiness companies.

⁴ In fact, these concerns can be observed in the management plan of the park.

Agribusiness expansion in the plateaus of Mucugê and Ibicoara



Map 3 – Current expansion of agribusiness in the plateaus of Mucugê and Ibicoara through strategic water infrastructure.

Source: INEMA (2021). Author's elaboration.

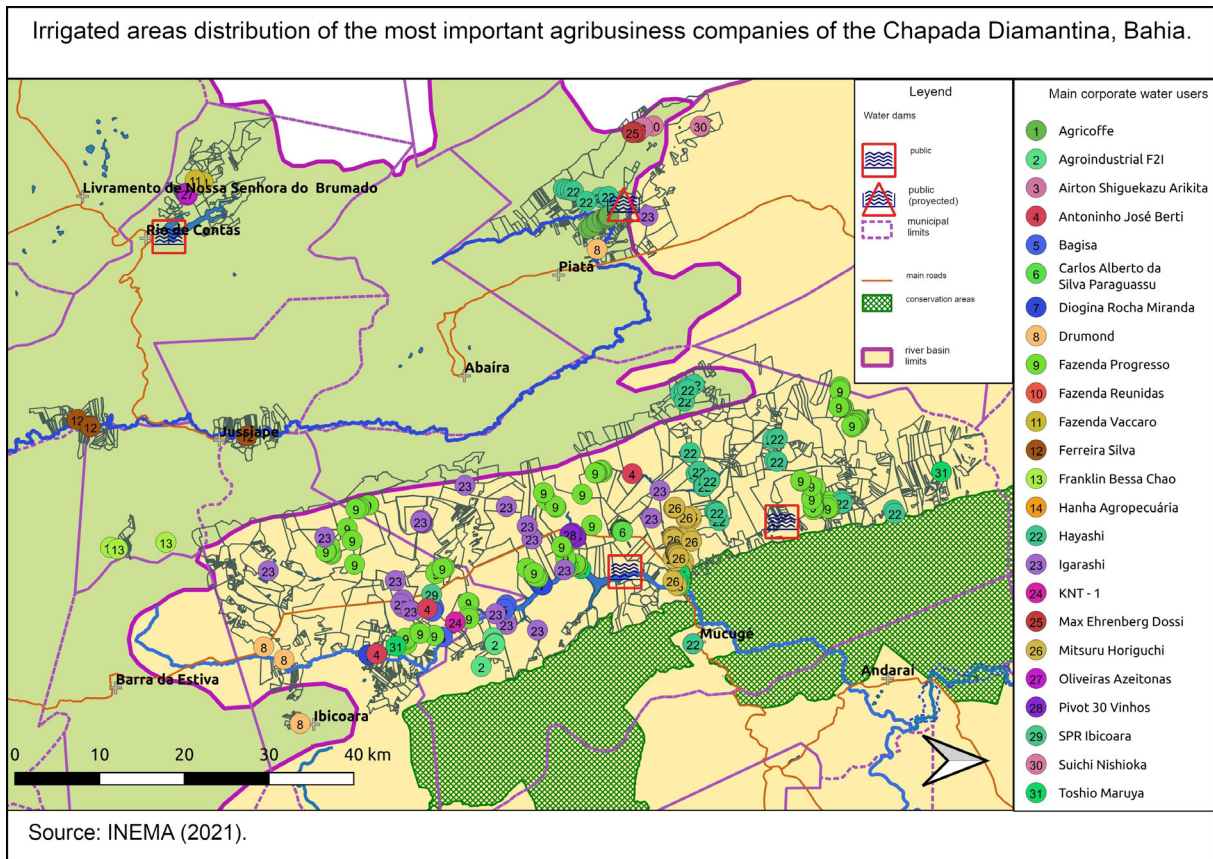
Map 4 is useful for transitioning to the second moment of the analysis. It shows the areas of operation in the Chapada plateaus of the main companies according to the amount of water used. As I have previously indicated, the identified companies occupy this space as nodes belonging to broader corporate networks, of which they are carriers.

The first step in forming these networks consisted of the iterative tracing of data from the corporate matrix made available by the Federal Revenue. The input parameters of the first iteration of the search algorithm built for this purpose were the companies selected in Map 4, yielding their related companies and ownership links as output. Each subsequent iteration searched for companies and partners associated with the new nodes registered in the previous step. Once the corporate networks were obtained through this procedure⁵, it was possible to identify and visualize their main components using ARS techniques⁶.

For reasons of focus and length, I will limit the exposition to the corporate network of one of the most representative companies in the sector, whose relevance was corroborated during fieldwork. Figure 1 depicts the business network associated with the Fazenda

⁵ Despite the limitations inherent in reconstructing these networks exclusively from ownership relationships, this method of analysis provides a valuable insight into the rentier strategies deployed by companies. For a deeper understanding of the methodological aspects involved, refer to (Heemskerck et al., 2018).

⁶ These analyses mainly consisted of page-rank centrality analysis to obtain a rough idea of the nodes' importance in the network. Additionally, a Force Atlas 2 visualization algorithm was applied using Gephi software. The main advantage of this algorithm is to separate densely connected nodes from each other (Nooy, 2003).



Map 4 – Distribution of water concessions according to the main companies.
Source: INEMA (2021). Author's elaboration.

Progresso corporation. Nodes are colored by type (companies or individuals) and sector of activity, while links express ownership relations.

The company from which I start for the reconstruction of the network appears in node one. While the dark blue nodes represent individuals, the remaining nodes are colored according to the primary sector of activity of each company. Family ties predominate in the exposed corporate network. The arrival of these types of companies in Chapada was noted by Haesbaert (1997) in his study on the occupation of the northeastern cerrados by southern producers. Family ties are crucial in strategic activities such as marketing and financing. When analyzing the accumulation strategies of these companies, Frederico and Buhler (2015) highlight their patrimonialist character. The geographical dispersion of their properties would be a reflection “of the migratory trajectory of the owning families”, for whom investment in fixed assets would be a central aspect in their reproduction strategies (Frederico; Buhler, 2015, p. 214).

Analyzing the data from the corporate network exposed in Figure 1, certain elements can be observed that indeed highlight the importance of the patrimonialist character mentioned in the previous quote. The network associated with Fazenda Progresso is dominated by links between the Borre (nodes 42, 44, 46, 48, 57, 160, 163) and Ruwer (42, 66, and 160) families. It is also possible to distinguish other companies directly related to the real estate and construction sector (nodes 119, 268, 460, 962). Links with these types of highly rent-seeking sectors are also part of the networked business deployment through which

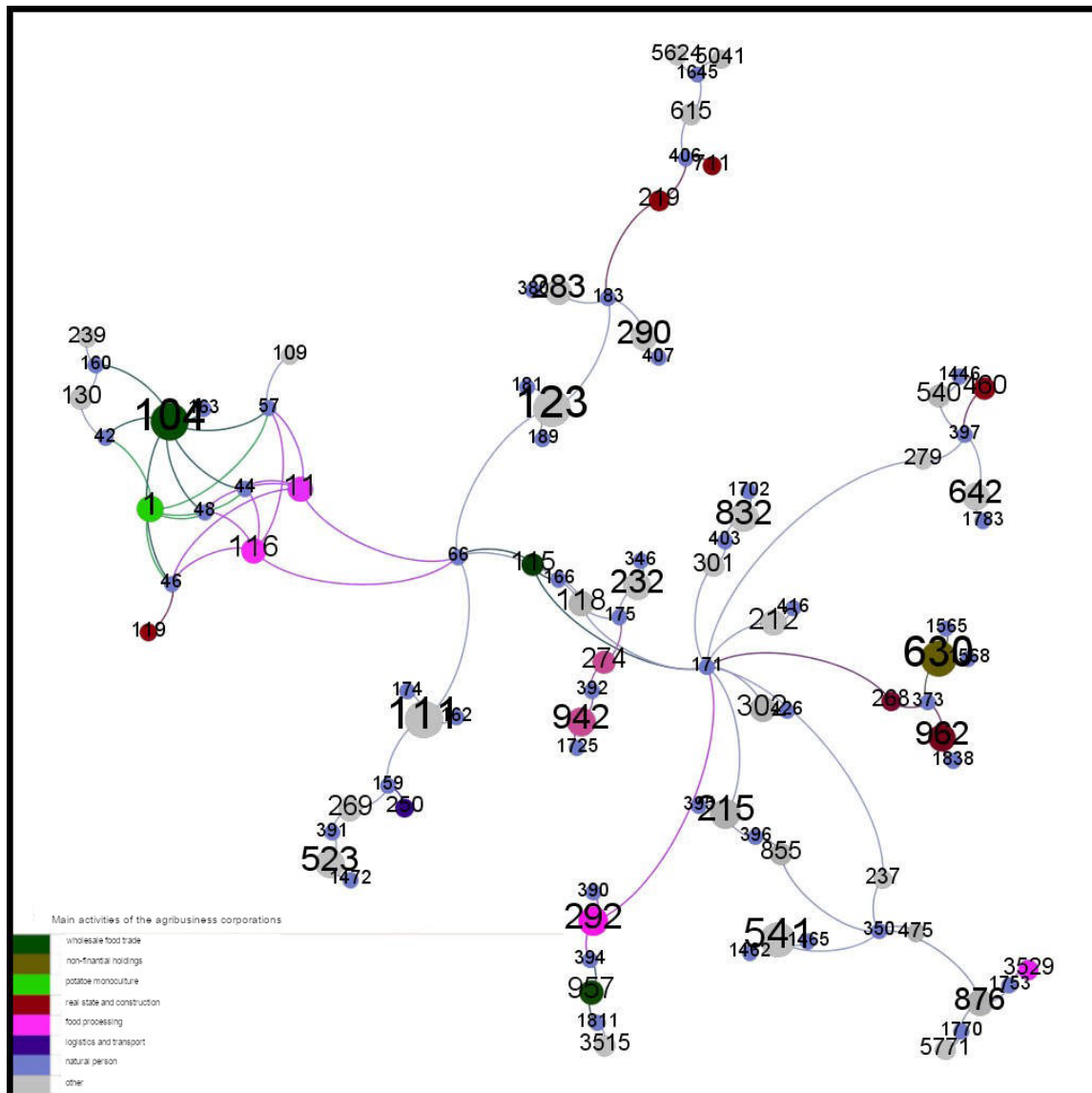


Figure 1 – Corporate network associated with Fazenda Progresso.
Source: Brasil.io (2020b). Author's elaboration.

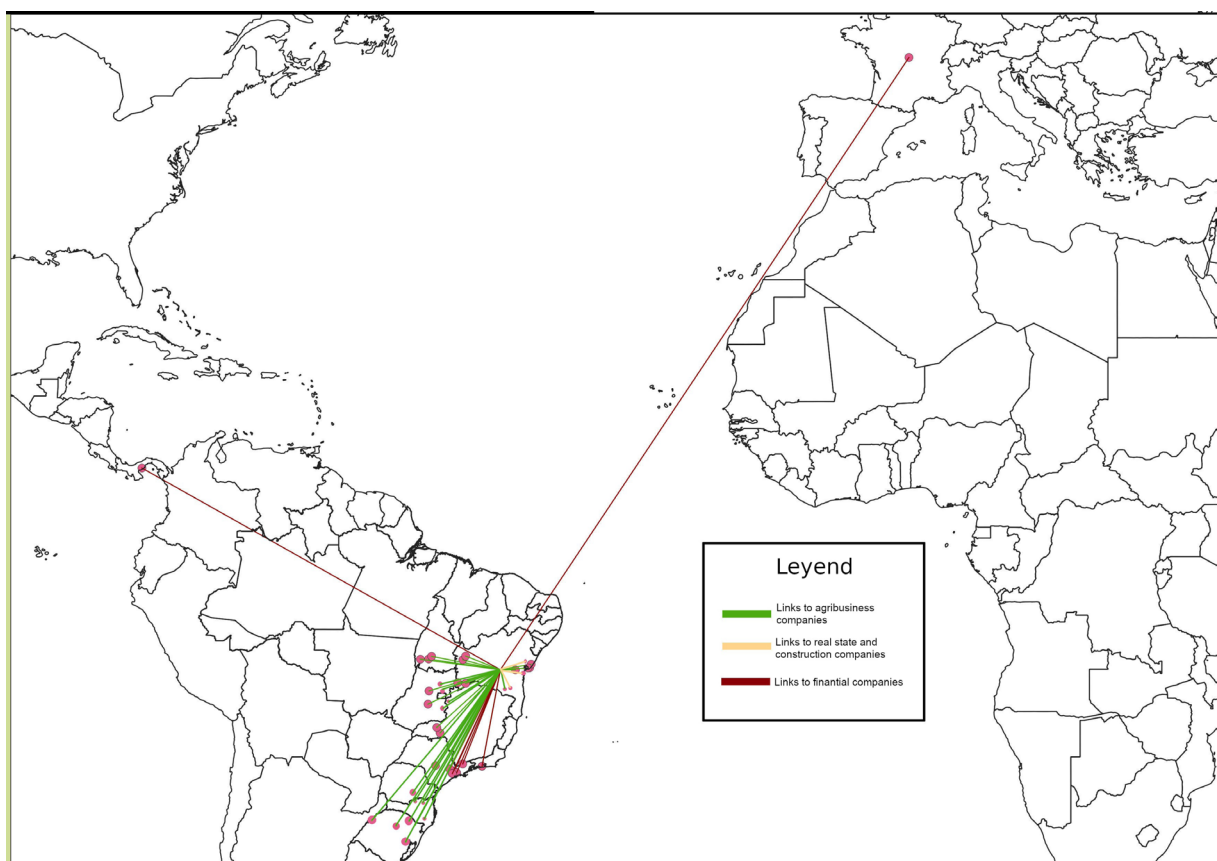
agribusiness seeks to maximize land rent capture. This assertion finds support in various studies that investigate the links between agribusiness expansion and the emergence of new urban spaces (Elias; Pequeno, 2007; Elias, 2011; Frederico, 2012; Fioravanti, 2019).

However, company strategies do not only involve diversification into other sectors related to land buying and selling. As mentioned earlier, rent capture in the times of the new political economy pact of agribusiness is made possible by occupying strategic control positions in the markets by companies. In the network of Figure 1, the presence of companies linked to wholesale food trade (nodes 104, 115, and 957), food processing and agribusiness (nodes 11, 116, 274, 942, 292), and land freight transport (node 250) is shown.

Although it would be necessary to delve deeper into these corporations to fully understand their role within agri-food production networks, their mere presence within the analyzed corporate network indicates that occupying strategic positions plays a central role in corporate rent-seeking strategies. A deeper analysis of these corporations would

shed light on their contributions to the dynamics of agri-food production networks and the strategic importance of their positions.

Corporate networks such as the one analyzed offer an entry point to understand the construction of the Chapada as a networked territory. Each node of the corporate networks located in strategic positions, as mentioned for the previously examined network, is in a Brazilian municipality (or foreign country in the case of some banks or investment funds). By mapping these spaces for several of the main agribusiness companies operating in the region, a more approximate picture is obtained of how the Chapada Diamantina is inserted into these network territories. Map 5 illustrates the connections of the spaces that make up the networks of the companies Fazenda Progresso, Lavoura Igarashi, and Agricoffe, all identified in Map 4 as major irrigators. From this map, several readings of the set of network territories integrated into the Chapada become viable. Firstly, links with other agricultural production areas—indicated by green lines—depict the movements of the companies themselves in their historical expansion towards agricultural frontier zones.



Map 5 – Integration of the Chapada Diamantina as a networked territory through the activities of some of the main companies operating in the region.

Source: Brasil.io (2020b). Author's elaboration.

Subsequently, several of the companies' links with the construction sector point towards medium and large cities—indicated by cream-colored lines. This would seem

to reinforce the conclusions of the literature on how agribusiness surpluses are also reinvested in urban space production. Finally, there are also financial links—red-colored lines—for some of the companies operating in the Chapada that integrate the region with other international spaces such as Panama or France. It is worth mentioning that this type of link exists only for a small part of the companies with a presence in the Chapada, unlike what may occur in other areas where agribusiness operates on a larger scale, such as Western Bahia. However, this map serves as a tool to understand the reticular ways in which the value produced by agribusiness circulates through the various highlighted spaces, which would function as anchoring points in the expansion of corporate rent-seeking practices.

CONCLUSIONS

In this article, I have analyzed rent capture strategies by agribusiness as socio-spatial processes centered on the construction of network territories. To accomplish this, I drew from recent literature on capital restructuring processes in rural areas, highlighting the role of extending new property regimes beyond land in shaping accumulation dynamics. The establishment of these regimes multiplies the positions from which companies can exert monopolistic control over the circulation of value along agribusiness production networks.

In the article, I show that this circulation unfolds across a set of network territories that serve as anchors in corporate rent capture attempts. To achieve this goal, the initial focus was on highlighting the role of companies in implementing the necessary institutional arrangements to render certain spaces appropriable. These arrangements include ensuring access to fundamental resources such as water, through the construction of strategic water infrastructure with state support. Subsequently, companies were examined as carriers of broader corporate networks, through which they deploy their rent-seeking practices.

Through the analysis of these networks, I demonstrated how companies operating in the Chapada are connected to other enterprises holding strategic positions within various segments of the agribusiness production networks, such as transportation or wholesale food trade. Similarly, it was observed that companies are connected to other highly rent-seeking sectors, such as real estate management and construction. Thus, if companies deploy this set of networks to optimize their rent capture strategies, these networks also integrate the Chapada Diamantina into a larger set of network territories. Finally, it was shown how the links connecting the Chapada to these other spaces reflect: 1) historical capital movements towards various areas of Brazilian agricultural frontier expansion; 2) capital flows accumulated by the sector directed towards urban space production; and 3) the connection of the Chapada with banks and investment funds based in other international locations.

This spatial analysis, which focuses on circulation, complements the pathways outlined to understand how corporations, beyond their direct control over land, appropriate the value produced in the form of rent. These pathways also draw from prior works in Brazilian critical geography and as demonstrated throughout the text, highlight the diversification of agribusiness practices into other economic sectors. Understanding the

complexity of these practices is crucial for devising strategies to mitigate the detrimental effects of agribusiness expansion, an inherently rent-seeking process, on populations and ecosystems.

REFERENCES

- ANDRADE, D. Neoliberal extractivism: Brazil in the twenty-first century. **The Journal of Peasant Studies**, London, v. 49, n. 4, p. 793-816, 2022. DOI: <http://doi.org/10.1080/03066150.2022.2030314>.
- ARAGHI, F. Accumulation by displacement: global enclosures, food crisis, and the ecological contradictions of capitalism. **Review - Fernand Braudel Center**, Birmingham, v. 32, n. 1, p. 113-146, 2009.
- ARBOLEDA, M.; PURCELL, T. F. The rentierization of food: regimes of property and the making of Chile's globalized agriculture. **The Journal of Peasant Studies**, London, v. 50, n. 5, p. 1924-1944, 2022. <https://doi.org/10.1080/03066150.2022.2082962>.
- ARBOLEDA, M.; PURCELL, T. F. The turbulent circulation of rent: towards a political economy of property and ownership in supply chain capitalism. **Antipode**, Worcester, v. 53, n. 6, p. 1599-1618, 2021. DOI: <http://doi.org/10.1111/anti.12737>.
- BAHIA. SECRETARIA DO MEIO AMBIENTE. **Declaraciones del Secretario de Ambiente del ejecutivo de Bahía en reunión con parlamentarios del Frente Ambiental de Bahía**. Salvador: SEMA, 2021.
- BRASIL.IO. **Cadastro Nacional da Pessoa Jurídica**, 2020b. Available from: <https://brasil.io/datasets/>. Access in: 13 Mar 2024.
- BRASIL.IO. **O Brasil em dados libertos**. Repositório de dados públicos disponibilizados em formato acessível, 2020a. Available from: <https://brasil.io/home/>. Access in: 13 Mar 2024.
- CAVALCANTE, L. A territorialidade do capital no campo: agronegócio e uso corporativo do território no Ceará. **Revista NERA**, Presidente Prudente, v. 23, n. 53, p. 22-46, 2020. DOI: <http://doi.org/10.47946/rnera.v0i53.6016>.
- CAVALCANTE, M.; FERNANDES, B. M. Territorialização do agronegócio e concentração fundiária. **Revista NERA**, Presidente Prudente, n. 13, p. 16-25, 2008. DOI: <https://doi.org/10.47946/rnera.v0i13.1387>.
- CLAPP, J. Financialization, distance and global food politics. **The Journal of Peasant Studies**, London, v. 41, n. 5, p. 797-814, 2014. <https://doi.org/10.1080/03066150.2013.875536>.
- DELGADO, G. C. **Do capital financeiro na agricultura à economia do agronegócio: mudanças cíclicas em meio século (1965-2012)**. Porto Alegre: UFRGS Editora, 2012.
- ELIAS, D. Agronegócio e novas regionalizações no Brasil. **Revista Brasileira de Estudos Urbanos e Regionais**, Recife, v. 13, n. 2, p. 153, 2011. DOI: <http://doi.org/10.22296/2317-1529.2011v13n2p153>.
- ELIAS, D.; PEQUENO, R. Desigualdades socioespaciais nas cidades do agronegócio. **Revista Brasileira de Estudos Urbanos e Regionais**, Recife, v. 9, n. 1, p. 25, 2007. DOI: <http://doi.org/10.22296/2317-1529.2007v9n1p25>.
- FERNANDES, B. M.; FREDERICO, S.; PEREIRA, L. I. Acumulação pela renda da terra e disputas territoriais na fronteira agrícola brasileira. **Revista NERA**, Presidente Prudente, v. 22, n. 47, p. 173-201, 2019.
- FIORAVANTI, L. Injerencias en los procesos espaciales en ciudades brasileñas dinamizadas por el agronegocio: el caso de Primavera do Leste. **POLIS [en línea]. Revista Lationamericana**, Santiago, n. 53, p. 1-19, 2019. Available from: <http://journals.openedition.org/polis/17686>.
- FREDERICO, S. As cidades do agronegócio na fronteira agrícola moderna brasileira. **Caderno Prudentino de Geografia**, Presidente Prudente, v. 1, n. 33, p. 5-23, 2012. Available from: <https://revista.fct.unesp.br/index.php/cpg/article/view/1933>.
- FREDERICO, S. Modernização da agricultura e uso do território: a dialética entre o novo e o velho, o interno e o externo, o mercado e o Estado em áreas de cerrado. **Geosp – Espaço e Tempo**, São Paulo, n. 34, p. 46-61, 2013. Número Especial. DOI: <https://doi.org/10.11606/issn.2179-0892.geosp.2013.74934>.
- FREDERICO, S.; BUHLER, E. A. Capital financeiro e expansão da fronteira agrícola no Oeste da Bahia. In: LEMOS ALVES, V. E. (ed.). **Modernização agrícola nos cerrados do centro-norte do Brasil [S. l.: s. n.]**, 2015. p. 199-226.

- HAESBAERT, R. **Des-territorialização e identidade: a rede gaúcha no nordeste**. Niterói: EdUFF, 1997.
- HARVEY, D. **The limits to capital (new and fully updated edition)**. London: Verso, 2006.
- HEEMSKERK, E. *et al.* The promise and perils of using big data in the study of corporate networks: problems, diagnostics and fixes. **Global Networks**, Hoboken, v. 18, n. 1, p. 3-32, 2018. DOI: <http://doi.org/10.1111/glob.12183>.
- HENFREY, C. Peasant Brazil: agrarian history, struggle and change in the Paraguaçu Valley, Bahia. **Bulletin of Latin American Research**, Oxford, v. 8, n. 1, p. 1-24, 1989. DOI: <http://doi.org/10.2307/3338891>.
- INEMA. **Serviço Estadual de Informações Ambientais**, 2021. Available from: www.seia.ba.gov.br. Access in: 13 Mar 2024.
- IORIS, A. Interrogating the advance of agribusiness in the Amazon: production, rent and politics. **Revista NERA**, Presidente Prudente, n. 42, p. 74-97, 2018. DOI: <http://doi.org/10.47946/rnera.v0i42.5682>.
- JESSOP, B.; BRENNER, N.; JONES, M. Theorizing sociospatial relations. **Environment and Planning. D, Society & Space**, London, v. 26, n. 3, p. 389-401, 2008. DOI: <http://doi.org/10.1068/d9107>.
- KAY, C.; VERGARA-CAMUS, L. (ed.). **La cuestión agraria y los gobiernos de izquierda en América Latina: campesinos, agronegocio y neodesarrollismo**. Buenos Aires: CLACSO, 2018. <http://doi.org/10.2307/j.ctvn96g0z>.
- MARTINS, J. S. **A Militarização da Questão Agrária no Brasil**. Petrópolis: Vozes, 1985.
- MARTINS, J. S. **Camponeses e a política no Brasil: as lutas sociais no campo e seu lugar no processo político**. Petrópolis: Vozes, 1995.
- MARTINS, J. S. **O cativo da terra**. 3. ed. São Paulo: Hucitec, 1986.
- MONDARDO, M.; NUNES, J. R. MATOPIBA: do domínio da terra e abuso da água aos territórios de resistências das populações tradicionais. **Revista NERA**, Presidente Prudente, v. 22, n. 47, p. 296-320, 2019. DOI: <http://doi.org/10.47946/rnera.v0i47.6273>.
- MOORE, J. **El capitalismo en la trama de la vida**. Ecología y acumulación de capital. Madrid: Traficantes de Sueños, 2020.
- MUCUGÊ MIRANDA, R. Questão Agrária em Ibicoara-BA: antes e depois da barragem do apertado. *In: ENCONTRO NACIONAL DE GEOGRAFIA AGRÁRIA*, 21., Uberlândia, 2012. Available from: <https://rogeriomucuge.wordpress.com/wp-content/uploads/2012/10/artigo-questc3a3o-agrc3a1ria-em-ibicoara-antes-e-depois-da-barragem-do-apertado.pdf>.
- NOOY, W. Fields and networks: correspondence analysis and social network analysis in the framework of field theory. **Poetics**, Amsterdam, v. 31, p. 305-327, 2003. DOI: 10.1016/S0304-422X(03)00035-4.
- PAULANI, L. M. Acumulação e rentismo: resgatando a teoria da renda de Marx para pensar o capitalismo contemporâneo. **Revista de Economia Política**, São Paulo, v. 36, n. 3, p. 514-535, 2016. DOI: <http://doi.org/10.1590/0101-31572016v36n03a04>.
- REPÓRTER BRASIL. **“Coquetel” com 27 agrotóxicos foi achado na água de 1 em cada 4 municípios**. 2019. Available from: <https://reporterbrasil.org.br/2019/04/coquetel-com-27-agrotoxicos-foi-achado-na-agua-de-1-em-cada-4-municipios/>.
- ROOS, D. A reprodução contraditória do campesinato frente a territorialidade do agronegócio: subordinações e resistências em assentamentos rurais no Centro-Sul do Paraná. **Revista NERA**, Presidente Prudente, n. 30, p. 169-187, 2016. <https://doi.org/10.47946/rnera.v0i30.3849>.
- SCHNEIDER, S.; NIEDERLE, P. A. Resistance strategies and diversification of rural livelihoods: the construction of autonomy among Brazilian family farmers. **The Journal of Peasant Studies**, London, v. 37, n. 2, p. 379-405, 2010. DOI: <http://doi.org/10.1080/03066151003595168>.
- SWYNGEDOUW, E. Rent and landed property. *In: SAAD-FILHO, A.; FINE, B.; BOFFO, M. (ed.). The Elgar companion to Marxist economics*. USA: Edward Elgar Publishing. p. 310-315, 2012. DOI: <http://doi.org/10.4337/9781781001226.00055>.
- TEIXEIRA, G. **Rentismo à brasileira, uma via de desenvolvimento capitalista: grilagem, produção do capital e formação da propriedade privada da terra**. 2016. Tese (Doutorado em Geografia Humana) – Universidade de São Paulo, São Paulo, 2016.
- WELCH, C. A. Estratégias de resistência do movimento camponês brasileiro em frente das novas táticas de controle do agronegócio transnacional. **Revista NERA**, Presidente Prudente, ano 8, n. 6, p. 35-40, 2005.

Article editor
José Sobreiro Filho

Received: Dec. 26, 2023
Accepted: Mar. 18, 2024

ARRAZOLA, I.