

The Agribusiness Model In Mato Grosso Do Sul: From Social Inequality To Food Insecurity In The Context Of The Neoliberalism

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Abstract

Background: In recent decades, agriculture in Mato Grosso do Sul has undergone significant transformations, with extensive cattle ranching and savannah areas undergoing structural changes such as economic deregulation, export orientation, use of imported resources, and expansion of the commodity model. These changes had an impact on agrarian organization and the lives of local communities, particularly indigenous peoples, reflecting a broader territorial reorganization.

Materials and Methods: This article examines the characteristics of the new agricultural model and its relationship with issues of inequality and food security in Mato Grosso do Sul, in the context of neoliberal globalization. To this end, we employed a range of official data sets, including those from the IBGE, PNAD, UNDP, and other sources.

Results: The findings indicate a concentration of wealth, social inequality, and heightened food insecurity, despite the elevated productivity of crops such as soy, corn, meat, and sugar cane, along with other commodities.

Conclusion: As previously outlined, the intricate web of social relations within a society encircled by agribusiness interests, within the context of capitalist accumulation, gives rise to a multitude of social contradictions, crises, environmental degradation, insecurity, and situations of violence

Key-Words: business model; food; inequality; food consumption.

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I. Introduction

Since the 1970s, Brazilian agriculture has undergone significant transformations. These include the development of agriculture in the Cerrado regions, economic deregulation driven by neoliberalism, the shift in agricultural production towards exports, the opening of the country to foreign inputs (pesticides, fertilizers, machinery), the expansion of the soy production model, and the centralization and concentration of agri-food production. These changes had a profound impact on the structure of Brazil's agricultural sector and on the lives of small-scale producers and farmers, which in turn gave rise to broader changes related to the country's territorial restructuring.

This article delineates the salient features of this agricultural model in the state of Mato Grosso do Sul and its nexus with the issue of inequality and access to food in the context of neoliberal globalization.

The concept is that no production model is inherently superior; rather, there are multiple potential avenues for development, and the selection of one over another is contingent upon the power dynamics between the various stakeholders involved in the production, distribution, and consumption of food. These include large-scale producers, multinational seed and agro-industrial companies, representative bodies, the local population, and the role of the government in spearheading the modernization of Brazilian agriculture.

The act of eating is a fundamental human activity, essential for the perpetuation of life and a basic social right in any society. Nevertheless, a considerable proportion of the global population suffers from undernourishment or significant nutritional deficiencies, despite the fact that global food production is sufficient to meet the dietary needs of all Earth's inhabitants. It is crucial to reflect on the factors influencing food consumption, production, and distribution, as well as the beneficiaries of these processes, in order to comprehend the paradox of hunger in a world where sufficient food is produced to meet the needs of the global population. Moreover, these questions are pivotal for grasping the interconnections between identity, culture, society, and politics, as they are inextricably linked to the food processes that shape the contemporary world.

The Agribusiness Sector: Evolution and Definitions

As Oliveira (2016) notes, in the 19th century, the southern region of the former state of Mato Grosso, currently known as Mato Grosso do Sul, began to be occupied by migrants from different parts of Brazil, such as

Minas Gerais, São Paulo, Rio Grande do Sul, and Paraná, as well as people from neighboring countries such as Paraguay and Bolivia. These migrants were collectively referred to as "pioneers." This occurred subsequent to the establishment of private land ownership in the region and the conclusion of the war between the Triple Alliance (comprising Brazil, Argentina, and Uruguay) and Paraguay in 1865. From that point onward, the region was characterized by armed conflict, particularly when indigenous communities experienced incursions into their territories by ranchers and soldiers from the demobilized imperial army (Oliveira, 2016).

Furthermore, the region experienced a notable increase in population from the 1940s onwards. This is primarily attributable to the expansion of agricultural frontiers during the Vargas administration, which began to view the Midwest as a potential hub for economic production. In the 1940s, the German geographer Leo Waibel posited that the Cerrado lands in the region were being underutilized. For Waibel, the notion that the savannahs and grasslands in the Brazilian Midwest are inherently unsuitable for agricultural use and can only be utilized as pastureland is entirely unsubstantiated. He posits that this notion is perpetuated by the prevalence of forest land, yet this does not imply that the Cerrado is inherently infertile and incapable of cultivation in the face of mounting demographic pressure, land scarcity, and the adoption of more intensive techniques. (Waibel, 1948, as cited in TERRA, 2006). In this way, the modernization of agriculture can be understood as an instrument for reorganizing the agrarian space in the face of the expansion of the capitalist mode of production in Mato Grosso do Sul. The incorporation of technical and scientific progress has transformed the state, which in the early 1970s was used exclusively for extensive livestock farming, into a region of modern agriculture. This has resulted in the transformation of the region into one characterised by modern agriculture, while simultaneously giving rise to exclusions, which have been primarily manifested in the concentration of land ownership and, consequently, the eviction of a significant number of workers from the countryside and the confinement of indigenous peoples (Terra, 2006).

As Bourlegat (2000) notes, the subsequent proliferation of cattle ranching and mechanized soybean farming contributed to a notable surge in the region's economic vigor, drawing a considerable influx of migrants from other regions. Until the mid-1970s, the prevailing production model was based on raising beef cattle on large, unproductive plantations. During this period, the process of occupying these extensive areas for agricultural production commenced, primarily with pine and eucalyptus plantations between the cities of Ribas do Rio Pardo and Três Lagoas, and subsequently with soy, corn, and sugarcane plantations in other regions of the state (Mariano & Teixeira, 2022).

This marked the inception of the process of agricultural modernization in the state, which entailed the implementation of production systems formally designated as "technological packages" at the time. The prevailing scientific agricultural research indicated that the organization of "technological packages" was the most expedient and efficacious method for leveraging existing knowledge and implementing it through the Brazilian Agricultural Research Corporation's (Embrapa) technical assistance and rural extension programs, with the government's promotion of rural credit (Mendes, 2015).

The concept of the "technological packages" that were envisioned at the time is relatively straightforward in comparison to the present. They were understood as efficient linear ways of disseminating, publicizing, transferring, marketing, and financing technologies, as well as evaluating and monitoring their adoption (Denardin, 2013, p. 2). Typically, technological packages comprise three categories of knowledge: raw materials, methods for combining them, and market information. At the time, researchers, technical assistants, rural producers, and representatives of financial agents (in this case, the Bank of Brazil) developed a methodology for formulating these technological packages during specific meetings, which were held in the target regions and followed a pre-established recipe described in a guiding document. Theoretically, an optimal model would integrate research, extension, and rural credit (Denardin, 2013, p. 2).

This technical progress, which can be defined as the accumulation of human knowledge and expertise, has had a significant impact on the development of the Brazilian agricultural sector. Raw materials, machinery, and equipment were designed with the objective of increasing productivity and profit at any cost. The selective process of this model in the areas where it was implemented excluded farmers, the vast majority of whom were family farmers, who were either unwilling or unable to afford to respond positively to the proposed innovations (Gehlen, 2001).

The advent of the neoliberal model in the early 1990s precipitated significant transformations in the agricultural system, with a shift in focus towards meeting the demands of the foreign market and an increased reliance on technology-driven production. Consequently, during the 1990s, a novel agricultural model based on agribusiness began to emerge, characterised by a deepening and intensification of agro-industrial production oriented towards the supply of raw materials for export, in accordance with the logic of the international commodity market.

In light of the aforementioned transformation in the production process, the agribusiness model can be defined as a set of operations for the production and distribution of agricultural supplies, production operations

on farms, storage, processing, and distribution of products and items produced from them (Silva & Breitenbach, 2013).

The economic and decision-making power of some companies over the distribution and marketing chains results in the determination of product prices, which is disadvantageous to small and medium-sized producers. Furthermore, the technological packages offered by major seed and agrotechnical companies have an impact on the logic of production, including the use of transgenic seeds, agrochemicals, machinery, agricultural sprayers, weather forecasting satellites, specialists and technicians, specific machinery, and so forth. These packages also influence standards of taste, size, and color of the food consumed and have an effect on the rural landscape (Denardin, 2021).

Following the economic opening of the Brazilian market in the early 1990s (Albuquerque; Rezende; Freire, 2015), rural areas have become increasingly subject to the "laws of the market" and the influence of agribusiness. The agribusiness model is situated within a technological paradigm that fosters dependence on agrochemicals and genetically modified seeds, thereby engendering greater reliance on foreign investment (through multinational seed and food companies) and financial and speculative capital. This is exemplified by the "seed pools" that have begun to invest in a product that functions internationally as a commodity whose price is set on the Chicago Stock Exchange. Conversely, this production model entails poor crop rotation, which results in increased soil erosion, a departure from traditional land management practices, and the expansion of the "agricultural frontier" through the deforestation of the Cerrado and the displacement of indigenous communities. The advancement of agribusiness thus entails significant environmental consequences in the medium and long term, as well as a threat to socially vulnerable or endangered populations, such as the indigenous populations of the Dourados region in the southwest of the state (Albuquerque; Rezende; Freire, 2015).

The current hegemonic production model is based on the rotation of transgenic soy and corn crops, as well as other products that have undergone technological advancement since hybridization. This model entails the control of crop reproduction by multinational seed companies, either through patents or the sale of hybrid seeds (i.e., incapable of being reproduced by rural workers and farmers).

The current model is further intensifying with the advent of agrofuels, which are being positioned as a medium- and long-term replacement for hydrocarbon energy sources (gas and oil) as fuel. This is giving rise to significant new risks to food sovereignty and security, as a result of the growing tension between the production of food crops for human consumption and the production of food crops for use in agrofuels. In numerous instances, crops such as soy, corn, sugar cane, eucalyptus, and pine are cultivated for the production of biofuels (biodiesel and ethanol), animal feed, and cellulose, which has the consequence of reducing the availability of food for the population and increasing the cost of popular foods.

II. Objectives

The objective of this paper is to present an overview of the characteristics of the agribusiness model in the state of Mato Grosso do Sul and its connection to the problems of inequality and food security among the local population.

III. Methodology

The methodology employed in this study was based on data generated by the Brazilian Institute of Geography and Statistics (IBGE), the National Household Sample Survey (PNAD), the Ministry of Agriculture, Livestock and Food Supply (MAPA), and the Mato Grosso do Sul State Secretariat for the Environment and Development (SEMADE-MS). The Secretariat for the Environment, Development, Science, Technology and Innovation of the State of Mato Grosso do Sul (SEMADESC-MS), the United Nations Development Programme (UNDP), the Human Development Index (HDI) and the Organization for the Human Right to Adequate Food and Nutrition (FIAN) were consulted. The primary data analyzed were produced in 2017, and their discussion considered the existing literature on the process of modernization of Brazilian agriculture, with particular attention to the specificities of the process in the state of Mato Grosso do Sul.

IV. Results And Discussion

To gain a more profound understanding of the significance of the agribusiness sector, it is essential to examine the data provided by the Ministry of Agriculture, Livestock and Food Supply (MAPA, 2023). This analysis reveals that the agribusiness sector in Mato Grosso do Sul has exhibited remarkable growth, with positive indicators that stand out in comparison to the national average. Based on data obtained up to July 2023, the gross value of agricultural production (VBP) in the state is projected to reach R\$ 69.6 billion (approximately 12.4 billion dollars), representing a 3.3% increase from the R\$ 67.4 billion (approximately 11.9 billion dollars) recorded in 2022. Crops were once again the primary focus, with an estimated value of R\$ 50.4 billion (8.95 billion dollars) for the current year, representing an 8.2% increase over 2022. The soybean sector is the leading contributor to

the index, with an estimated income of R\$29.8 billion (5.30 billion dollars) and a 28.3% increase. The state's livestock sector generated revenue of R\$19.1 billion (3.39 billion dollars).

The majority of agribusiness production in Mato Grosso do Sul is destined for export. The data provided by the State Secretariat for the Environment, Development, Science, Technology and Innovation (SEMADESC) and the Ministry of Development, Industry, Trade, and Services (MDIC) indicate that exports from Mato Grosso do Sul for the period between January and August 2023 reached a total value of US\$ 7.230 billion. This represents a 28.90% increase compared to the US\$ 5.609 billion recorded in the same period of the previous year. The products that exhibited the greatest volume and value were soybeans, cellulose, and beef (SEMADESC, 2023, p. 2).

The agribusiness sector exports the majority of its output. In 2022, agribusiness products accounted for US\$6.9 billion, or 90% of the US\$7.595 billion exported by Mato Grosso do Sul during the same period.

As reported by the Brazilian Confederation of Agriculture (CNA, 2022), the volume of agricultural production in Mato Grosso do Sul has increased approximately 19-fold over the past four decades. In the 1977/1978 harvest, which occurred during the period of the state's formation, the volume of grain produced was 987.2 thousand tons. In the 2020/2021 harvest, the volume exceeded 18.9 million tons, representing an increase of 1,816.9%. The result was threefold that of Brazil's grain production, which grew by 568.4% over the same period.

The production of beef, pork, and chicken in the state of Mato Grosso is the eighth highest in the country, serving both the local and national markets, and contributing to the Brazilian trade balance through exports to foreign markets. In 2021, the state sold more than 400,000 tons of these three proteins and earned US\$1.2 billion, indicating a substantial increase of 5,234.9% in revenue compared to its initial 24-year period, beginning in 1997, when it earned US\$24 million from beef, pork, and chicken exports (CNA, 2022).

This prominence in national production and exports was largely attributable to the formation of strategic alliances between the productive sector and local universities, Embrapa, and private companies. These collaborative endeavors enabled a more nuanced understanding of the needs of producers, which in turn informed the implementation of enhancements to the no-till system. These improvements sought to integrate, diversify, and enhance the profitability of rural producers. This resulted in the implementation of the crop-livestock integration (CLI) system in the 1990s, which are regarded as fundamental aspects of agricultural practice (Dorneles & Silva, 2014). In practice, technological progress in Brazilian agriculture can be observed in the increased use of fertilizers and pesticides, the intensive use of new arable land, and the development of new cultivation techniques adapted to the Brazilian climate and soil. Collectively, these changes have altered the technological pattern of Brazilian agriculture (Nascimento; Aquino; Delgrossi, 2021; Mengatti and Barros, 2007).

It is crucial to underscore the pivotal role of agronomic research in driving technological advancement in agriculture. As the authors indicate, scientific and technological progress has permitted not only the exploitation of traditional agricultural lands, but also the incorporation and exploitation of the Brazilian Cerrado through cultivars and management systems, such as no-tillage, adapted to Cerrado soils with low fertility, phosphorus deficiency, and high aluminum toxicity. These intrinsic obstacles limit the development of crops. Recently, increased productivity has also been associated with the cultivation of genetically modified organisms (GMOs), such as transgenic soybeans and corn.

Despite the advancements in research aimed at enhancing production while minimizing environmental and population-wide impacts, the agricultural sector continues to exhibit inherent contradictions. These contradictions are evident in the practice of intensive agriculture, which involves the extensive cultivation of monocultures such as soy, eucalyptus, and sugarcane, as well as the management of large, poorly managed pastures. Furthermore, uncontrolled deforestation intensifies the impact, endangering not only the sustainability of agriculture but also the environment and communities that have relied on alternative economic activities, such as ecotourism, fishing, and family farming. This situation has resulted in conflicts and violence related to land issues, primarily involving indigenous peoples, settlers, and individuals residing on land undergoing land reform (SEMADE-MS, 2011). Furthermore, this issue has been associated with an increase in poverty and food insecurity among the state's population, particularly over the past decade.

In summary, the expansion of the agribusiness model has resulted in a new territoriality of rural communities, affecting indigenous populations, the Cerrado, and even the Pantanal. The advent of intensive agriculture has resulted in the emergence of uniform, homogeneous, and monochromatic landscapes, which have been aptly described as a "green desert" of soy. These landscapes have replaced the diverse and rich ecosystems that previously existed in these regions, which were once considered biodiversity hotspots. The expansion of agribusiness has resulted in the imposition of specific modes of production, which have in turn led to the reterritorialization of entire populations that have been unable to maintain their traditional way of life. Indeed, one might characterize the current state of agriculture as one lacking a farmer population.

As has been previously noted, the transformations that have occurred in the state in recent decades have oriented agriculture towards export-oriented production, thereby transforming numerous practices and social

relations in rural areas. This situation has been replicated in the remainder of the country, as well as in other parts of Latin America and vast regions of Asia and Africa, with specific characteristics in each country and region. The production of crops and other agricultural products by small farmers and producers, which has traditionally been intended for local or national markets or for subsistence, has been replaced in recent years by exports of goods promoted by large agro-industrial corporations.

Consequently, the enhanced productivity of industrial agriculture and technological intensification has paradoxically resulted in increased poverty and hunger. Despite achieving record levels of food production (enough to feed 800 million people), a country like Brazil has not experienced a transformation in its socio-economic landscape as a result of the increase in incomes of workers in the agro-industrial states. This is evidenced by the latest IBGE data (2022).

The 2022 Census data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that the state of Mato Grosso do Sul has an estimated population of 2,757,013 inhabitants and covers an area of 357,142.082 km². The state has a Human Development Index (HDI) of 0.742 (UNDP, 2021), which is lower than the national HDI of 0.754.

As reported by the IBGE, the number of impoverished individuals in Mato Grosso do Sul exceeded 1.24 million in 2021. At present, approximately half of the state's population is classified as low-income and requires assistance from social programs to maintain a basic standard of living. The situation is further exacerbated when examining municipalities in rural areas, where up to 70% of the population is affected.

The data provided by the Ministry of Citizenship on those registered in the federal single registry, or CadÚnico (2023), demonstrates a significant increase in the prevalence of poverty in Mato Grosso do Sul. In September 2017, the number of individuals registered on the federal single registry (CadÚnico) was 1,039,000. In less than five years, the number has increased by 19.3%. The combination of rising prices for basic goods, such as food, electricity, and fuel, with the increase in unemployment that began with the onset of the pandemic in 2020 has resulted in a significant deterioration of the situation. In the 18-month period between March 2021 and August 2022, the number of individuals registered in the CadÚnico program increased by over 200,000.

In November 2020, the total number of individuals registered with CadÚnico in Mato Grosso do Sul was 1,038 million. Subsequently, there has been a gradual increase, reaching 1.240 million people in April 2022. Those included in the CadÚnico registry are individuals whose income is up to half the minimum wage per person (equivalent to approximately US\$108) or up to three times the minimum wage in the aggregate for the entire family (equivalent to approximately US\$645) (CadÚnico, 2023).

Despite the prominence of Mato Grosso do Sul in the national agribusiness sector, the advancement of the industry fails to benefit the most economically disadvantaged population. The data indicate that inequality is reduced when jobs and income alternatives are provided; however, this is not a characteristic of the agribusiness sector. The agribusiness sector has been identified as an activity that concentrates wealth, rather than as an agent for reducing inequality. Furthermore, it has become increasingly automated, with a corresponding reduction in the number of basic laborers employed.

The 2017 agricultural census conducted by the IBGE indicates that family farming is the sector that employs the largest number of people, representing 67% of the total employed population. However, it accounts for only 23% of the total value of production of agricultural establishments. As evidenced by the General Register of Employed and Unemployed (CAGED), agribusiness was responsible for a mere 16.05% of the formal jobs created in Mato Grosso do Sul between 2021 and 2023. The mean income of a worker employed in the sector is R\$ 1,750.23 (approximately US\$ 310) for a 44-hour workweek.

As indicated by the IBGE in its 2021 Synthesis of Social Indicators (SIS), a considerable proportion of the state's population is classified as living in poverty. In accordance with the criteria established by the World Bank, individuals classified as poor are those whose average daily income falls below the threshold of US\$ 5.5. According to this classification, the IBGE determined that 17.1% of the population of Mato Grosso do Sul, or 444.89 thousand individuals, have an income of up to R\$ 522.50 (approximately US\$ 93.00) per month, which is less than half of the minimum wage in effect during that period, R\$ 1,100.00 (approximately US\$ 195.00). The situation is particularly dire for 122,990 individuals (4.7% of the population), who subsisted on a mere quarter of the minimum wage. This monthly income equates to a daily income of R\$ 7.00 (approximately US\$ 1.20), which is insufficient to purchase even a minimal amount of milk. The Brazilian National Household Sample Survey (PNAD, 2023) revealed that in Mato Grosso do Sul in 2022, the top 1% of income earners, or approximately 26,000 individuals, had an average income of R\$ 26,995.00 (approximately US\$ 4,790.00). Conversely, the 10% of the population with the lowest income will receive an average of R\$ 468.00 (approximately US\$ 84.00). The income of the richest 50% is 57 times higher than that of the poorest 50%. This indicates a situation of profound social inequality.

Studies on inequality at the state level have concentrated on issues of race, education, and health (Picole; Cazola; Nascimento, 2019; Basta et al., 2013; Cordeiro, 2008). The most recent research on this topic was conducted by Anunciato and Franco (2017), who conducted a detailed study of socioeconomic indicators from

the 2010 PNAD. In their analysis, they indicate that 104,469 individuals would be classified as experiencing extreme poverty in the state of Mato Grosso do Sul during the initial decade of the 21st century. It is important to note, however, that the current data presented above indicate an increase in the population living in extreme poverty. This could be the result of a decline in income and employment, or it could be related to the impact of the global pandemic that occurred between 2020 and 2022.

The prevalence of food insecurity among the local population, despite the region's robust cereal production, further exacerbates the already concerning picture of social inequality. In 2022, 37% of households in the state were affected by a form of food insecurity, according to data from the Brazilian Institute of Geography and Statistics (IBGE).

Table I. Food insecurity per 1000 households in the State of Mato Grosso do Sul.

Food Insecure Households in the State of Mato Grosso do Sul	Degree of Food Insecurity (%)
Food insecure households	25.8
Severely food insecure households	4.5
Moderately food insecure households	6.7
Total number of insecure households	37

Source: IBGE, 2022.

The situation of food insecurity in Brazil has worsened as a consequence of the impact of the pandemic on the economy (unemployment, underemployment, bankruptcies, etc.) and on the level of inequality (socioeconomic, educational, health, etc.) experienced by the Brazilian population (Santos Leite; Ferreira Leite, 2022).

Menezes (1998) posits that achieving food security entails guaranteeing all individuals' right to consistent and sustainable access to nutritious food in adequate quantities, without compromising access to other essential needs. This should be based on dietary practices that promote health, respect cultural diversity, and are environmentally, economically, and socially sustainable.

These issues are particularly acute for the state's indigenous populations, including the Guarani and Kaiowá. As indicated in the study "Food and Nutrition Sovereignty and Security in the Guarani and Kaiowá Territories of Mato Grosso do Sul, Brazil," conducted by the Organization for the Human Right to Adequate Food and Nutrition (FIAN, 2023).

The results of the FIAN survey (2023) indicated a monotonous diet, with the majority of individuals consuming primarily rice and beans (94.2% rice and 89.2% beans). The survey revealed that only 34.4% of respondents had consumed a protein source the previous day, while 33.1% had consumed tubers, 10% had consumed vegetables, and only 4.4% had consumed fruits. This indicated that the dietary base of the communities was a combination of foods from the basic food basket and those produced in rural areas. With regard to ultra-processed products, it was only in the territory of Ñande Ru Marangatu that consumption of unhealthy food markers was observed. This is primarily attributable to the proximity of certain areas to urban centers. With regard to the provision of school meals, 10.2% of families were unable to access them during the period under study. These data suggest that the Brazilian National School Feeding Program (PNAE) was not provided in a consistent and effective manner in some areas. Of the families who responded to the question of whether school meals included food from their culture (a legal requirement), 40.3% indicated that this was not the case, while 5.1% stated that it was sometimes included. In regard to social support and protection policies, the most frequently cited benefits were basic food baskets (94.2% of households), Bolsa Família, Brazil's social welfare program (65.4%), state or municipal assistance programs (20.0%), and social security (12.7%). Among the families that receive a basic food basket, 80.0% receive the basket provided by the Brazilian National Supply Company (Conab) in collaboration with the National Indian Foundation (Funai). Additionally, 30.6% receive the state basic food basket and 7.5% receive the municipal basic food basket. With regard to Apyka'i, the delivery of the basic food basket by Conab was irregular until the conclusion of the survey, following an interruption in December 2022. In the other areas where restitution was carried out, the monthly deliveries were irregular, with delays of up to three months being reported. Furthermore, the quantity and quality of the food provided were insufficient. In Guaiviry, families were deprived of a basic food basket for a period of six months in 2022. In all municipalities, the basket provided by Conab was reported to provide sustenance for a period of between three and 15 days, with the duration dependent on the size of the family. In the municipality of Antônio João, in Ñande Ru Marangatu, social assistance professionals provide erroneous guidance, indicating that the Bolsa Família benefit is unavailable when accessing the basic food basket.

The survey also indicated that food and nutrition insecurity (FNI) was present in all households, with and without children under 16 years old, at a rate of 77.0%. Moderate FNI was present in 22.2% of households, while 11.4% exhibited severe FNI.

It can be reasonably inferred that the experience of hunger was a factor in the lives of these households to some extent. Even with a moderate diet and nutrition, an adult is already experiencing food insecurity, which

forces them to forgo meals or reduce their intake to meet the nutritional needs of their children. As the condition that restricts access persists and intensifies, food scarcity also affects children, leading to a daily experience of hunger.

Food and nutrition insecurity is an accurate description of hunger; however, it is important to consider the possibility of hunger among adults in the family, even in a less severe situation. This could indicate an imminent risk of hunger among all residents and its persistence.

In the Dourados region of Mato Grosso do Sul, there is a plethora of evidence attesting to a situation of violence perpetrated by the state, farmers, and militias against indigenous peoples. From 2019 to 2022, there were 146 documented cases of indigenous people being killed. The daily lives of the Guarani-Kaiowá people have been historically and geographically marked by the deterritorialization and precarization imposed by agribusiness (Mondardo, 2019) on the extractivist, colonizing, developmentalist, and agribusiness fronts. This has intensified since the recent changes introduced by Provisional Measure 886/2019 of the government of former President Bolsonaro (2019-2022). This transfer of responsibility for the demarcation and protection of indigenous lands from the National Indian Foundation (Funai) to the Ministry of Agriculture, which is headed by Teresa Cristina, a rural producer from Mato Grosso do Sul, also a member of the so-called "Beef, Bullet and Bible Caucus," has significant implications for the future of indigenous communities in Brazil. This measure constituted an attack, demolition, and looting of the territories of traditional, indigenous, campesino, and quilombola peoples, thereby confirming the 2018 electoral promise/threat not to demarcate "another inch of indigenous land" (Mondardo, 2019, p. 157).

Furthermore, the ongoing violations reflect a pattern of discrimination against the Guarani-Kaiowá people. In general, the rights of indigenous peoples have been infringed upon due to the violation of their cultural identity. This violation creates a context in which other rights, including the right to adequate food and nutrition, can be denied.

The denial of the cultural identity of the indigenous peoples of Mato Grosso do Sul has been evident since the beginning of the occupation process, which resulted not only in one of the most radical territorial confinements, but also in the erasure of these peoples from the history of the region. The colonial occupation entailed the radical, forced, and often violent removal of indigenous inhabitants from their lands, with the objective of rendering them "invisible" through the implementation of assertive policies of integration into the regional economy (Brand; Calderoni, 2010, p. 63).

Another issue with the agribusiness sector is its relatively low contribution to the gross domestic product (GDP) and the collection of the tax on the movement of goods and services (ICMS). Despite a substantial promotional effort by the agribusiness sector to portray itself as a paragon of modernity and completeness within the Brazilian economy, empirical evidence has demonstrated that agribusiness does not fully align with these claims. As demonstrated by the studies conducted by Mitidiero Junior and Goldfarb (2021), the agribusiness sector contributed a mere 5.4% to the gross domestic product (GDP), while the industrial sector contributed 25.5% and the service sector contributed 52.4%. In other words, the sector that produced the greatest quantity of goods for export is the one that contributes the least to the overall calculation of wealth production.

Despite its relatively minor role in GDP production, the agricultural sector has been the recipient of considerable incentives. The federal government has allocated R\$ 364.22 billion (approximately US\$ 65 billion) to support national agricultural production among medium and large rural producers until June 2024, while family farming has been granted R\$ 77.7 billion (approximately US\$ 15 billion) (MAPA, 2023).

Furthermore, agribusiness has been allocated a disproportionate share of public resources, yet has failed to contribute significantly to Brazil's economic growth. It is a sector that is subject to minimal taxation. One factor that contributes to the low tax collection in this sector is the exemption on exports. Table 2 illustrates the export tax payments made by the agriculture, livestock, and related service sectors between 2011 and 2019 (Receita Federal, 2023).

Table 2. Export Tax (R\$) paid by Agriculture, Livestock and Other Related Services (Agribusiness) between 2011 and 2019.

Year	Export Tax (R\$)
2011	72,109
2012	6,453
2013	20,629
2014	85,045
2015	84,828
2016	44,992
2017	5,804
2018	9,703
2019	16,331

Source: Receita Federal, 2023.

The data indicates that the Brazilian tax system is not characterized by a high number of taxes, but rather by a regressive and indirect nature, with a significant focus on taxing food consumption. This has the effect of increasing the cost of food and limiting access to a large proportion of the population, contributing to food insecurity among the most economically disadvantaged groups. Conversely, agricultural exports are exempt from a number of taxes. In this regard, the Brazilian National Council for Fiscal Policy (Confaz) published ICMS Agreements 52/1991 and 100/97, which resulted in a reduction in the tax base. The first category of goods and services subject to reduced taxation is those exported between states and used in agriculture, including seeds, insecticides, herbicides, and so forth. The second category of goods and services subject to reduced taxation is those used in industry and agriculture, including industrial equipment and agricultural implements.

The agreements were initially valid until December 31, 1992, and April 30, 1999, respectively. However, their provisions were extended due to the importance of their measures for the agricultural sector. The aforementioned agreements were recently renewed, with their terms extended until April 30, 2024, and December 31, 2025, respectively.

V. Conclusions

As previously outlined, the intricate web of social relations within a society encircled by agribusiness interests, within the context of capitalist accumulation, gives rise to a multitude of social contradictions, crises, environmental degradation, insecurity, and situations of violence. It is imperative to recognize that an in-depth comprehension of the agribusiness production model and its multifaceted ramifications necessitates an examination of its role as a pivotal element in the advancement of the capitalist mode of production within the context of contemporary neoliberal globalization. This statement, in addition to opposing a purely mechanical, positivist, and instrumentalist conception of knowledge, is based on the proven fact that the enormous profits made through the exploitation of agribusiness, mainly in terms of dollars for the country's trade balance, make it intolerable from the perspective of farmers. It is imperative to acknowledge not only the territorial demands of indigenous populations in the state, but also to recognize that agribusiness is not a panacea for the pervasive issues of social inequality and food insecurity in a society shaped by the interests of agribusiness in a context of capitalist accumulation that gives rise to social contradictions, crises, environmental degradation, insecurity, and situations of violence.

The territories inhabited by the indigenous peoples of Mato Grosso do Sul are sites of tangible territorial conflict, where the interests of agribusiness are at stake. These interests threaten the survival of the indigenous peoples and small farmers, as well as alternative conceptualizations of production and ways of thinking about life, death, and the relationship between human beings and between human beings and nature. Resistance to the agribusiness model extends beyond a cyclical dispute over land. Populations value their territories as lived spaces, both materially and symbolically.

It is also important to note that the current model of agribusiness, which utilizes materials, energy, and knowledge derived from nature, as well as inputs such as seeds, fertilizers, and pesticides, has an impact on the territories of traditional populations. While this model is only sustainable from an economic and financial perspective, it has led to the emergence of significant challenges and contradictions that have persisted in Mato Grosso do Sul over time.

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