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Rural agroindustries, public policies and regional development: a profile of the Brazilian agroindustrialization based on the 2017 agricultural census data

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Abstract
The objective of this work was to analyze the data on rural agroindustry (RAG) from the 2017 Agricultural Census in order to build a profile of the experiences in Brazil, in the macro-regions, and in the two types of agriculture (family agriculture - FA and non-family agriculture - NFA). The methodology used was quantitative, using data on rural agroindustry from the 2017 Agricultural Census, obtained from the website of the Brazilian Institute of Geography and Statistics (IBGE), from the Automatic Data Retrieval System (SIDRA). The results and conclusions point to a profile of RAGs more present in the FA establishments, although the highest production and sales values are in the NFA. The FA RAGs have higher values of their production that is self-consumed by families and smaller production scales in relation to the NFA AGRs. The Northeast region has the largest number of RAGs, in both types of farming, while the Southeast has higher production and sales values and the South has more self-consumption. Given the importance of the agroindustries' activity for the supply of healthy and sustainable food to consumers, it would be up to the State to give more support with public policies to these initiatives, in order to increase their management autonomy, generate more jobs and income, and build better markets for the experiences.
Keywords: Food. Rural agroindustries. Short chains and foods markets. Regional endogenous development.

Agroindústrias rurais, políticas públicas e desenvolvimento regional: um perfil da agroindustrialização brasileira com base nos dados do Censo Agropecuário 2017

Resumo

O objetivo deste trabalho foi analisar os dados da agroindústria rural (AGR) do Censo Agropecuário 2017, de forma a construir um perfil das experiências no Brasil, nas macrorregiões e nos dois tipos de agriculturas (familiar - AF e não familiar - ANF). A metodologia utilizada foi quantitativa, se utilizando dos dados sobre agroindústria rural do Censo Agropecuário 2017, obtidos no site do Instituto Brasileiro de Geografia e Estatística (IBGE), a partir do Sistema Automático de Recuperação de Dados (SIDRA). Os resultados e conclusões apontam para um perfil de AGRs mais presente nos estabelecimentos da AF, embora os maiores valores de produção e de venda estejam na ANF. As AGRs da AF possuem maiores valores de sua produção que é autoconsumida pelas famílias e menores escalas de produção em relação as AGRs da ANF. A Região Nordeste é a que possui maior número de AGRs, nos dois tipos de agriculturas, enquanto o Sudeste possui maiores valores de produção e de vendas e o Sul maior autoconsumo. Dada a importância da atividade das agroindústrias para o fornecimento de alimentos saudáveis e sustentáveis aos consumidores, caberia ao Estado destinar mais apoio com políticas públicas a estas inciativas, no sentido de aumentar sua autonomia de gestão, gerar mais ocupações e renda e construir melhores mercados para as experiências.

Palavras–chave: Alimentação. Agroindústrias rurais. Cadeias curtas e mercados alimentares. Desenvolvimento regional endógeno.

Agroindustrias rurales, políticas públicas y desarrollo regional: perfil de la agroindustrialización brasileña en base a los datos del censo agrícola 2017

Resumen

El objetivo de este trabajo fue analizar los datos de la agroindustria rural del Censo Agropecuario 2017, con el fin de construir un perfil de las experiencias en Brasil, en las macrorregiones y en ambos tipos de agricultura (familiar - AF y no familiar - ANF). La metodología utilizada fue cuantitativa, utilizando datos sobre agronegocios rurales del Censo Agropecuario 2017, obtenidos del sitio web del Instituto Brasileño de Geografía y Estadística (IBGE), del Sistema Automático de Recuperación de Datos (SIDRA). Los resultados y conclusiones apuntan a un perfil de AGR más presente en los establecimientos de AF, aunque los mayores valores de producción y ventas se encuentran en el ANF. Los AGR de AF tienen valores de producción más altos que son autoconsumidos por las familias y escalas de producción más pequeñas en comparación con los AGR de ANF. La Región Noreste tiene el mayor número de AGR en ambos tipos de agricultura, mientras que el Sudeste tiene mayores valores de producción y ventas y el Sur tiene un mayor autoconsumo. Dada la importancia de la actividad de las agroindustria para el suministro de alimentos saludables y sostenibles a los consumidores, correspondería al Estado brindar más apoyo con políticas públicas a estas iniciativas, con el fin de aumentar su autonomía de gestión, generar más ocupaciones e ingresos y construir mejores mercados para las experiencias.

Palabras clave: Alimentación. Agroindustrias rurales. Cadenas cortas y mercados de alimentos. Desarrollo regional endógeno.

1 Introduction

The modernization of agriculture was the paradigm that guided agricultural supply since the 1970s. It was based on technology to increase the productivity of areas and crops; however, it generated serious social problems (for example, rural-urban migration) and environmental degradation with the way it was implemented in the countryside. On the food consumption and distribution side, we have a food

system concentrated around large agro-industrial corporations, with long distribution chains that provide highly processed products (SILIPRANDI, 2015). These food products have generated several Non-Communicable Food Diseases (NCFDs) among consumers and who are not concerned with the environmental sustainability of their practices, for example, in helping to meet the Sustainable Development Goals (SDGs) (PLOEG, 2008; SANTOS, 2008; SILIPRANDI, 2015).

Facing this questionable scenario from several angles, alternatives of production - distribution - consumption have emerged that are more sustainable in face of the new challenges around the construction of healthy food and diets in the 21st century. One example is the agroindustries in rural areas, which are understood as a strategy for social reproduction of farmers, especially family farmers, who are predominant in the experiences. Agroindustries also reflect the diversity existing in Brazilian agriculture and in rural and regional development processes, given the wide range of recipes, foods manufactured, elaboration processes, artisanal ways of doing things, mobilized knowledge, regional foods marketed, among other specific aspects that are remarkable (SCHNEIDER, 2009; PERONDI; BEAL; GAZOLLA, 2019).

Rural agroindustries are farmers' initiatives that produce artisanal foods, made with fresh ingredients, based on the local and regional cuisine of the populations, and that have ecological formats, in some initiatives. These foods are commercialized through short chains[1] and regional food markets, which reduce the number of agents involved in distribution, shortening the distances the food travels, and increasing farmers' earnings. Furthermore, these agroindustries generate employment, occupations, and income in rural regions and spaces, since the value that the elaboration adds to the food enables greater economic gains for farmers (GAZOLLA et al., 2012; BASTIAN et al., 2014).

It is because of these roles that rural agroindustries play for regional development that the experiences of food elaboration should be more valued by the State. However, what can be observed in the last years is the depreciation and even extinction of several public policies that supported agroindustries, for example, the Agroindustrialization Program (PAF), of the former Ministry of Agrarian Development (MDA), and also the state programs, such as the ones that used to exist in the three southern states. What still remains are the low accesses to the National Program for the Strengthening of Family Agriculture (PRONAF), in its Agroindustry and Food modalities, the Technical Assistance and Rural Extension policy (ATER), but with low coverage among farmers and, in some places, initiatives of municipalities that value the elaboration and sale of agroindustrialized food, maintaining programs to support the experiences of the farmers (GAZOLLA; SCHNEIDER, 2014; WESZ JUNIOR, 2017).

According to the Brazilian Institute of Geography and Statistics (IBGE, 2019, p. 35) rural agroindustries are formed by food processing activities with their own or third-party raw materials, with family or hired labor, and with the destination of the

[1] Short supply chains are alternative marketing channels to the hegemonic agrifood system, which operates on a global scale and needs many intermediary agents between producers and consumers for its operation. In this system, the relationship between those who produce and those who consume is broken and replaced by industries and supermarkets, causing the loss of identity and provenance of foods that are transformed into products of global markets (GAZOLLA; SHCNEIDER, 2017). The hegemony of these agri-food markets forms what Ploeg (2008) characterizes as "food empires," a superstructure of globalized markets that progressively reorganizes society and nature aimed at maximizing profits.

final product made by the farmer. Waquil et al. (2014) emphasize that one of the objectives of agroindustries is to obtain greater exchange value for the products, in order to increase the income level of the production units. For Gazolla and Schneider (2017), the family agroindustry is an alternative for these units to insert themselves in consumer markets with good quality products that ensure not only increased income for farmers, but also food and nutritional security for local and regional communities.

The objective of this paper is to analyze the data on rural agroindustries (RAGs) from the 2017 Agricultural Census, in order to build a profile of the experiences in Brazil, comparing the RAGs in the five macro-regions and in the two types of agriculture (family agriculture - FA and non-family agriculture - NFA). To a lesser extent, the lack of public policies that help to weaken agroindustries is also problematized, and their importance for regional development processes in the places where agroindustries operate is highlighted. The data used is quantitative and comes from IBGE, from the 2017 Agricultural Census. The various indicators on RAGs were taken from the online database called the System for Automatic Data Retrieval (SIDRA/IBGE).

This work is divided into three sections, besides this introduction and the final considerations. The first briefly reviews the literature on the topics of endogenous regional development, public policies for agroindustrialization, and agroindustries. The second presents the methodology of the research, and the third describes and analyzes the results of the RAGs, in an approach that privileges the scrutiny of macro-regional data (five regions of Brazil) and by the two types of agricultures (FA and NFA).

2 Agroindustries, endogenous regional development and public policies

Rural agroindustries (RAGs) are food processing units that use their own or third party raw materials, may have family or contracted labor, and usually destine production to markets in an autonomous way. Agroindustries with hired labor usually have a larger scale of production due to the availability of land and resources such as machinery and equipment. The IBGE definition suggests that rural agroindustry can be present both in family production units, but also in units with non-family management and labor logic.

In many cases, agroindustries start in the farmers' kitchens preparing food for the family's own consumption. Only after some time do they grow in scale and start to build food markets outside the borders of the production units, gaining the tastes of consumers, assuming the assumptions of food legislation (own building, facilities, packaging) and becoming social and economic enterprises for many farmers and regions (MIOR, 2005).

For Gazolla and Schneider (2017) the family agriculture agroindustry is an alternative for family agriculture to be able to insert itself in consumer markets with good quality food that ensures not only an increase in income for farmers but also healthy diets for consumers. The family farm agroindustries have the objective of obtaining a higher exchange value for the products in the markets, as well as satisfying the family's consumption needs. Moreover, if the sale of these foods occurs directly to consumers, the income of farmers in short circuits tend to be higher, because in long chains the costs of distribution, intermediation, and third parties increase (WAQUIL et al., 2013).

For consumers, the experience of buying food directly from family farmers is important for building healthy diets. The consumer trends of the 21st century show that people have become increasingly concerned with ensuring the delivery of good quality food, rich in nutrients and that does not harm the environment. This new generation of thoughtful and politicized consumers is concerned with choosing foods that share the social values of the region, with the preservation of the environment, and production in accordance with the precepts of worker dignity. In addition, for foods that have their raw material certified, the knowledge of the origin of the food assures the consumer that there are no chemical elements harmful to his health (except in cases where the health legislation requires the addition of preservatives, as is the case of some sausages) (GAZOLLA; SCHNEIDER, 2017; SONNINO, 2019).

The consumption of local or regional foods, commercialized through short chains, is the response of a part of the population that is not satisfied with the proposal of the hegemonic food system, as well as an opportunity to promote the endogenous development of a region or territory. The agglomeration of organizations with common interests and markets can generate a cooperative environment that expands regional production and consumption. The retention of the economic surplus generated by the local economy leads to an increase in employment, occupations, production, and local and regional income, enabling endogenous development (AMARAL FILHO, 2001).

Within the notion of endogenous regional development, agroindustries play several roles, e.g., foster knowledge, skills, services, reduce costs of various activities, and increase the capacity of food production and commercialization through short chains and local markets. Agroindustries generate local economic movement, employment, occupations, income, and supply good quality food to the urban consuming population. Thus, agroindustries strengthen economic, social, and environmental activities, generating endogenous regional development processes in the places where they are immersed. In many places and regions, such is the quantity of rural agroindustries operating that some authors have talked about agroindustrial clusters of these enterprises, or even the existence of Local Productive Arrangements (LPAs), for example, as it happens in the Middle Alto Uruguay Region of Rio Grande do Sul (MALUF, 2004; ADMAU, 2021).

Due to these roles that RAGs have for regional development processes, especially in the last two decades, several public policies have been implemented by the State, at different territorial levels, in order to strengthen the enterprises. As emblematic examples, one can mention the Agroindustrialization Program (PAF), of the former Ministry of Agrarian Development (MDA), the PRONAF Agroindustry and Food, the ATER policy, and the state initiatives in the South of the country, such as the Farmer Factory Program (Fábrica do Agricultor) in Paraná, Desenvolver in Santa Catarina, and the Family Agroindustry Program (PAF) in Rio Grande do Sul (WESZ JUNIOR, 2017).

Although these public policies have received several criticisms, for example being aimed at the already established and larger RAGs, not creating new ones nor supporting the weaker ones; allocating resources, in the case of PRONAF Agroindustry, to medium and large cooperatives, but also to business organizations; foster the insertion of RAGs in formal consumer markets so that they internalize food standardization processes, disproportionate scale increases (in relation to the size of

the household and the raw materials produced), and indebtedness of several enterprises due to lack of payment capacity for loans taken out, among other criticisms that studies have pointed out (GUIMARÃES; SILVEIRA, 2010; GAZOLLA; SCHNEIDER, 2014).

Even with these limits, the public actions that were implemented were important for many agroindustries to make their food manufacturing structures viable, such as building construction and the acquisition of machinery and equipment. Also for the formalization of the enterprises, there was the support of technical teams, purchase of packaging, reformulation of some restrictive food legislations (Unified System of Agricultural Health Care - SUASA at a national level); in Rio Grande do Sul and Paraná, the Unified State System of Family, Artisan, and Small Farming Health (SUSAF); the implementation of the Art Seal and the construction of labels, seals, and local/regional brands, for example, the Sabor Gaúcho seal in RS. On a third front, these policies managed to open new food markets and commercialization channels for agroindustries, such as family agriculture and/or agroindustry fairs, National Fair of Family Agriculture and Agrarian Reform (FENAFRA), and the formation of inter-municipal consortiums to support agroindustries on several fronts (RAUPP, 2009).

These results of the public policies that have occurred in some regions highlight the importance of the State in supporting agroindustrialization processes of farmers, especially family farmers, because there are more initiatives to add value in this type of agriculture, as the Agricultural Census data show (both in 2006 and 2017) and because they are more socioeconomically fragile experiences. In addition to the strengthening of initiatives being fundamental to family farmers, they are also fundamental to regional development processes, as discussed above, and to consumers, who, through short chains and local markets, can have access to healthy food for their diets.

Currently there are no national public policies for rural RAGs (with the exception of PRONAF Agroindustry), and not even the aforementioned state initiatives are active. This represents a loss of economic dynamism and development opportunities for the regions. What we have is the support of some municipalities that still value agroindustrialization as a local development strategy, for example, the policies implemented in Criciumal/RS, Francisco Beltrão/PR, and in the Chapecó/SC region. In the latter mentioned, the actions occur especially via the Association of Small Farmers of Western Santa Catarina (APACO), which created a specific cooperative central to support farmers in this regional agro-industrial development strategy (the Central Union of Family Agroindustry Cooperatives - UCAF), an example of collective and public-private organization to strengthen agroindustries on several fronts (APACO, 2021).

3 Research Methodology

The Agricultural Census calls rural agroindustry (RAG) those agricultural establishments where there is transformation of raw materials, own or purchased, in own facilities and that the final product was destined (marketed) by the farmer. For the 2017 Census, AGR can be in both family agriculture (FA) and non-family agriculture (NFA).

Decree No, 9.064, dated May 31, 2017 underpins the concepts used in the 2017 Agricultural Census (BRASIL, 2017). According to this, family agriculture is that which uses family labor or has few hired helpers; has a total area smaller than four fiscal modules; family income mostly originates from agricultural activities performed on the establishment and management is done by the family itself. Non-family farms, on the other hand, have hired labor and the decision-making processes are coordinated by the farm manager or professional managers who are also hired (agronomists, veterinarians, and administrators). The NFA also use machines, equipment, and other technologies to a greater extent, and have larger land areas and production scales.

Understanding the differences between RAGs in the two types of Brazilian agriculture is important, and the analysis undertaken in this paper focuses on this comparison. In addition, the methodological and analytical design of the paper also seeks to verify the differences in RAG data among the five Brazilian macro-regions (North, Central-West, Southeast, Northeast, and South), due to the existence of regional disparities in relation to RAGs.

The data for this research were obtained from IBGE, more specifically from the Automatic Data Recovery System (SIDRA)[2], which is an online portal in which IBGE makes available several surveys conducted by the institute, one of them being the Agricultural Censuses, from which the text explores indicators of rural agroindustry, according to indicators placed below in the text, containing the number of tables that the data were taken from SIDRA/IBGE:

- Table 6960 - Total number of establishments;
- Table 6960 - Value of rural agroindustry production;
- Table 6960 - Value of rural agroindustry product sales;
- Table 6960 - Number of rural agroindustry establishments
- Table 6960 - Value of family and non-family agroindustry production;
- Table 6960 - Value of sales of family and non-family agroindustry products;
- Table 6960 - Land status of the producer;
- Table 6960 - Economic activity groups;
- Table 6906 - Total area groups;
- Table 6961 - Types of processing units;
- Table 6961 - Origin of the technical orientation received.

The topics present the list of indicators that were selected from the Agricultural Census 2017, due to their relevance for the analysis of the profile of rural agroindustries in Brazil, in the macro-regions and in the two types of agriculture. From the data obtained from SIDRA/IBGE were organized in Microsoft Office Excel software, where analysis techniques based on descriptive statistics were applied and the tables used in the text were built.

Therefore, the methodology of this work is based on the exploration of data from the total of products considered by IBGE as coming from rural agroindustry, which are thirty-two in total (32): sugar cane brandy, cotton lint, cottonseed, rice, roasted coffee beans, ground roasted coffee, cashew nuts, cream, jams and jellies, manioc flour, cornmeal, tobacco, processed vegetables and legumes, liqueurs, butter, vegetable oils bakery products, fruit pulp, cheese and curd, rapadura, fruit

[2] Census data available in: https://sidra.ibge.gov.br/pesquisa/censo-agropecuario/censo-agropecuario-2017

juice, grape wine, beef and veal, pork, other animal meat, sun dried meat, sausages, hides and skins, charcoal, wood products, other products, gum or tapioca.

4 Rural agroindustries: an analysis of their macro-regional profile and by the two types of agriculture

In this section, the analysis of the data on rural agroindustry is presented, The description of the data and the analysis performed is subdivided into three subsections. In the first, the analysis of the RAGs in the five regions is developed. In the second between the two types of agricultures, the FA and the NFA. The third subsection of the results discusses the indicators of the RAGs in terms of the groups of economic activities in which the agroindustries are present, types of facilities, land area, and the ATER received.

4.1 The RAGs in the five Brazilian macro-regions

Table 1 shows the number of agricultural establishments with RAGs in the five macro-regions. The 2017 Census identified the presence of 852,639 establishments working with food processing, which represent 16.8% of the establishments in the country. The Northeast Region stands out with the largest number of production units, representing 37.3% of the country's establishments. The South and North Regions represent, respectively, 23.8% and 22.2%, ranking second and forming, if added together, almost 50% of the Brazilian agroindustries. Meanwhile, the Midwest Region has the lowest number of establishments with agroindustries, only 3.7% of the total.

Table 1: Brazil and Regions - Number of agricultural establishments with rural agroindustry

Brazil and regions	Establishments (Un.)	%
Brazil	852,639	100.00
Northeast	318,402	37.34
South	203,560	23.87
North	189,677	22.25
Southeast	109,442	12.84
Midwest	31,558	3.70

Source: Agricultural Census 2017 (IBGE, 2017).

This spatial distribution of RAGs concentrated in the Northeast and South Regions follows the macroregional distribution of FA in the national territory. According to data from the Agricultural Census (IBGE, 2017), of the 3,897,408 total farming establishments (corresponding to 76.83% of the total number of establishments nationwide), they are predominantly distributed in the Northeast Region (47.18%), followed by the Southeast (17.6%) and South (17.08) with very close values. The Midwest region has a higher concentration of medium and large farming establishments, a factor that can explain the lower incidence of agroindustries in the region. These values are very close to those evidenced by Kageyama, Bergamasco and Oliveira (2014) in an analysis of data from the 2006 Agricultural Census.

The production values of agroindustries in Brazil and regions are presented in Table 2. The data show that although the largest concentration of establishments with agroindustries is in the Northeast, this region is in second place when it comes

to the value of production. In first place is the Southeast Region, which holds 32% of the total value of production in the country, followed by the Northeast with 21.2%, the Midwest with 18.8%, the South with 15.6%, and the North with 12.2%.

Table 2: Brazil and Regions - Value of rural agroindustry production (one thousand reais)

Brazil and regions	Production value (R$)	%
Brazil	14,826,754.00	100.00
Northeast	4,749,278.00	32.03
South	3,154,384.00	21.27
North	2,797,878.00	18.87
Southeast	2,314,663.00	15.61
Midwest	1,810,552.00	12.21

Source: Agricultural Census 2017 (IBGE, 2017).

The average productive scale of Brazilian RAGs is R$ 17.38 thousand/establishment, but it is very random among regions. For example, the RAGs in the Northeast are larger in numbers, but smaller in productive scale within the farms (R$ 9.90 thousand/establishment), besides many of them possibly having a role only for the farmers' food security processes, through self-consumption production, with little sale of surpluses. The Southeast Region has fewer RAGs in numbers, but their productive scale is larger (R$ 88.65 thousand/establishment) and they may be more present within NFA establishments that work with more area, capital, technologies, and resources, confirming what other research works had already exposed (GAZOLLA; NIEDERLE; WAQUIL, 2012; BASTIAN et al., 2014).

Table 3 presents the data of the production values that were sold by RAGs, discounting the so-called self-consumption in the establishments, compared to the data present in Table 2, previously described. At the national level, 73.05% of the RAGs' production goes for sale in food markets, while about ¼ stays in the establishments to be self-consumed by the families (26.95%). These data show that RAGs behave as a new social and economic enterprise as Mior (2005) has formulated, because most of the agricultural production is directed to food markets, due to the need of RAGs to improve their income and living conditions of farmers in the regions where they are present, strengthening the endogenous regional development, as already formulated by Amaral Filho (2001).

Table 3: Brazil and Regions - Sales value of rural agroindustry products (one thousand Reais)

Brazil and regions	Sale value (R$)	%
Brazil	10,830,769.00	100.00
Southwest	3,602,882.00	33.27
Northeast	2,552,332.00	23.57
Midwest	2,348,797.00	21.69
North	1,228,858.00	11.35
South	1,097,900.00	10.14

Source: Agricultural Census 2017 (IBGE, 2017).

All regions are close to this national percentage of products that are allocated to supplying food markets, except the South Region, where this percentage of sales is much lower (47.44%) and the self-provisioning strategies of families are more effective in feeding the domestic group (52.56% of production is self-consumed), In the South, a little more than half of the production stays within

the establishments, serving to ensure the food and nutritional security of families, as well as fulfilling other social and symbolic roles of exchange and reciprocity among farmers, as studies have pointed out (GRISA; SCHNEIDER, 2008; GAZOLLA; SCHNEIDER, 2017),

4.2 RAGs in family and non-family agriculture

Up to this part of the text we have analyzed variables of establishments and production values of the RAGs between regions. From this part on, in addition to the analysis of these variables regionally, we add the differentiation by the two types of agriculture (FA and NFA). For example, Table 4 expresses the number of establishments that have RAGs, by regions and types of agriculture. A first fact that calls attention is that most of the agroindustries are in FA establishments (84.52%) and only 15.48% are in the NFA, showing the prominence of family forms of production and work in rural spaces in the constitution of agroindustries as a production and consumption activity of artisanal and healthy foods.

Table 4 - Brazil and Regions - Number of agricultural establishments with rural agroindustry by type of agriculture (NFA and FA)

Brazil and regions	Typology					
	FA and NFA - total		NFA		FA	
	Estab.	%	Estab.	%	Estab.	%
Brazil	852,639	100	131,995	15.48	720,644	84.52
Northeast	318,402	37.34	48,990	15.39	269,412	84.61
South	203,560	23.87	29,236	14.36	174,324	85.64
North	189,677	22.25	20,022	10.56	169,655	89.44
Southeast	109,442	12.84	25,401	23.21	84,041	76.79
Midwest	31,558	3.70	8,346	26.45	23,212	73.55

Source: Agricultural Census 2017 (IBGE, 2017).

Regionally, the data are very similar to the national ones, only in the Southeast and Midwest regions the numbers of RAGs are a little lower in the FA (76.79% and 73.55%, respectively) and higher in the NFA establishments (23.21% and 26.45%, respectively). These data confirm what previous studies on the subject, based on information from the 2006 Agricultural Census, had already verified, that most of the experiences of RAGs were present in the FA, showing that the FAs are the main active social actors in the processes of value addition and food transformation, from the constitution of agroindustries (WAQUIL et al., 2014; BASTIAN et al., 2014).

Table 5 shows the data of the total production values of RAGs in the regions and by the two types of agriculture, The production values of the NFAs RAGs, at the national level, represent 57.1% of the total, while the production values of the FA are 42.8% of the total production, demonstrating that the NFA agroindustries are able to assess higher production values when placing their products and foods on the markets, In regional terms and in the NFA, the highest percentages of production are in the Midwest (87.38%) and Southeast (65.72%) Regions. In the FA the highest percentages of production values are found in the Northern (76.69%) and Southern (68.39%) Regions. The Northeast is a region in balance of production values around

the two agricultures, with NFA being slightly more predominant (55.65% of production values are in NFA and 44.35% in FA).

Table 5: Brazil and Regions - Value of rural agroindustry production by agricultural typology (NFA and FA) (one thousand Reais)

Brazil and regions	Typology					
	FA and NFA - total		NFA		FA	
	Valor prod.	%	Valor prod.	%	Valor prod.	%
Brazil	14,826,755.00	100.0	8,475,259.00	57.16	6,351,496.00	42.84
Southeast	4,749,278.00	32.03	3,121,089.00	65.72	1,628,189.00	34.28
Midwest	2,797,877.00	18.87	2,444,882.00	87.38	352,995.00	12.62
Northeast	3,154,385.00	21.27	1,755,538.00	55.65	1,398,847.00	44.35
South	2,314,663.00	15.61	731,743.00	31.61	1,582,920.00	68.39
North	1,810,552.00	12.21	422,007.00	23.31	1,388,545.00	76.69

Source: Agricultural Census 2017 (IBGE, 2017).

Again, in relation to these data contained in Table 5, the explanation goes through the different scales of the RAGs. For example, at the country level, the NFA RAGs have a productive scale of R$ 64.20 thousand/estate, while in the FA RAGs this scale is only R$ 8.81 thousand/estate, more than seven (7) times the difference between the two agricultures (7.28 thousand/estate). An example of this social process would be the sugarcane agribusinesses existing within the production units in São Paulo and surrounding cities (SANTOS; SANTANA, 2021). In any case, this finding coincides with other studies on the scales of RAGs carried out using data from the 2006 Agricultural Census, in which the conclusions were around the lower productive capacity of family RAGs compared to non-family RAGs (GAZOLLA; NIEDERLE; WAQUIL, 2012; BASTIAN et al., 2014).

Table 6 presents the production values that were marketed by RAGs in the two types of farming. As with production value, in sales value, non-family RAGs have the largest share being 62.35% of the national sales value, Family RAGs represent 37.65% of the total sales value. It can be seen that in the majority of the large regions, non-family agriculture has higher sales values, with the exception of the North (81%) and South (55.57%), where family farms predominate. The Southeast (66.19%), Northeast (62.41%) and Midwest (87.46%) are the regions with the highest sales values for RAG products, with the participation of the NFA being more representative.

Table 6: Brazil and Regions - Sales value of rural agribusiness products per type of agriculture (NFA and FA) and respective parcels (one thousand Reais, %)

Brazil and regions	Typology					
	FA and NFA - total		NFA		FA	
	Sale value	%	Sale value	%	Sale value	%
Brazil	10,830,769.00	100.0	6,753,233.00	62.35	4,077,536.00	37.65
Sotheast	3,602,881.00	33.27	2,384,831.00	66.19	1,218,050.00	33.81
Northeast	2,552,332.00	23.57	1,592,808.00	62.41	959,524.00	37.59
Midwest	2,348,797.00	21.69	2,054,344.00	87.46	294,453.00	12.54
South	1,097,900.00	10.14	487,759.00	44.43	610,141.00	55.57
North	1,228,858.00	11.35	233,490.00	19.00	995,368.00	81.00

Source: Agricultural Census 2017 (IBGE, 2017).

Possibly, in these three regions and types of farming that have higher sales values; this occurs due to the greater regularity of the supply of products during the year and access to local and regional markets, mainly by building marketing channels through short chains to market their food to consumers and urban centers. According to Waquil et al. (2014), both family and non-family RAGs sell to intermediaries and directly to consumers, with the difference being that non-family RAGs sell in larger quantities to intermediaries and family RAGs sell in larger quantities directly to consumers.

From the data contained in Tables 5 and 6, it is possible to calculate the production values self-consumed in the establishments, by the total value of production (Table 5), decreasing the production values sold (Table 6), in both types of agriculture. The census data show that, at the country level, the RAGs of the NFA sell to the markets 79.68% of their production and consume in their establishments only 20.32%. The FA RAGs, on the other hand, sell 64.20% of the production values and consume 35.80% of the production values.

What the Census data show is that the NFA agroindustries have as their main strategy the placement of their production in food markets, while the FA agroindustries need a larger share of this production to meet their food needs and allocate less surplus to the markets. Due to the larger number of household members in their families, the FA uses these foods as strategic in providing food and nutritional security for their members, who are more numerous compared to those of the NFA, as investigations have shown (GRISA; SCHNEIDER, 2008; DORIGON et al. 2020).

Regionally, the NFA agroindustries that make most use of the self-consumption strategy are in the Northern Region, which has the lowest percentages of production sales (55.32%) and the largest portions of production that remain as supplies for families in the establishments (44.68%). This region is followed by the Southeast where 76.41% of the production is sold and 23.59% is self-consumed. Among the agro-industries, the South Region stands out in relation to self-supply, since only 38.54% of the production is sold and 61,46% remains in the establishments for consumption. The South is followed by the Northeast, where 68.59% of the production is sold and 31.41% is self-consumed.

4.3 Economic activities, type of facilities and ATER received by RAGs

This last subsection of the results presents and discusses the indicators of RAGs around the groups of economic activities in which agroindustries are most present, the types of facilities in which food processing occurs, the land area, and the ATER received.

Table 7 presents the groups of economic activities in which RAGs are most active, for Brazil and the five regions, RAGs are present in several rural economic activities; however, according to the methodology of the 2017 Agricultural Census, they are classified in only nine (9) activities. In Brazil, temporary crops (50.2%) and livestock (36.7%) are the activities in which RAGs are most present; when added together these two groups of activities make up almost 90% of the presence of RAGs (86.9%). Other activities with greater participation are permanent crops (5.8%), forestry production of native trees (4.4%), and horticulture (1.1%). Among the activities with fewer RAGs are the production of certified seeds and seedlings (0.05%), forest production with planted trees (0.82%), fishing (0.34%), and aquaculture (0.34%).

Table 7: Brazil and Regions - Economic activity groups in which the rural agroindustry is present (establishments)

Economic activity groups	Brazil and Great Regions											
	Brazil		Northeast		South		North		Southeast		Midwest	
	Estab.	%	Estab.	%	Estab.	%	Estab.	%	Estab.	%	Estab.	%
Total	852,639	100	318,402	37.3	203,560	23.8	189,677	22.2	109,442	12.8	31,558	3.7
Temporary Crops	428,800	50.2	166,952	52.4	103,035	50.6	129,722	68.3	24,481	22.3	4,610	14.6
Horticulture and floriculture	9,538	1.1	3,303	1.0	2,560	1.2	1,617	0.8	1,651	1.5	407	1.2
Permanent crops	50,249	5.8	17,392	5.4	7,619	3.7	13,870	7.3	10,935	9.9	433	1.3
Seeds and seedlings	394	0.0	156	0.0	101	0.0	39	0.0	76	0.0	22	0,0
Animal husbandry	313,285	36.7	106,067	33.3	85,584	42.0	29,005	15.2	66,970	61.1	25,659	81.3
Forestry production (planted)	6,989	0.8	512	0.1	3,094	1.5	253	0.1	3,041	2.7	89	0.2
Forestry production (native)	37,628	4.4	21,970	6.9	773	0.3	12,631	6.6	2,069	1.8	185	0.5
Fishing	2,861	0.3	677	0.2	73	0.0	2,064	1.0	39	0.0	8	0.0
Aquaculture	2,895	0.3	1,373	0.4	721	0.3	476	0.2	180	0.1	145	0.4

Source: Agricultural Census 2017 (IBGE, 2017),

The North and Northeast regions have their RAGs based on temporary crops, with 68.3% and 52.4% respectively. The Midwest (81.3%), Southeast (61.1%) and South (42.0%) are the regions that concentrate the most RAGs linked to livestock and animal husbandry. The Southeast and South Regions also have the most horticulture activities with 1.51% and 1.26%, respectively. In addition, proportionally, the Southeast Region has the most activities linked to permanent crops (9.9%) (possibly fruit farming and other perennial plantations), production of seeds and seedlings (0.07%), and forestry production of planted trees (2.78%).

The data varies between regions, but the profile of RAGs is based on temporary crops and livestock and animal husbandry activities. These two types of economic activities are historical vocations in the development of Brazilian agriculture and are responsible for the supply of raw materials for the food elaboration processes in the RAGs. These two sets of economic activities, since previous Agricultural Censuses, have proven to be the locus of rural and agricultural development in Brazil (SCHNEIDER; FERREIRA; ALVES, 2014).

Table 8 shows the types of facilities where RAGs process products and food, Regionally, the Northeast presents almost 40% of the facilities for product processing (37.35%). Then, in second place and with very close percentages, come the Southern Region (23.87%) and the Northern Region (22.25%). With lower percentages in facilities to benefit the production are the Southeast (12.83%) and the Midwest (3.70%), Note that these data on the geographical location of the facilities coincide with the regionalization of the number of establishments dedicated to agroindustrialization, demonstrating that the preparation of food occurs within the regions themselves, corroborating the ideas around the endogenous development provided by agroindustries, emphasized in the literature review.

Table 8: Brazil and Regions - Type of rural agroindustry processing facilities (establishments)

Brazil and Great Region	Total	%	Type of processing facilities: Setting up one's own agricultural establishment		Public community processing facility		Private community processing facility		Third-party processing facility	
			Total	%	Total	%	Total	%	Total	%
Brazil	852,639	100.0	682,075	80.0	36,821	4.32	8,902	1.04	124,841	14.64
Northeast	318,402	37.35	193,020	60.62	25,935	8.15	7,102	2.23	92,345	29.0
South	203,560	23.87	201,694	99.08	171	0.08	210	0.10	1,485	0.73
North	189,677	22.25	161,850	85.33	8,984	4.74	602	0.32	18,241	9.62
Southeast	109,442	12.83	95,225	87.01	1,309	1.20	793	0.72	12,115	11.07
Midwest	31,558	3.70	30,286	95.97	422	1.34	195	062	655	2.08

Source: Agricultural Census 2017 (IBGE, 2017),

The 2017 Agricultural Census data classifies RAGs' processing facilities into four (4) types: owned, public or private community, and third-party. At the national level, it is observed that 80.0% of the processing facilities are owned, 14.6% owned by third parties, 4.3% public community and 1% private community. The region with the greatest number of own facilities is the South with 99%, followed by the Midwest with 95.9%, Southeast with 87%, North with 85.3%, and Northeast with 60.6%. The data reinforce the idea exposed before, that the processing of production is performed internally in the farmers' establishments, which is important to guarantee them autonomy in the management processes of the enterprises (PLOEG, 2008).

The Northeast Region has greater use of third-party facilities (29%), public community (8%) and private (2.23%). The North and Southeast Regions have, respectively, 9.6% and 11% use of third party facilities. Private community facilities are the least used in all regions. What the data highlights is that the vast majority of farmers in the five regions have facilities on their establishment to agroindustrialized products and food. In some cases, there is a space or even a building dedicated to agroindustry that follows the precepts of food legislation (built with their own resources or with loans, for example, from PRONAF Agroindustry or *Mais Alimentos*), constituting what Mior (2005) called a new social and economic enterprise, since it follows the assumptions of legislation and there is formalized access to food markets.

However, in most cases it is a part of the farmers' house (for example, the kitchen or the basement of the residence) that is used as the agroindustry's own premises. According to Guimarães and Silveira (2010), in this case, one can call this agroindustry a home-based one, since its functions are self-consumption and small sales of surplus to food markets, in an informal way, according to the rules of legislation. This would be, for example, the case of the so-called "green meats", one of the main foodstuffs according to the census data, in which the animals are slaughtered in the production units for self-consumption by the family and small exchanges and donations with neighbors, relatives, or even with the rural community.

The next two pieces of information in Tables 9 and 10 deal with the land tenure status and the area strata used in the agricultural establishments that have RAGs, respectively. Regarding land tenure, it can be observed that most farmers are owners of the land where they produce. At the Brazilian level, the data show that 78.58% of farmers are owners of the area where they develop their activities, including RAGs. In second place comes the situation of concessionaire (6.98%) and

commander (4.70%). The other situations in relation to land ownership have lower percentages (renter, partner, occupant and without area).

Table 9: Brazil and Regions - Rural agroindustry producer status in relation to land

Land status of the producer	Brazil and Great Regions											
	Brazil		Northeast		South		North		Southeast		Midwest	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Total	852,639	100	318,402	37,34	203,560	23,87	189,677	22,25	109,442	12,84	31,558	3,70
Owner	670,046	78,58	224,128	70,39	182,616	89,71	144988	76,44	93,714	85,63	24,600	77,95
Concessionaire	59,545	6,98	26,066	8,19	5,399	2,65	19,802	10,44	3,554	3,25	4,724	14,97
65Renter	19,426	2,28	9,947	3,12	4,920	2,42	763	0,40	2,967	2,71	829	2,63
Partner	16,912	1,98	8,668	2,72	2,842	1,40	3,473	1,83	1,614	1,47	315	1,00
Commander	40,105	4,70	21,276	6,68	6,024	2,96	5,925	3,12	6,248	5,71	632	2,00
Occupant	29,944	3,51	16,256	5,11	1,615	0,79	10,666	5,62	1,005	0,92	402	1,27
Without area	16,661	1,95	144	0,05	144	0,07	4,060	2,14	340	0,31	56	0,18

Source: Agricultural Census 2017 (IBGE, 2017).

Regionally, the data in relation to the majority of farmers owning land is repeated, with emphasis on the South and Southeast Regions, where the percentages exceed the national values, 89.71% and 85.63%, respectively. These high numbers of owner farmers are explained by the immigration policies implemented in Brazil after the abolition of slavery, both for wage labor in the coffee plantations in the Southeast, later becoming owners of the areas, and to increase the country's food production and occupy the territory in dispute with the Spanish, in the case of the South. These policies facilitated access to land for immigrants and other social categories (settlers, caboclos, freed blacks, squatters), allowing higher percentages of owning the areas in these two regions (RAUTER, 2018).

Another important indicator in relation to land is in relation to the total area groups of agricultural establishments that have RAGs. Through this information it is possible to verify, for example, whether RAGs are in smaller, medium-sized or large production units. The data show that at the country level, half of the RAGs are allocated in establishments of 10 ha (50.1%). If we add to this percentage, the establishments with area groups of 10 to 20 ha (15.6%) and 20 to 30 ha (18.0%), it appears that more than 80% (83.7%) of the agroindustrialization processes of products and foods in Brazil is developed in units smaller than 50 ha of total area.

In the Northeast and South Regions, this dynamic is repeated; most RAGs are located in agricultural establishments of up to 50 ha. In the North, Southeast, and Midwest, there are significant percentages of initiatives to add value to products and foodstuffs in the 50 to 100 ha area group: 11.2% in the North, 10.-3% in the Southeast, and 12.9% in the Midwest. In these same three regions, the important number of RAGs in establishments with larger areas, from 100 to 500 ha, is noteworthy: around 8% in the North and Southeast, and 12.9% in the Midwest. In the Northeast and South Regions, this dynamic is repeated, with most RAGs located in agricultural establishments of up to 50 ha. In the North, Southeast, and Midwest, there are significant percentages of initiatives to add value to products and foodstuffs in the 50 to 100 ha area group: 11.2% in the North, 10.3% in the Southeast, and 12.9% in the Midwest. In these same three regions, it is worth noting the significant number of RAGs in establishments with larger areas, from 100 to 500 ha, around 8% in the North and Southeast, and 12.9% in the Midwest.

What the Agricultural Census data show in relation to the area groups of the establishments that have agroindustries is that most of the initiatives of agroindustrialization of products and food are found in units with smaller areas, both nationally and in the five macro-regions. This finding shows that family farmers, who are the ones who own the smallest land areas, as discussed in the first subsection of the results of this work, are the social actors who have conducted value-adding processes in their social reproduction strategies. This statement corroborates other studies already developed on RAGs, based on data from the 2006 Agricultural Census (GAZOLLA; NIEDERLE; WAQUIL, 2012; BASTIAN et al., 2014),

In the last Table (10), there is data on the origin and receipt of ATER by the establishments that have RAGs. This information available in the Agricultural Census is important, since it allows us to know the actors that farmers relate to in the social context in which they live, whether or not they receive ATER and what type of ATER received (whether from the state or others). In the case of public ATER, it makes it possible to verify the support provided by public policy to agroindustrialization, as mentioned earlier in the introduction and review of the work.

The data contained in Table 10, at the national level, show that almost 80% of the establishments that have RAGs do not receive any technical guidance (79.8%). The units that receive technical guidance are only 1/5 of the units (20.2%), and the main social actors that are responsible for providing it are: the State (7.6%), ATER itself (6.2%), from cooperatives (5.0%) and from integrating companies (2.7%). The other types of ATER provided have small percentages (private companies, NGOs, S System and other types).

Table 10: Brazil and Regions - Receipt and origin of technical guidance in agricultural establishments that have rural agroindustries

Origin of technical guidance	Brazil and Great Regions											
	Brazil		Northeast		South		North		Southeast		Midwest	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Total	5,073,324	100	580,613	11.4	2,322,719	45.8	969,415	19.1	853,314	16.8	347,263	6.8
Receives	1,025,443	20.2	60,351	10.4	190,804	8.2	277,593	28.6	414,645	48.6	82,050	23.6
Government	388,077	7.6	40,224	6.9	114,425	4.9	88,905	9.2	124,015	14.5	20,508	5.9
Own	316,394	6.2	14,637	2.5	44,830	1.9	115,266	11.9	98,051	11.5	43,610	12.6
Cooperatives	251,520	5.0	2,223	0.4	14,614	0.6	66,319	6.8	155,171	18.2	13,193	3.8
Integ, Company	134,950	2.7	1,625	0.3	4,050	0.2	14229	1.5	110,162	12.9	4,884	1.4
Private company	28,302	0.6	822	0.1	2,016	0.1	4,692	0.5	17,735	2.1	3,037	0.9
NGOs	8,662	0.2	797	0.1	5,757	0.2	1,012	0.1	850	0.1	246	0.1
System S	7,680	0.2	719	0.1	1,962	0.1	1,848	0.2	1,694	0.2	1,457	0.4
Other	52,117	1.0	2,725	0.5	13,175	0.6	17,901	1.8	15,085	1.8	3,231	0.9
Does not receive	4,047,881	79.8	520,262	89.6	2,131,915	91.8	691,822	71.4	438,669	5.4	265,213	76.4

Source: Agricultural Census 2017 (IBGE, 2017).

Opening the data by the five Brazilian macro-regions, the percentages of receipt of ATER are not very different, highlighting the North and Northeast Regions, where the non-receipt of ATER services exceed the national average, 89.6% and 91.8%, respectively, being the two most unassisted regions. The South is where the percentage of non-receipt of ATER is lowest, around 51.4% of the establishments, and the Southeast and Midwest are close to the national average of non-receipt of ATER services, 71.4% and 76.4%, respectively. The South Region is better placed in terms of

receipt of ATER, with almost half of the establishments with RAGs (48.6%), being reached by ATER of cooperatives (18%) and public state (14.5%). On the opposite side, the regions that receive the least ATER services, are the North (10.4%) and Northeast (8.2%), with state ATER predominating in both,

The conclusions that the data allow us to draw regarding ATER in establishments with RAGs are twofold: a) first, ATER services, whether public or private (coming from other actors and organizations) do not reach most Brazilian farmers who have agroindustries; b) second, in the regions where farmers are more vulnerable historically, in the North and Northeast, such services are almost non-existent, especially the public ones, which should be concerned with the social, productive and food market inclusion of these farmers, in order to promote rural and regional development processes among the poorest farmers, improving their capabilities and quality of life.

A study by Deponti, Scarton and Schneider (2014), using data from the 2006 Agricultural Census had already pointed out this reality, in which 78% of Brazilian farmers did not receive ATER services, After eleven years (11) between the two census surveys, this percentage has even increased slightly, since in the 2017 Census, almost 80% of the establishments with RAGs are completely unassisted by ATER services, demonstrating an unstructured panorama of ATER services during this period in the country.

According to Deponti, Scarton, and Schneider (2014) the low level of education may be one of the factors that lead farmers not to seek technical guidance. Allied to this is the fact that establishments with smaller areas and poorer farmers have less access to guidance, In the case of private technical guidance, this does not reach all establishments, being selective around activities of private interest, for example, the case of agro-industrial integration with companies (tobacco, pigs, and poultry) that appears with a significant percentage in the Census data,

The public ATER, despite the numerous structural reforms in recent years, such as the creation of the National Agency for Technical Assistance and Rural Extension (ANATER), implementation of the new Law of ATER, action by projects and public calls, apparently did not have sufficient resources and effectiveness of actions to expand its scope, especially at the tip, not reaching the units of farmers who need it most. Moreover, a study shows that public ATER has been overly involved in recent years with the preparation of projects and implementation of public policies, even being called "office ATER" (NUNES; GRIGOLO, 2013).

The lack of technical assistance can lead to several types of problems for farmers, such as those related not only to low productivity, but also lack of quality of the food that is produced/prepared; deficiencies in the management of RAGs; difficulties in understanding food legislation to formalize enterprises; barriers to building new food markets and marketing channels; low access to rural credit policies, local or state agroindustrialization programs as mentioned earlier in the work, and other policies, such as institutional markets (PAA and PNAE), which would be important to stimulate food sales from agroindustries, Thus, the more effective participation of the State via public policies is fundamental to fill the gap of technical orientation of Brazilian agricultural establishments with RAGs, especially the most vulnerable and the most depressed regions.

5 Final considerations

The objective of this work was to analyze the rural agroindustry data from the 2017 Agricultural Census in order to build a profile of the experiences in Brazil, in the macro-regions and in the two types of farming (family and non-family), The analyzed data allowed drawing an overview of the establishments that elaborate products and food in Brazil, since existing methodological differences (different algorithm) between the two census surveys, did not yet allow a temporal comparison of the evolution and dynamics of RAGs between the two Censuses (2006 x 2017).

Regarding the predominant characteristics of the profile of Brazilian rural agroindustries, the data from the 2017 Agricultural Census shows that the experiences are mostly present within FA establishments. However, in terms of production and sales values, RAGs from NFA establishments predominate, In terms of production capacity, the NFA agroindustries have larger scales, while those existing in FA establishments are smaller.

In relation to the food production of the agroindustries that is not commercialized, it is observed that in the FA this strategy is more used to meet the food needs of the domestic group, which is generally higher in family agriculture in relation to non-family agriculture. This research finding shows that besides the agroindustries being of great importance for the production of good quality, healthy, and sustainable food for consumers in the regions where they operate, they are also a guarantee of food security for farming families.

In regional terms, the largest concentration of RAGs, analyzing the number of establishments, occurs in the Northeast Region, both family and non-family agroindustries, compared to the other Brazilian regions. The Southeast Region has the highest production and sales figures, while the South Region is the one that most uses the strategy of self-consumption of food manufactured by families, in order to meet the food and nutritional security needs of the household group, which are more extensive in the FA.

Besides these characteristics of the RAGs' profile, data show that Brazilian agroindustries develop their activities mainly based on temporary crops and livestock and animal husbandry, and the food processing structures and land areas of the farmers' own units. In this sense, most of the RAGs in the country are located in establishments smaller than 50 ha, which reinforces, due to the small land area, their predominantly familiar character.

Another characteristic that calls attention is the low incidence of ATER services provided, both public and private, since they reach only 1/5 of the Brazilian establishments with RAGs, being less effective in the North and Northeast regions, where there are significant contingents of poor FAs, who would need this support, especially from public ATER, in order to activate more inclusive and virtuous processes of rural and regional development.

Given the importance of this food agroindustrialization activity in rural areas, it would be up to the State to support these initiatives with policies, which currently only count on specific public actions in some municipalities, besides the rural credit from PRONAF Agroindustry/Food accessed by some experiences, but which is not enough to generate multifaceted development processes, as already discussed in the work. It would be fundamental to promote public policies that increase the autonomy of RAGs, generate more occupations, jobs, and income, and also build new

and better food markets for the initiatives, since agroindustries are important activities for supplying society with healthy and sustainable food on the one hand, and, on the other, they also guarantee food and nutritional security for farming families through the practice of self-consumption. Furthermore, agroindustries are important activities for the promotion of regional development as they stimulate the local economy and help build food markets based on short supply chains that have less environmental impact, bring farmers and consumers closer together, providing food that is in line with the idea of healthy diets.

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