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**Agricultural aptitude and concentration of production in the cities from the Oriental Mesoregion of Tocantins and from the Far West Mesoregion of Bahia.**

**Aptitud agrícola y concentración de la producción en municipios de la Mesoregión Oriental de Tocantins y de la Mesoregión del Extremo Oeste de Bahía.**

**Aptidão agrícola e concentração da produção em municípios da Mesorregião Oriental do Tocantins e da Mesorregião Extremo Oeste Baiano.**

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**Abstract**

This paper discusses the pioneering movement of agricultural products that constitute the contemporary spatial concentration of agricultural production in the cities from Eastern Mesoregion of Tocantins and the Far Western Mesoregion of Bahia, considering the data from 2000, 2010 and 2020, available in the research of Municipal Agricultural Production (PAM) held by IBGE. Preceded by bibliographical tracking on the theme, survey and organization of PAM's secondary database, the methodological procedures will be described in the text. The results identify products that are part of the agricultural history of this territorial division with accentuated concentration of production, and the changes in the planted area of the Far West Mesoregion of Bahia in relation to the Oriental Mesoregion of Tocantins.

**Keywords:** Agricultural Productive Region. Restructuring of Agricultural Production. MATOPIBA. Oriental Mesoregion of Tocantins. Far West Mesoregion of Bahia.

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**Resumen**

Este estudio analiza la marcha pionera de los productos agrícolas que componen la concentración espacial contemporánea de la producción agrícola en los municipios de la Mesoregión Oriental de Tocantins y la Mesoregión del Extremo Oeste de Bahía, considerando los datos de 2000, 2010 y 2020 puestos a disposición en la investigación de Producción Agrícola Municipal (PAM) realizada por el IBGE. Precedido por el rastreo bibliográfico sobre el tema, el levantamiento y organización

de la base de datos secundaria de la PAM, los procedimientos metodológicos serán detallados en el texto. Los resultados identifican productos que forman la historia agrícola de esta división territorial con una marcada concentración de la producción y el cambio en el área plantada de la Mesoregión del Extremo Oeste de Bahía frente a la Mesoregión Oriental de Tocantins.

**Palabras clave:** Región Productiva Agrícola. Reestructuración de la Producción Agrícola. MATOPIBA. Mesoregión Oriental de Tocantins. Mesoregión del Extremo Oeste de Bahía

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### Resumo

Esta pesquisa analisa a marcha pioneira de produtos agrícolas que compõem a contemporânea concentração espacial da produção agrícola nos municípios da Mesorregião Oriental do Tocantins e da Mesorregião Extremo Oeste Baiano, considerando os dados de 2000, 2010 e 2020 disponibilizados na pesquisa de Produção Agrícola Municipal (PAM) realizada pelo IBGE. Precedida de rastreamento bibliográfico sobre o tema e levantamento e organização de banco de dados secundários da PAM, os procedimentos metodológicos serão detalhados no texto. Os resultados identificam produtos que formam a história agrícola desse recorte territorial com acentuada concentração da produção e alteração na área plantada da Mesorregião Extremo Oeste Baiano vis-à-vis a Mesorregião Oriental do Tocantins.

**Palavras-chave:** Região Produtiva Agrícola. Reestruturação da produção agrícola. MATOPIBA. Mesorregião Oriental do Tocantins. Mesorregião Extremo Oeste Baiano.

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### Introduction

This paper analyzes the pioneer march of agricultural products that make up the spatial concentration of agricultural production in the cities of the Oriental Mesoregion of Tocantins and the Far Western Mesoregion of Bahia, considering the data from the historical series, of temporary and permanent crops from 2000, 2010 and 2020, available in the research of Municipal Agricultural Production (PAM) conducted by IBGE.

We are interested in revealing the agricultural aptitude of this region by using the products historically cultivated, evaluating whether it is possible to identify the formation of clusters of cities dedicated to cultivating specific products, causing spatial patterns.

Preceded by a bibliographic research on the theme and a survey and organization of secondary databases made available by PAM, other details of the methodological procedures will be described further on.

The results confirm the existence of products that are present in the agricultural history of this territorial division, even when there are breaks in the calculation of production data for a given year/product. In addition, it is evident the accentuated concentration of production and the main changes in the cultivated area of the Extreme Far West Mesoregion of Bahia vis-à-vis the Eastern Mesoregion of Tocantins.

### **Pioneer occupation of the Oriental Mesoregion of Tocantins and Far West Mesoregion of Bahia.**

Considering the broader geopolitical perspective of the Portuguese colonial space, it is known that until the first half of the 17th century, the Araguaia-Tocantins interfluvial marks the historical process of settlement of a remote region, not very dense, the huge territory, the economy undefined, and the lines of communication and administration were fragile (SCHWARTZ; LOCKART, 2002 apud SANTOS, 2008, p. 66).

Therefore, from the eighteenth century on, where the Eastern Mesoregion of Tocantins is configured today, the processes linked to mining, religious missions and traditional farming and ranching activities stand out in the implementation of mining camps, missionary villages and farms that are the embryos of future cities (BESSA, 2015, p. 10).

The exhaustion of the auriferous alluvial deposits provoked the immediate weakening of the mining activity, but it gave relief to the cattle raising activity that was already expanding in the reflux of that activity to which it served as a means of transportation, food and clothing. The progress of this activity was reinforced by a cattle-raising front coming from Maranhão, from where small cattle breeders moved westward in search of better pastures. This front gave origin, still in the 19th century, to some nuclei such as Porto Nacional, Dianópolis, Pedro Afonso, Araguacema and Miracema do Norte (IBGE, 1991, p. 7).

Simultaneously, an agricultural front from Maranhão was spreading towards the north of Tocantins, in a progressive movement towards Pará and thus, the occupation of the north of this territory was intensified, motivating the formation of small farms for rice production in the extreme north, and the extraction of wood and babaçu, in the south, consolidating the regional commercial support. At the same time, another occupation chain was established towards the southeast of Tocantins, coming from a mining front of people from Maranhão and Piauí, attracted by the discovery of rock crystal in the region of Cristalândia, Pium and Duerê (IBGE, 1991, p. 7).

According to IBGE (1958, p. 541), until the end of the 19th century, extensive cattle raising was predominant in the region, agriculture was of little expression and almost always focused on "basic products which are: manioc, rice, beans, and corn" with emphasis on the cities of Pedro Afonso, Porto Nacional and Peixe dedicated to rice production, located in the Eastern Mesoregion of Tocantins.

For Bessa (2015, p. 16), during the 19th century and until the mid-20th century, most urban embryos in this region were strongly linked to livestock farming as a preponderant activity, but there was strong interest in the production of foodstuffs, "such as corn, beans, rice, cassava, sugar cane, flour, sugar, and brandy" produced in a rudimentary and rarefied way in most of the arraiais and vilas, "which limited commercial activity."

From the middle of the 20th century in the 1960s, the advance of the economic frontier is projected in this region mediated by the opening of the BR-153 or Belém-Brasília highway. The existence of this road in a longitudinal direction pressured the opening of transversal roads from it, redirecting and encouraging the movement of labor and inter and intra-regional migratory flows. The inductive character of the Belém-Brasília road made it possible the implantation and growth of innumerable urban nuclei, grounding and accelerating the structuring of the urban network in Tocantins (IBGE, 1991, p. 8).

It was after 1988, the year in which it became the 26th state of the Federation, that Tocantins saw a great expansion of its road network, especially after the implantation of the new state capital and the project to build its urban centrality. It was essential to incorporate Palmas to the main productive areas of the state, as well as in other directions to integrate in this region, in terms of circulation and economic prospects, the areas with less dynamism as the part east of the Tocantins River and the southeast Tocantinense (BORGES; SOUZA; PEREIRA, 2014, p. 62).

Without any sign of urban life during part of the colonial period, the region of today's West Bahia began its process of occupation and settlement in the early 16th century with the discovery of the mouth of the São Francisco River by André Gonçalves and Américo Vespúcio. At the end of the 16th century and during the entire 17th century, pioneer sertanistas set up corrals along the banks of the São Francisco River and its affluents. In the second half of the 17th century, the general governor of Brazil, Dom João de Lencastre, at the behest of the Lusitanian court, began the process of occupation and foundation of settlements along the routes of the Preto, Grande, and Corrente rivers, tributaries on the left bank of the São Francisco River (ALMEIDA, 1996 apud DA SILVA SANTOS, 2016, p. 137).

Starting in the second half of the 17th century and throughout the 18th century, in the current Far West Mesoregion of Bahia, the large landholdings originating from the sesmarias of traditional families were initially responsible for the highest incidence of corrals along the shores of the São Francisco River, and then this process spread itself to the navigable flows of the rivers Grande, Corrente, and Preto (ROCHA, 1940, p. 14).

Thus, during two and a half centuries of colonization, given the extensive nature of cattle raising, the formation of the incipient urban centers was linked much more to the necessity of creating small commercial trading posts than to a vigorous economy with urban social relations.

In addition, Brandão (2009, p. 55) adds that extensive livestock farming, small-scale agriculture, mineral traffic, and timid but important trade for the local [Geopauta](#), Vitória da Conquista ISSN: 2594-5033, V. 7, 2023, e11657

populations were mainly responsible for the existence of sparse human settlements and roads that worked as an alternative to navigation, but not being able to establish a vigorous network of road links.

For Magalhães et al (2017, p. 16), the incipient agriculture in the region had as its main obstacle the climatic irregularities that harmed the production and commercialization of cotton, rice, and cereals.

Also in this period, rock salt and saltpeter were the main economic sources for the cattle raising activity and for the processing of meat and fish, while rapadura, cachaça, manioc flour, and the diversity of activities carried out by cattlemen, farmers, and boatmen increased the local economy, including also the plant industry, with the use of ubás and igaras for the production of canoes, also benefiting fishing, and the construction industry, with the use of wood, carnaúbas, stipe for stakes, lines, fences and straws (IBGE, 1958) apud DA SILVA SANTOS, 2016, p. 142).

At the end of the 20th century, in the far west of Bahia, the railway connections were made from the navigable ends of the São Francisco River, both through Juazeiro, to the north, and Pirapora, to the south. With these there is "the first integrating moment of the inhabitants of the São Francisco sertão region to the national society" (SANTOS, 2008, p. 32).

According to ANTT (2021), the West-East Integration Railroad - FIOLE (EF-334) was granted to Valec through Law 11.772, on September 17, 2008, and it is around 948 miles long, between Ilhéus/BA and Figueirópolis/TO. The project is divided into three sections: Section I: Ilhéus/BA - Caetité/BA, with a length of 333 miles, Section II: Caetité/BA - Barreiras/BA, with a length of 301 miles, and Section III: Barreiras/BA - Figueirópolis/TO, with a length of approximately of 313 miles, in the revision phase of studies and projects, has a Preliminary License issued by IBAMA.

In fact, especially after the 1960's in Bahia, the Federal Government started a systematic intervention with the construction of important highways, such as the connection of Barreiras with Salvador by BR-242 and, later on, the consolidation of connections with Luiz Eduardo Magalhães, reaching the southeast of Tocantins. The

connection of Barreiras with Brasília was increased by the federal highway BR-135, built in the mid 1950s in rustic conditions, but allowing considerable extensions from Barreiras to Piauí, Santa Maria da Vitória and from there to the northern region of Minas Gerais. Without neglecting the BR-349 connecting centers such as Santa Maria da Vitória, Correntina and Bom Jesus da Lapa, besides the state highway BA-172, articulating the centers of Santa Maria da Vitória, Coribe and Cocos, as well as the stretch of BR-020 connecting the cities of Riachão das Neves with Mansidão (SANTANA SOBRINHO, 2022, p. 9; DA SILVA SANTOS, 2016, p. 150).

It is certain that cattle breeding represents the inductive activity of production relations in this region, but at a later moment subsistence agriculture, almost always for self-consumption, gains expression in production and marks the commercial relations of many municipalities because, according to da Silva Santos (2016, p. 148), local products, such as "rice, beans, dried meat, rapadura, sugar cane molasses" (148), among others, were sold through the port of Barreiras, and from then on, the slow process of specialization of the regional production of "sugarcane, cotton, coconut, rice, beans, manioc and corn started, as an essential complement to the agricultural income of small urban centers" (DA SILVA SANTOS, 2018, p. 32).

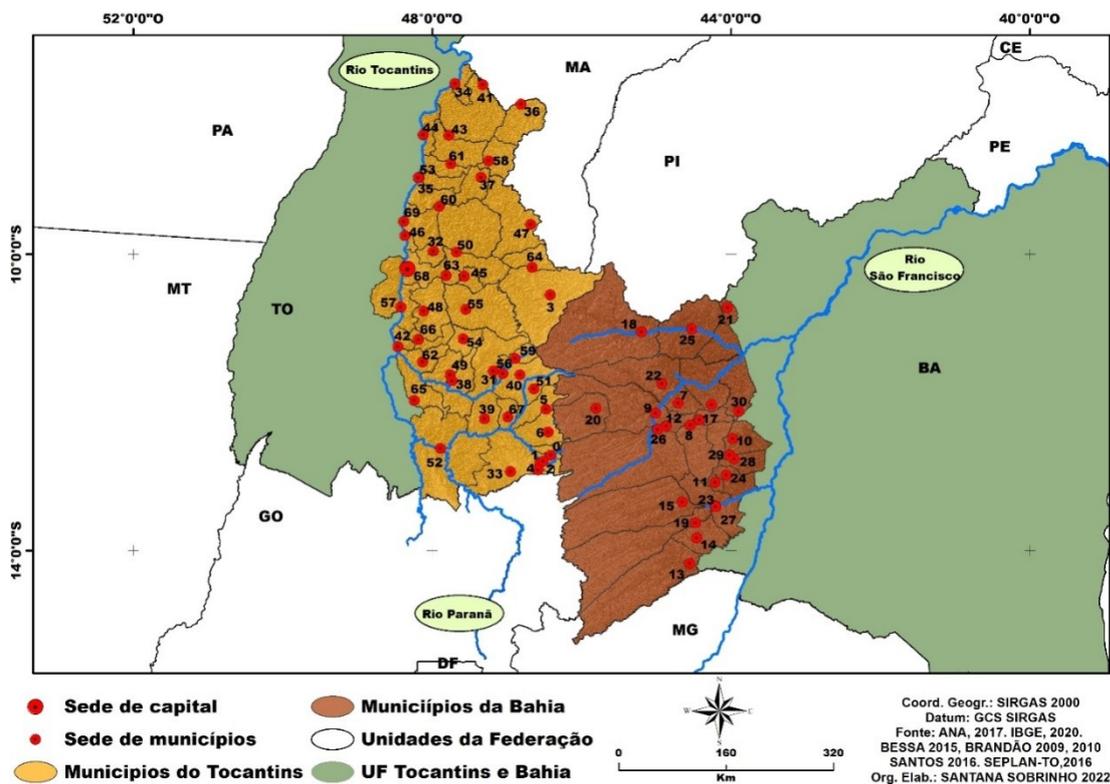
When new practices are inserted in the struggle of places to rupture the existing order, the occurrence of political, social, economic, cultural, and environmental changes are the main carriers of the remodeling of space. In the case of the Bahian Far West region, starting in the 20th century, a rupture in the prevailing historical process has occurred, giving rise to profound transformations with the diversification of the products produced and in the production mode.

The pace of change in land use and occupation in western Bahia between 1985 and 2010 occurred mainly by the very rapid replacement of extensive pastures in fields and cerrados by mechanized agriculture with annual crops intensified by new production technologies, including irrigation. From this context emerges the protagonism of some places to the detriment of others, because the process of modernization of space does not occur in a homogeneous and simultaneous way. In

this case, the position of the state almost always aims to encourage and/or facilitate private investments mostly linked to grain agribusiness.

In order to represent the geographic location, Map 1 and Chart 1 explain the recent delimitation of the territorial scope of this study and list the head cities of the municipalities.

**Map 1-** Location of the territorial cutout with the cities of this study



Source: Own elaboration based on digital databases (IBGE, 2020, BESSA 2015; BRANDÃO 2009, 2010)

**Chart 1-** List of cities on Map 1

Nº	NOME DO MUNICIPIO	UF	Nº	NOME DO MUNICIPIO	UF	Nº	NOME DO MUNICIPIO	UF
0	Aurora do Tocantins	TO	24	Santana	BA	47	Lizarda	TO
1	Combinado	TO	25	Santa Rita de Cássia	BA	48	Monte do Carmo	TO
2	Lavandeira	TO	26	São Desidério	BA	49	Natividade	TO
3	Mateiros	TO	27	São Félix do Coribe	BA	50	Novo Acordo	TO
4	Novo Alegre	TO	28	Serra Dourada	BA	51	Novo Jardim	TO
5	Ponte Alta do Bom Jesus	TO	29	Tabocas do Brejo Velho	BA	52	Paraná	TO
6	Taguatinga	TO	30	Wanderley	BA	53	Pedro Afonso	TO
7	Angical	BA	31	Almas	TO	54	Pindorama do Tocantins	TO
8	Baianópolis	BA	32	Aparecida do Rio Negro	TO	55	Ponte Alta do Tocantins	TO
9	Barreiras	BA	33	Arraias	TO	56	Porto Alegre do Tocantins	TO
10	Brejolândia	BA	34	Barra do Ouro	TO	57	Porto Nacional	TO
11	Canápolis	BA	35	Bom Jesus do Tocantins	TO	58	Recursolândia	TO
12	Catolândia	BA	36	Campos Lindos	TO	59	Rio da Conceição	TO

13	Cocos	BA	37	Centenário	TO	60	Rio Sono	TO
14	Coribe	BA	38	Chapada da Natividade	TO	61	Santa Maria do Tocantins	TO
15	Correntina	BA	39	Conceição do Tocantins	TO	62	Santa Rosa do Tocantins	TO
16	Cotegipe	BA	40	Dianópolis	TO	63	Santa Tereza do Tocantins	TO
17	Cristópolis	BA	41	Goiatins	TO	64	São Félix do Tocantins	TO
18	Formosa do Rio Preto	BA	42	Ipueiras	TO	65	São Valério	TO
19	Jaborandi	BA	43	Itacajá	TO	66	Silvanópolis	TO
20	Luís Eduardo Magalhães	BA	44	Itapiratins	TO	67	Taipas do Tocantins	TO
21	Mansidão	BA	45	Lagoa do Tocantins	TO	68	Palmas	TO
22	Riachão Das Neves	BA	46	Lajeado	TO	69	Tocantínia	TO
23	Santa Maria Da Vitória	BA						

**Source:** Own elaboration based on digital bases (IBGE, 2020)

On one hand, mining and later agriculture and cattle breeding are revealed as economic activities that organize the occupation and settlement of the north of Goiás, and by extension, the space of the current Oriental Mesoregion of Tocantins. On the other hand, where the Extreme West Mesoregion of Bahia is configured today, it is cattle-raising, followed by subsistence agriculture, that hold the preponderant pioneering role in the occupation and organization of the regional space, without neglecting the importance of these activities in the formation of the urban network of this territorial area, presented in Map 1 and Chart 1.

### **Agribusiness and the modernization of agricultural production in productive regions of MATOPIBA**

We are certain that the movement to restructure Brazilian agricultural production through agribusiness has caused the territorial expansion of modern systems of objects and systems of actions advocated by Santos (2006 ). Moreover, the companies that constitute the highly technological agro-industrial network that is established in a particular region directly interfere in the dismantling of the locally and historically woven organic solidarity, which is therefore extremely compromised. By extension, the operational behavior of the agro-industrial networks organizes an overlapping of territorial and social divisions of labor, thus giving rise to a variety of circuits of the agrarian economy.

In the debate about the recent transformations that have been taking place in urban and rural spaces in Brazil, the argument of agribusiness as a path of constant progress and able to reconcile the permanence of traditional regional aptitudes in the face of demands for new specialized products and services is naturalized (ELIAS, 2021). Therefore, these factors have been conditioning the selective specialization of agricultural production under the command of large national and multinational companies, the same ones that are at the forefront of globalized agribusiness networks.

Thus, the "spatial circuits of production" emerge, which organize the formation of "circles of cooperation" from groups of cities dedicated to producing certain products and which often result in regional spatial patterns guided by the concentration of production in certain cities.

Therefore, the creation and delimitation of MATOPIBA materializes a "geographic reality" that partially covers the states of Maranhão, Piauí, Bahia and the whole of Tocantins characterized by the "expansion of an agricultural frontier based on high productivity technologies" (MIRANDA; MAGALHÃES; CARVALHO, 2014, p. 2).

The delimitation of MATOPIBA realizes the implementation of a geographic object that Elias (2011, p. 155) characterizes and defines as "Agricultural Productive Region (APR)".

The RPAs are the new productive territorial arrangements strongly tied to globalized agribusiness and, therefore, guided by the imbrications of the technical apparatus of the agro-industrial networks.

This way, they are composed of both agricultural and urban spaces chosen to receive the most solid private investments, forming the dynamic focus of the agrarian economy, that is, they are areas of diffusion of [superior circuits] of globalized agribusiness (ELIAS, 2011, p. 155).

In the RPAs, the movement to restructure agricultural production systems produces repercussions on the technical and social elements of the agrarian structure,

especially on the technical content of production, the social relations of production, and the land ownership structure.

We are certain that the productive restructuring of agriculture and cattle raising has profound impacts on the non-metropolitan agricultural and urban spaces, which are still undergoing an accelerated reorganization process, since they are beginning to make up new territorial arrangements strongly connected to globalized agribusiness. In this way,

This reality intensifies the refunctionalization of these arrangements and leads to the diffusion of productive territorial specializations, denoting countless selectivities, whether in the organization of production or in the dynamics of the respective spaces. In the same way, the RPAs are the new spaces of exclusion and of all sorts of socio-spatial inequalities (ELIAS, 2011, p. 156).

It is not for another reason our interest in representing the concentration of agricultural production in the cities of the Eastern Mesoregion of Tocantins and in the Far West Mesoregion of Bahia, to identify the existence of geographic patterns forming contiguities or spatial fragmentations, considering the volume of each product produced in there. Besides, it is known that transformations in modern agricultural spaces occur, mainly, with expansion of planted areas and intensification of the use of advanced technologies that accelerate the operation of production systems.

In this regard, it is important to understand how production is organized in the cities of the mesoregions analyzed considering the diversity of products produced, because each one has its own requirements for inputs, services, workforce, technologies, machinery capital, etc., further highlighting the distinction between the places.

### **Methodological Path**

The methodology was structured in the qualitative approach to perform the tracking of theoretical and conceptual contributions that guide the debate on [Geopauta](#), Vitória da Conquista ISSN: 2594-5033, V. 7, 2023, e11657

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agribusiness and its role in restructuring agricultural production in Brazil, as well as the developments that mark the recent spatial transformations caused by this complex production system. On the other hand, the quantitative approach showed the need to survey and treat secondary data with the use of geoprocessing to represent the productive volumes in the cities of the Mesoregions studied, enabling the identification and analysis of the formation of geographic patterns considering the final volume of each product produced, and the repercussions on the planted areas of the cities.

This study considered the set of data organized by IBGE to compose the survey entitled Municipal Agricultural Production (PAM). The results gather for the entire National Territory a set of 64 agricultural products in which 31 of them are temporary crops, and 33 permanent.

The charts available by IBGE in Excel xlsx format contain data on the area planted or to be harvested, harvested area, quantity produced, average yield, and production value of temporary and permanent crops.

For the elaboration of the cartographic documents, initially it was performed adjustments Chart 5457 of PAM eliminating unnecessary information, assigning the value 0 (zero) for the absence of quantity produced per period, besides selecting the main products of the agricultural history of this region composed by cotton, rice, banana, sugar cane, beans, cassava and corn, based on Da Silva Santos (2018) and Bessa (2015). In possession of Chart 5457 of PAM, it was observed that the production of cotton is almost nonexistent for the cities of the Eastern Mesoregion of Tocantins in all periods, therefore, opting not to be considered in the analyses of planted area and quantity produced in the studied territorial clipping.

It should be noted that PAM is integrated with the Systematic Survey of Agricultural Production (LSPA). Thus, all data on agricultural products investigated by the LSPA during the crop cycle migrate automatically to the MAP at the end of the calendar year on December 31, which constitutes an annual consolidation of the monthly data obtained by that survey. With annual periodicity and wide coverage,

PAM reaches Large Regions, Units of the Federation, Mesoregions, Microregions, and Cities throughout Brazil.

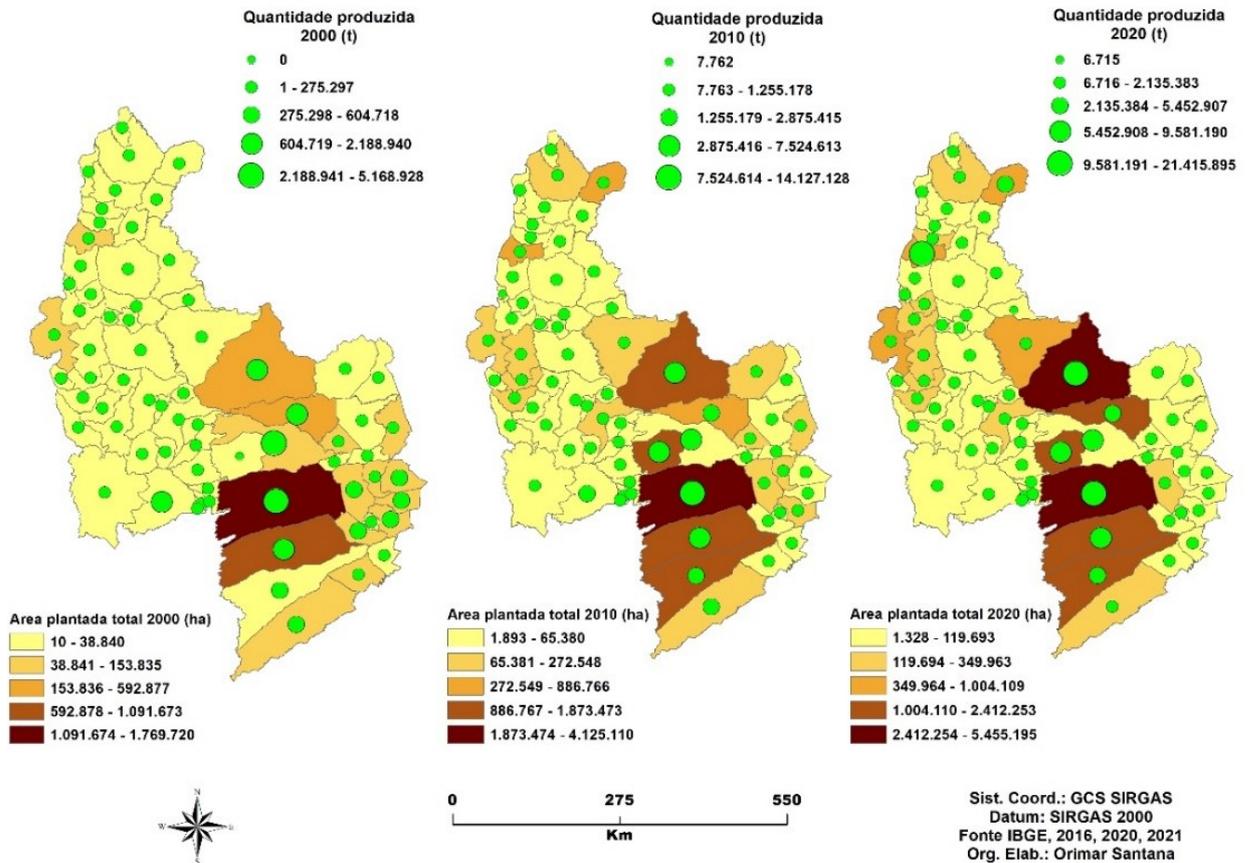
### **Presentation and discussion of the agricultural production of the Oriental Mesoregion of Tocantins and of the Far West Mesoregion of Bahia**

In the preceding considerations about the pioneer occupation movement of this region, it is clear that subsistence agriculture marks the economic reality of the precursor communities of the occupation of these regions concentrated almost always on the cultivation of cotton, rice, banana, sugar cane, beans, cassava, and corn, among others, thus composing the matrix of the agricultural production framework highlighted by Da Silva Santos (2018) and Bessa (2015)

It is recommended to consult Map 1 and Chart 1 to identify the cities and to better understand the spatial and temporal reality of agricultural production in these Mesoregions. This way, Map 2 represents the decennial periodization of agricultural production considering the total planted area and the quantity of production in the decade of 2000, 2010 and 2020 from the selection of products already highlighted.

Regarding the amount of production in the period, there was an increase of 36.58% in the amount produced between 2000 and 2010, increasing considerably to 65.96% between 2010 and 2020, making a final increase of 33% in the total amount of production of the cities. In addition, there was also an increase in the total planted area of 42.9% between 2000 and 2010, increasing to 75.6% between 2010 and 2020. It is equivalent to say, therefore, that the increase in production followed very closely the final increase of 32% of the planted areas in the period.

**Map 2-** Spatial and temporal representation of the agricultural production of the cities 2000/2010/2020



Source: From IBGE, Digital Meshes (2016, 2020) and PAM (2021)

Based on the products historically produced in these regions and considering the data made available by PAM 2021, the sequence of cartographic documents presented makes it possible to understand the movement of transformations considering the main agricultural products that characterize the agricultural aptitude of the region.

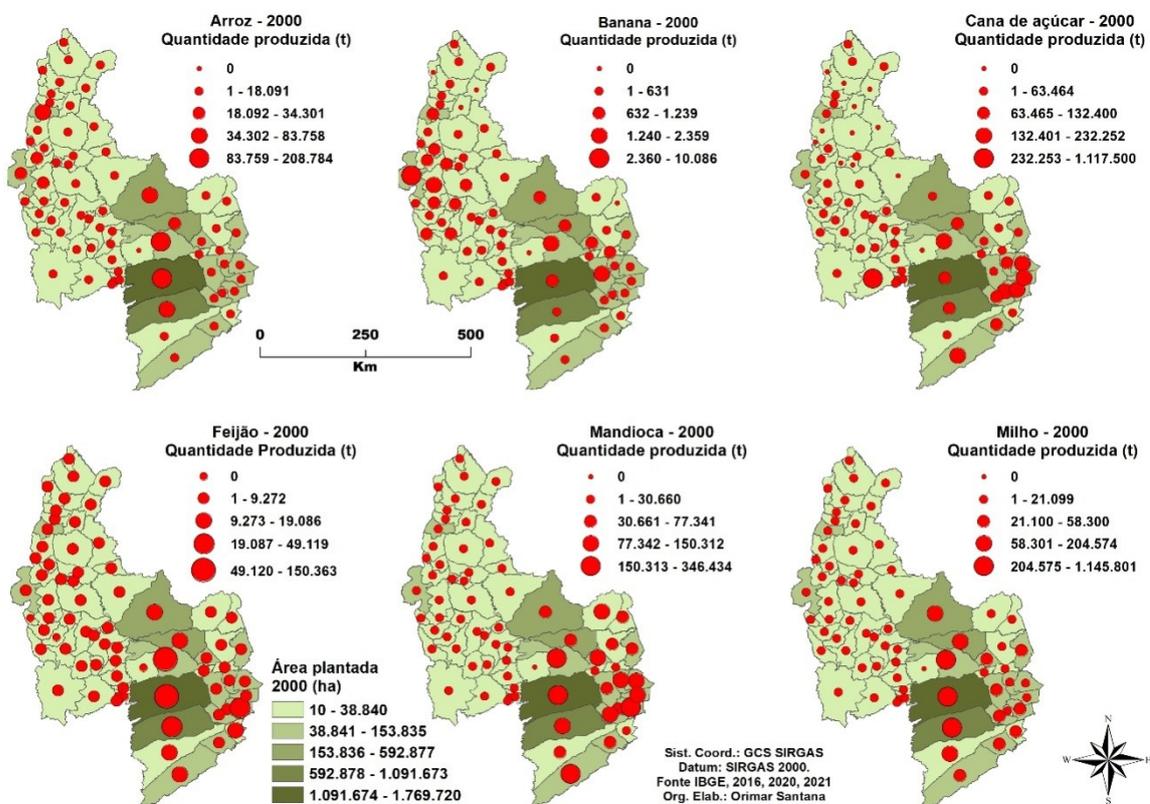
In Map 3 the main concern is to highlight the commodities, according to da Silva Santos (2018) and Bessa (2015), that mark the regional agriculture considering the total area devoted to planting and the amount produced.

It is quite clear that all the cities are dedicated, to a greater or lesser extent in the production of all considered products, however, the production is strongly concentrated in the cities of the Far West Mesoregion of Bahia, where there is also a large number of cities with planted area exceeding 153,000 ha with special emphasis

on the production of rice, beans, cassava and corn. Differently from Tocantins, where almost all the cities have a planted area between 10 and a little over 38,000 ha, and only two of them with a planted area above this threshold, the most expressive production is of banana, above 2,000 t and sugar cane in only one city exceeding 1,000,000 t.

Therefore, the spatial pattern that is configured on this occasion is expressed in the broad set of cities in Tocantins, forming a relatively compact block of low dedication of areas for planting with direct repercussions on the quantity produced. Differing to a large extent from the west of Bahia, with a larger number of cities with considerable differences in areas available for planting, configuring diversity in the spatial pattern of both the areas and the productive size.

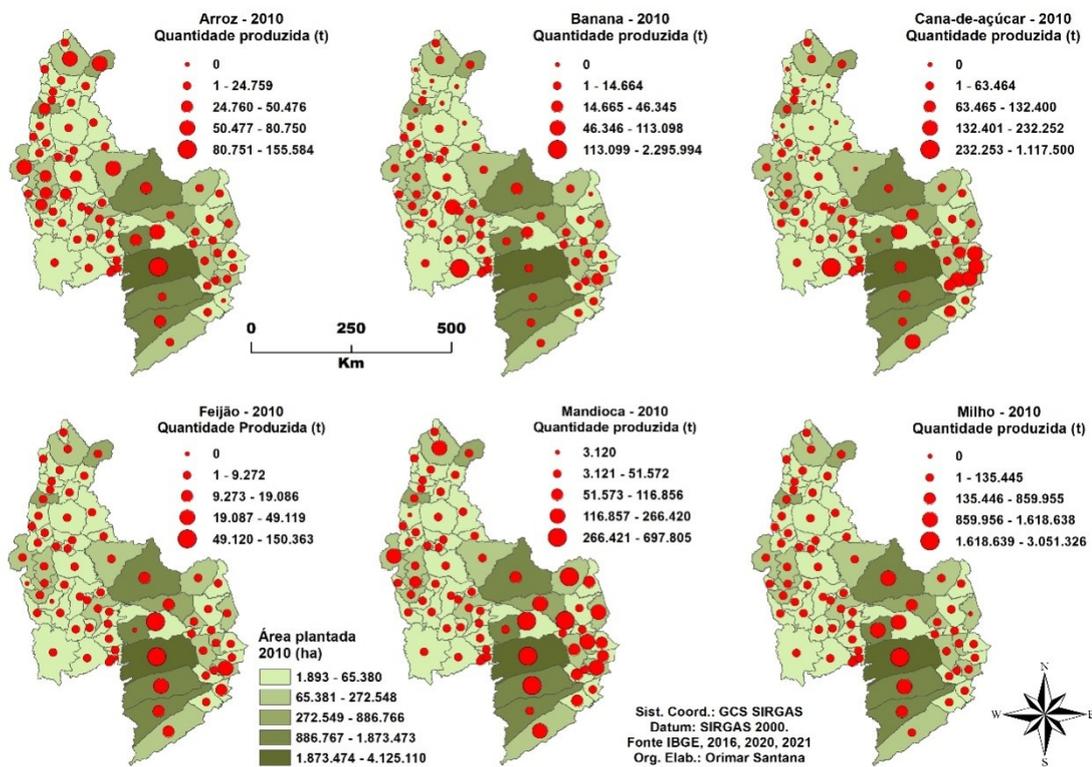
**Map 3-** Total planted area and the quantity produced of selected products – 2000



Source: From IBGE, Digital Meshes (2016, 2020) and PAM (2021)

In order to represent the production of the main agricultural products in the region in the decade of 2010, Map 4 shows the changes that occurred in the minimum planted area that was 10 ha at the beginning of the decade of 2000 rising to over 1,800 ha in 2010, similarly the increase in the planted area is revealed in the maximum threshold that in 2000 was more 1,700,00 ha rising to over 4,000,000 ha at the end of the decade of 2010, thus representing an increase of 42.8% of the total planted area, between the decades 2000/2010. While the Far Wes Mesoregion of Bahia remains in command of the area planted and the amount produced of rice, beans, cassava and corn in 2010, without expressing major changes in the area planted in this period, it is possible to observe considerable increase in the production of some products in the Oriental Mesoregion of Tocantins as is the case of rice in 4 cities with production above 50,000 t, also highlighting the production of banana in the southeast of this Mesoregion exceeding 113,000 t and cassava in cities in the central and northern area exceeding 100,000 t.

At this stage of the analysis, the spatial pattern is the few alterations in the areas available for planting in the cities of Tocantins, where only seven of them present an increase in the planting areas with direct consequences on the quantities produced of traditional goods of the region. On the Bahia side, diversity is expressed both in the variety of plantation areas and in the quantity produced of the same products without, however, forming large scale contiguities.



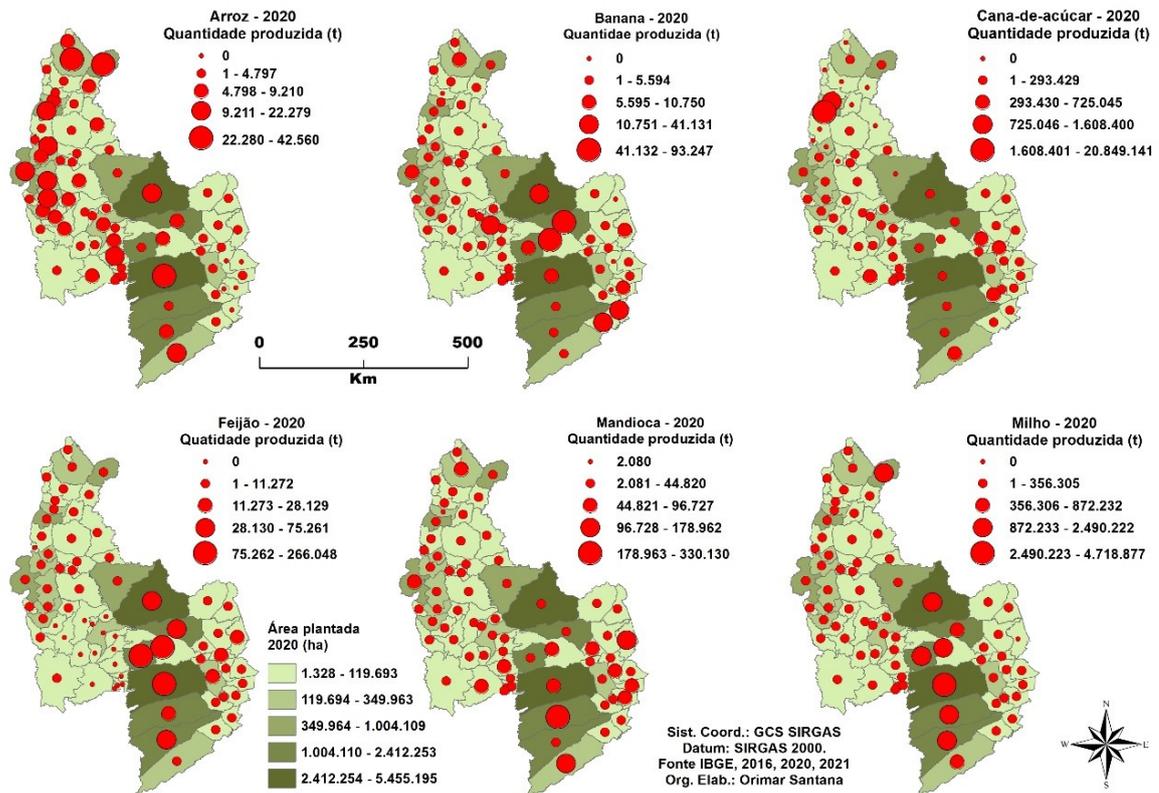
Source: From IBGE, Digital Meshes (2016, 2020) and PAM (2021)

Significant differences can be noted in Map 5 regarding the expansion of the total planted area by 75.6% between 2010 and 2020, especially in the cities of the Far West Mesoregion of Bahia. Regarding the quantities produced, in spite of the productive command of the Bahian region, especially banana, beans, manioc and corn, on the Tocantins side, without large expansions in the planted areas, there is a significant increase in the production of rice in cities in the northern part of this mesoregion, exceeding 42,000 tons, sugar cane exceeding 20,000,000 tons, and corn producing more than 2,000,000 tons.

However, regarding the formation of spatial patterns by the concentration of production in this period, the territorial configurations that are expressed by changes in the size of the planted areas in parallel with the quantities of production in this territorial cutout reveal, on the one hand, the permanence of the Tocantins side without expansion of planted areas with direct impact on the amount of production, except for rice in 2020, and, on the other hand, the dynamic movement in the cities

on the Bahia side, with systematic expansion of planted areas and thus reaching the growing increase in the amount of production of the products in question.

Map 5- Total planted area and quantity produced of selected products – 2020



Source: From IBGE, Digital Meshes (2016, 2020) and PAM (2021)

The aforementioned reveals, therefore, the conditions and means by which the restructuring of agriculture is projected in this territorial area, and also the possibilities of using PAM data to produce cartographic representations capable of showing the spatial patterns that are formed in the region, whether by the intensity of the concentration of agricultural production or by the changes in the areas destined for planting.

## Final Considerations

It can be said that initially mining and extensive cattle raising, followed by subsistence agriculture, forged the discontinuous settlement of this territory and

implemented the cultivation of products that continue to delineate the agricultural aptitude of this region.

In this sense, cotton, rice, bananas, sugar cane, beans, manioc, and corn represent the productive matrix of the regional agriculture and that in the long term put pressure on the producing agents and land owners to expand the areas for planting, often causing significant differences in the quantity produced by the cities.

Almost always, the quantitative results of this production can organize a diversity of hierarchical levels among the municipalities, forming spatial patterns either by the transformations in the planting areas or by the total amount produced or individualized by products, as we have tried to represent here.

We are certain that the restructuring of agricultural production in this region occurs fundamentally through the expansion of planting areas and the insertion of new products to be cultivated in order to diversify the agricultural profile of the region. Therefore, the results presented here indicate the need for continued research that can identify changes in the portfolio of agricultural products in the region.

From the results it is clear the origin of the regional agricultural aptitude marked mainly by the production of cotton, rice, banana, sugar cane, beans, manioc and corn, but the insertion of this region in the interests of the advancement of the agricultural frontier presses for the diversification of the products produced and even disregards important products such as cotton, which has no tradition of production in the cities of Tocantins and was, therefore, excluded from the cartographic representations.

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Authors' contribution:

Author 1: Literature search, elaboration, cartographic production and discussion of the results.

Author 2: Supervision, final analysis of results and text revision.