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# Agricultural Policies: Agribusiness Or Family Farming In Brazil.

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***Summary:***
*The purpose of this article is to discuss how PRONAF, as a public policy for "strengthening family farming," has contributed to a considerable increase in commodity production in areas where family farmers predominate in Rio Grande do Sul. It discusses some considerations about the formation of Rio Grande do Sul, its differences in terms of agrarian structure, as well as the increase in productivity and area used in the production of the main export crops in the last decade. It also presents considerations about the data on agricultural financing and investments from PRONAF, which reveal a tendency to support agribusiness. Finally, it presents a discussion about the need to review the role of PRONAF as a public policy that should promote food security and environmental recovery and preservation in regions with a presence of family farmers, especially the poorest.*
***Keywords:*** *PRONAF, Agribusiness, Family Farming, Food Insecurity, Public Policies.*

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## I. Introduction

The State of Rio Grande do Sul (RS) is located in the extreme south of Brazil, in 2018 it had a population of 11,262,689 inhabitants, approximately 5% of the total Brazilian population, in an area of 281,730.2 km2 and with a population density of 40.31 inhabitants/km². (FEE, 2019)

RS is considered by the Brazilian average as a socioeconomically developed state, as it presents a framework of good social indicators, in comparison with the other states of the federation, even so, there remain regions of Rio Grande do Sul with a concentration of rural poverty in several territories.

The occupation of the Gaucho territory by blacks and whites occurred in several stages. At the beginning of the 17th century, it was through the founding of Jesuit reductions by Spanish missionaries. They introduced, for example, cattle, sheep, pigs, chickens, horses, mules and many agricultural crops.

Later, from 1752 onwards, several families from the Azores (Portuguese Archipelago) arrived and were given land to develop agricultural activities, mainly the production of wheat, barley, flax, among others, and to supply the other cities that were being formed. In the 19th century, Rio Grande do Sul received large contingents of non-Iberian European immigrants, initially German (1824), and later Italian (1875), who settled on small properties mainly in the northeast region of the state. Over the years, this area became more dynamic with the installation of agro-industries and industries supplied by diversified agriculture. In the southern half, extensive livestock farming continued to be an important economic and especially political sector for many decades in RS.

The north of the state, with more recent colonization, was populated basically through the migration of the children of German and Italian colonial families who established diversified agricultural production on rural properties and the organization of small industries and agro-industries, thus favoring a greater distribution of income, resulting in an urban network formed by small centers close to each other and with complementary activities.

The occupation of the current territory of Rio Grande do Sul generally explains the differences in population and income distribution in the state. In the south, it was based on large estates, with slave labor or very low wages, with scattered and distant cities, and in the north, in regions of family farming on small properties, with a more fragmented political and administrative structure. This land distribution results in greater population density in the north as opposed to the more urbanized south.

In recent decades, with the subdivision into smallholdings of the original colonies in the mountain region and in the North of the State, the children of these settlers had to migrate to the West of Santa Catarina, Southwest of Paraná and Central-West of Brazil, Paraguay and more recently to the Amazon.

With the modernization of agricultural production, imposed by the green revolution model and consequently the release of labor, many families migrate from the countryside to the cities, especially to the metropolitan region and to Serra Gaúcha to work as factory workers.

These transformations in agriculture, from the 1960s onwards, greatly altered the spaces in Rio Grande do Sul and introduced other elements into the daily lives of families that profoundly changed the ways of production and life in all regions of Rio Grande do Sul.

In recent decades, since the organization of social movements in the countryside, many demands have been made to governments, requesting specific public policies for family farming, which among them resulted in the implementation of PRONAF (National Program for Strengthening Family Farming) as a policy to promote sustainable development in the countryside. Over time, it has become clear that the program to support family farming has been significantly altered and, for example, has largely failed to contain the rural exodus, has favored the growing contamination of the environment, the indebtedness of farmers, and has not reduced rural poverty or the advance of commodities. These and other situations are observed especially in the poorest territories of RS.

The objective of this article was to evaluate how PRONAF in the last 20 years has not guaranteed the permanence of many families in rural areas with quality of life and how it has contributed to the advancement of agribusiness in areas of predominant family farming.

## II. Material And Methods

Regarding the methodological procedures, we used quantitative data from other studies to characterize the socioeconomic situation of RS and PRONAF in the region. The analysis developed focuses mainly on the use of a qualitative methodology, through the use of semi-directive interviews with family farmers, leaders and technicians from cooperatives and rural companies. The interviews were conducted in the municipalities of the Celeiro and Médio Alto Uruguai regions, northern RS, in 2018.

These interviews were intended to cover a wide range of institutions and social actors linked to the region's agrarian development, enabling the collection of heterogeneous and diverse data and information from the interviewees. Thus, we sought to understand the more general logic of how Pronaf operated at the beginning of the program in the region and its changes over the last 20 years, in addition to verifying the main actions supported and financed regarding the production of grains, livestock and commodities, and mainly how family farmers currently perceive this public policy originally created to promote rural development, the promotion of small-scale production/breeding, rural diversification, and food security for families.

This article is divided into three main sections, in addition to the introduction and final considerations. The first section presents a general contextualization of Rio Grande do Sul and its agricultural history. The second section briefly discusses the evolution of commodities in family farming regions, some data on rural credit under the program in RS, some of the productive and economic activities linked to grain production, and what is currently being financed. The third section analyzes how farmers have perceived this program over the past 20 years and whether there are still prospects for agricultural diversification, production of basic foods, and promotion of crops/livestock for the food security of farmers in these impoverished regions.

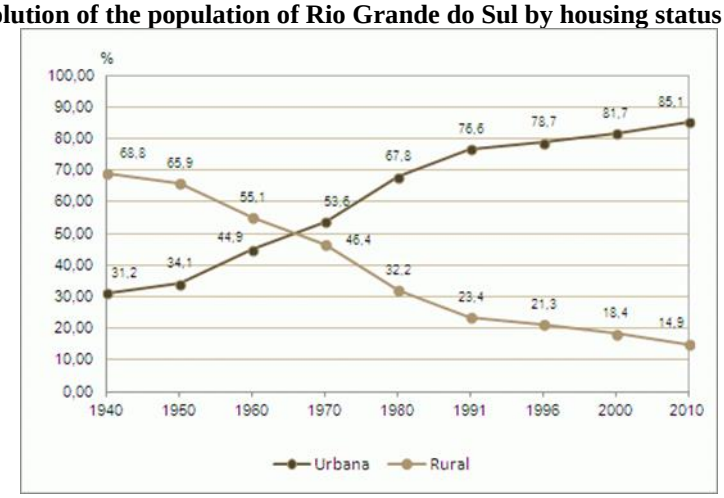
## III. Results And Discussions.

As highlighted above, in 2018, RS ranked fifth among the most populous states in Brazil, being surpassed by São Paulo, Minas Gerais, Rio de Janeiro and Bahia. The most populous municipalities in Rio Grande do Sul are mainly located in the region around Porto Alegre (RMPA), in the Metropolitan Region of Serra Gaúcha and in the Southern Urban Agglomeration.

The distribution of the population in Rio Grande do Sul reveals a constant urbanization of the population of Rio Grande do Sul in recent decades, with approximately 85% of the population currently living in cities. It also presents the lowest relative growth rate in Brazil between 2000 and 2015.

Since 1950, Rio Grande do Sul, following the Brazilian trend, has shown strong growth in the number of urban inhabitants. The state's urbanization rate in this decade was 34.1%. From then on, the population of Rio Grande do Sul has been gradually concentrated in cities. Mainly with the green revolution that changed agricultural activities and with the expansion of industries, RS ceased to be rural and became more urban. Census data show the periods in which this transformation occurred in the place of residence of the Rio Grande do Sul residents. (Graph I).

**Graph I: Evolution of the population of Rio Grande do Sul by housing status - 1940 to 2010**



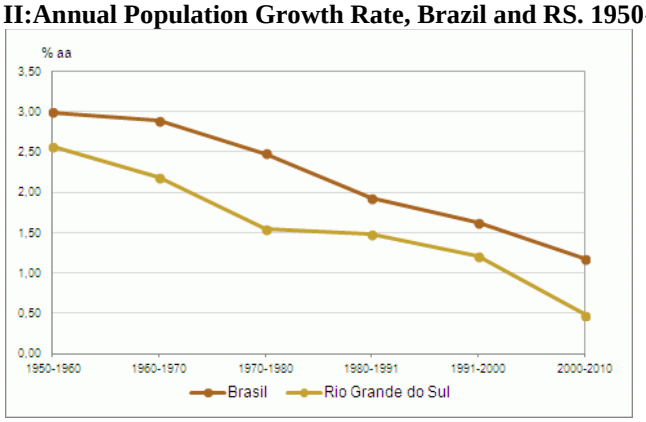

Source: Author, 2024.

The population of Rio Grande do Sul, for historical and economic reasons, is unevenly distributed throughout the territory. Although this situation has changed somewhat in recent times with the growth of some cities in the interior, the population is still concentrated in the metropolitan area, in the urban agglomeration of Serra and Sul. Still regarding the concentration of the population in the municipalities of the state, in 2013, 66.7% of the municipalities in Rio Grande do Sul had less than 10 thousand inhabitants. With a population between 10 and 50 thousand inhabitants, there are 123 municipalities. And in a third range, between 50 and 100 thousand inhabitants, there are 24 municipalities and finally with a population over 100 thousand there are another 17 municipalities, which concentrate 46.8% of the total population of the state.

The high population densities are in the Porto Alegre-Caxias do Sul axis with a density above 200 inhabitants/km² and, on the other hand, there are areas with low population density, located mainly in the west and northeast of the Rio Grande do Sul territory with a density below 20 inhabitants/km².

Even with all this population concentration, Rio Grande do Sul has shown very low population growth in recent years.The geometric annual growth rate of the Brazilian and Rio Grande do Sul population has been in constant decline, especially since the 1960s. As we can see in the graph below, Brazil in the last decade from 2000 to 2010 presented 1.17% per year and Rio Grande do Sul 0.49%, the lowest rate in Brazil. Graph II.

**Graph II:Annual Population Growth Rate, Brazil and RS. 1950-2010.**



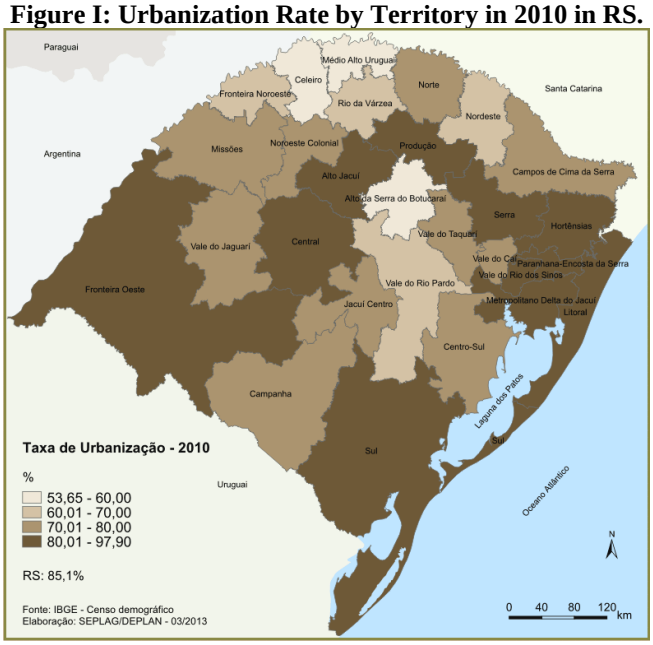

**Source: Author, 2024.**

During this same period, 51% of the municipalities in Rio Grande do Sul showed negative population growth rates. These are located mainly in the western and northern border regions of the state. In the territories of Celeiro, Médio Alto Uruguai, Missões, Fronteira Noroeste and Norte, for example, it was found that more than 80% of the municipalities in these regions showed negative growth rates. It is observed that when the regional centers are more economically dynamic, such as in Erechim, Santa Rosa and Frederico Westphalen, the rates are positive in contrast to the smaller municipalities.

The municipalities located in the Metropolitan Region, Serra and Litoral presented the highest growth rates in this same period. The coastal region stands out, as most of its municipalities present the highest growth rates in the state and consequently the highest urbanization rates. Figure I.

In addition to this process of accelerated urbanization and decreasing birth rates, the 2010 census indicates a female predominance in the composition by sex of both the Brazilian population and the population of Rio Grande do Sul. And this is more striking in rural areas because women, especially younger women, migrate more than men, causing an aging and masculinization of rural inhabitants (Schneider, 2002).

**Figure I: Urbanization Rate by Territory in 2010 in RS.**




**Source: Author, 2024.**

The Expansion of Agribusiness in RS with Pronaf resources.

In the 2006 National Agricultural Census, 4,367,902 family farming establishments were identified, representing 84.4% of Brazilian rural units. These family farmers occupied an area of 80.25 million hectares, which corresponds to 24.3% of the total area occupied. These data reveal a concentrated agrarian structure in the country: non-family or employer-owned establishments, despite representing 15.6% of the total establishments, occupied 75.7% of the area. The average area of family-owned establishments in that year was 18.37 ha, and that of employer-owned establishments was 309.18 ha.

The Southern Region of Brazil had 19.2% of all family establishments (849,997) and 16.3% of the total Brazilian agricultural area. And family establishments represented 84% of the total units and 37% of the total area. In Rio Grande do Sul there are 378,546, or 8.7% of the total Brazilian family establishments.

In 2006, Rio Grande do Sul had 441,447 establishments dedicated to agriculture and livestock. Of these, 378,546 were classified by Law No. 11,326 (which establishes the guidelines for the formulation of the National Policy for Family Farming and Rural Family Enterprises, or PRONAF) as belonging to family farming, covering an area of over six million hectares. In these units, in general, 120,427 had permanent crops, 312,768 were dedicated to temporary crops, 236,807 had natural pastures in their area, 86,256 establishments allocated part of their land to the preservation of woodlands or forests, and 4,609 properties declared that part of their land was degraded, all due to inadequate soil management, desertification, salinization, etc. (Trentin, 2021)

Considering the situation of farmers in 2006, there were 317,963 properties where the farmer was the owner; settlers without definitive title owned 6,557 areas; 21,477 establishments where the farmer was a tenant; 8,408 where the farmer had the status of partner; 17,885 as occupants; and in 6,256 places with rural families only residing, without agricultural area. (IBGE, 2010).

As has been reiterated several times, from the 1960s onwards, RS underwent profound transformations in its agricultural production models. With the technological package known as the green revolution, highly dependent on external inputs, rural Rio Grande do Sul was changing. The transformations took place in all forms, but the main ones were the rural exodus, caused mainly by the mechanization of production, the commodification of rural families, the abandonment of production for family food, the dependence on inputs and prices of multinationals, and the contamination by pesticides and petroleum derivatives in rural communities. (Trentin, 2021)

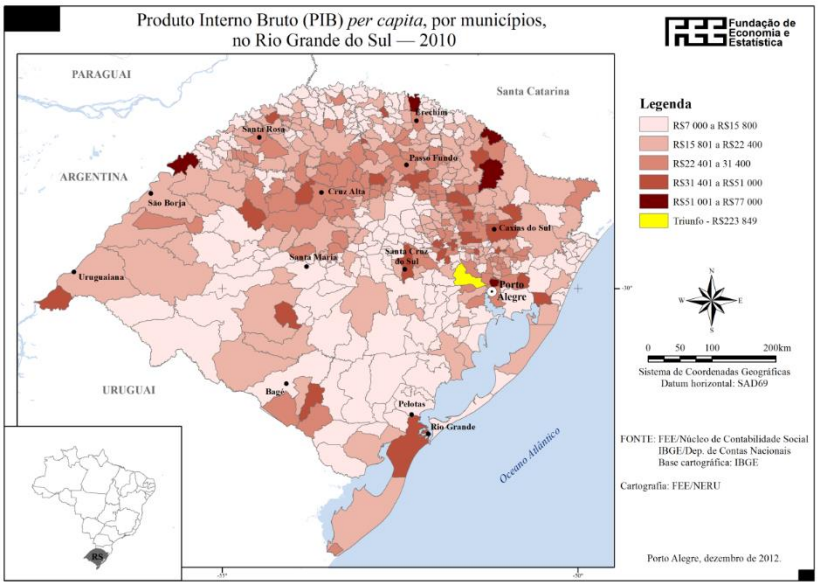
All of this meant that some regions of the state, with better soils and greater integration in the production chain, achieved greater economic growth to the detriment of others occupied by farmers with small areas of land, with steep soils and less suitable for technological production, which became poorer every year.

Based on the idea that development is different from economic growth, in recent decades researchers such as Ploeg in Schneider et al, 2010, have stated that there is room for different styles of agriculture, not just the one based on the intensive use of fossil fuels, agrochemicals and mechanization known as "modern". He also states that this type or style of "modern agriculture" would be "disconnecting agriculture, as a socially constructed practice, from nature and ecology, from the structure and quality of family work, from the specific social organization of time and space and from the family itself, which is the main principle of social organization". All of this makes farming families merely secondary actors in so-called modern agricultural activities.

Among the social processes taking place in rural Rio Grande do Sul in recent decades, the most important are the strong action of public policies, especially PRONAF, the organization of rural social movements, which have become recognized nationally and internationally, the constant prolonged droughts caused by climate change, and also the continued impoverishment of family farmers. (Trentin, 2023)

Rio Grande do Sul, especially its northern portion, is populated by family farmers who carry out various agricultural activities and have received significant funding from PRONAF in recent years. Since the 1970s, farmers in this region have moved from traditional agriculture with polycultures for subsistence and sale of surpluses to the dependent and degrading monoculture production model implemented by the "green revolution," and have become increasingly impoverished. In this part of the state of Rio Grande do Sul, there are still municipalities with a significant rural population and very low per capita income. Figure II

**Figure II: GDP per capita in RS municipalities in 2010.**




Source: Author, 2024.

In addition to the debt that affects many rural families, due to PRONAF credits, due to using productive techniques in areas with other aptitudes, due to the underuse of expensive machinery and equipment in small areas and the constant droughts that have plagued the State, especially in regions with family farming, in recent decades, rural exodus and poverty are increasing.

The actions of Pronaf in the north of Rio Grande do Sul are, broadly speaking, soil recovery, credit for financing with relatively low interest rates, agrarian reorganization that inflated the land market, agroindustrialization that comes up against legalization and the lack of labor, acquisition of machinery and equipment, but also, they continue to prioritize and encourage the production of commodities for export with external agrochemicals. Thus, family farmers continue to seek credit to reproduce the green revolution package, and most farmers continue to deplete the natural resources of their land area and, in addition, their debts increase every year. (Trentin, 2023)

Support for the production of commodities for export with financing from PRONAF, as a public policy for rural areas, in most municipalities, is aimed at increasing production and productivity, including in areas with rudimentary agriculture.and dependent on external inputs, or with limited capabilities in terms of terrain, for example. This "improved" model of the "green revolution" is supported in almost all agricultural areas. It does not respect the physical or social characteristics of each location. All these actions generate and continue to provoke a series of processes that are different depending on the territory in which they interact with each other. For example, in some territories they can continue to encourage rural exodus through mechanization and in others

they can generate extra income through rural employment in more specialized or multi-active activities. (Schneider, 2004).

Technical assistance provided by private companies and credit "facilitated" by banks are directed towards the production of products for export and depend on inputs. Farmers are at the mercy of these technicians and without support and incentives, via specific public policy to promote food security, it is very difficult to develop sustainable activities in time and space such as agroecology.(Trentin, 2023)

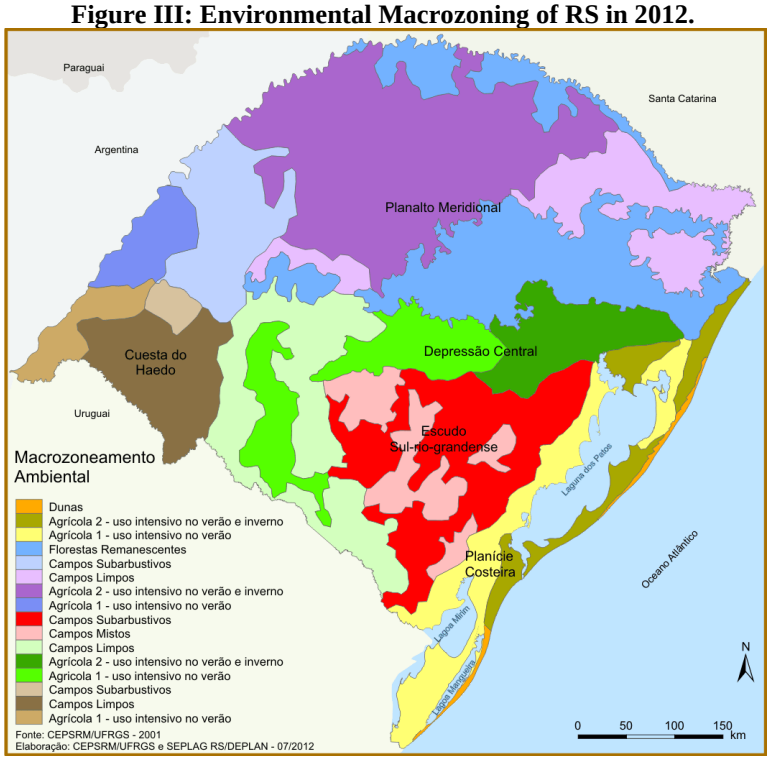
In these municipalities with predominantly family farming, problems persist such as masculinization (young women migrate more to urban centers) and aging, that is, young people in general migrate more, whether to study or to work. When they go to school, almost all of them reproduce a mistaken view that "urban is modern." (Schneider, 2004).

There are also persistent problems with the agrarian structure, where many families, especially the poorest in rural areas, do not own land and when they do, it is very small. Public policies for family land acquisition are mistaken, as they generate large debts for families and inflate the land market in rural communities.

This model of production supported by PRONAF causes strong regional imbalances. Throughout Brazil and in Rio Grande do Sul, there are islands of prosperity in agribusiness, but in geographical terms, within these islands there are many rocks, which are the impoverished units. Thus, even in a region where the average development indexes appear high, Brazilians and Rio Grande do Sul residents are very poor.

And these actions of commodity production for export supported by public policies are present in all physiographic regions of Rio Grande do Sul, as revealed in Figure III.

**Figure III: Environmental Macrozoning of RS in 2012.**




Source: Author, 2024.

These data lead us to several observations, among which, most notably, PRONAF financing stands at 1.12% for bean crops, one of the main products in our diet, and at almost 35% for corn and almost 40% for soybeans, products intended, especially soybeans, for export. Thus, it is clear that family farmers are prioritizing export products over food products with each harvest, and with support from public policies via banks.

The 2006 Agricultural Census revealed that Brazilian family farming was responsible for 87% of cassava production, 70% of beans, 46% of corn, 38% of coffee, 34% of rice, 58% of milk, 60% of pigs, 50% of poultry, 30% of cattle, 21% of wheat and 16% of soybeans, among other products.

These data reveal the importance of family farming, especially in Rio Grande do Sul, a state with a predominance of this social category. However, what we have observed in recent years is a concentration of support for the production of some products aimed at export to the detriment of food products.

Data from the Brazilian Central Bank inform that the pThe percentages allocated to agricultural costs by type of crop in Rio Grande do Sul in 2009 were as follows for the following crops: rice 5.38%, beans 1.12%, corn 34.88%, soybeans 39.81% and wheat 9.13%, among other crops. BACEN (2010).

Other data from BACEN (2010) reveal that agricultural investment financing by PRONAF in RS in 2009 was for the acquisition of: service animals 0.27%, perennial crop formation 2.55%, machinery and equipment 79.05%, among others. In other words, we are mechanizing even more, this is clear with the strong investments of the Mais Alimento Program, favoring, among other things, the increase in profits of the owners of machinery and equipment factories and the indebtedness of farmers.

In general, it was observed that PRONAF actions in family farming regions are coupled, that is, corn and soybean crops receive the largest volume of financing for costs and that each year they require, through agricultural investment actions, the acquisition of new machinery and equipment. And with this, almost none of the financing is used for the processing or industrialization of products of animal or vegetable origin in the producing regions.

The Advancement of Soybeans and Corn in Family Units in RS.

Soybean cultivation in the American continent is responsible, according to the Food and Agriculture Organization - FAO, for about 86% of all soybeans produced in the world and thus, one of the main commodities traded on international markets. Among the countries, Brazil is the world's second largest producer of soybeans with 27% of the world production, in 2013-2014. It is surpassed only by the United States, which produces 30% of this total. However, projections for the coming years indicate that Brazil will surpass the North American production of soybeans. Table II.

Rio Grande do Sul is currently the third largest producer of soybeans in Brazil, surpassed only by the states of Mato Grosso and Paraná. According to the IBGE Municipal Agricultural Survey, RS recorded production of 15,700,264 tons of soybeans in 2015. Considering the last decade, it can be said that the state practically doubled the amount produced, going from an average of 5,782,081 tons in the period 2000-2002 to an average of approximately 11,000,000 in the period 2009-2015.

**Table II: Largest World Soybean Producers in Million Tonnes.**

| Produção de soja no mundo – Milhões de toneladas | | | | | |
|---|---|---|---|---|---|
| País | 2009/2010 | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 |
| Brasil | 69.000 | 75.300 | 66.500 | 82.000 | 85.000 |
| Estados Unidos | 91.417 | 90.605 | 84.192 | 82.055 | 88.599 |
| Argentina | 54.500 | 49.000 | 40.100 | 49.500 | 53.500 |
| China | 14.980 | 15.100 | 14.480 | 12.800 | 12.500 |
| Índia | 9.700 | 9.800 | 11.000 | 11.500 | 12.300 |
| Paraguai | 6.462 | 7.128 | 4.043 | 9.367 | 8.400 |
| Canadá | 3.581 | 4.445 | 4.298 | 4.930 | 5.300 |
| Outros | 10.763 | 12.546 | 14.539 | 15.431 | 16.116 |
| Total | 260.403 | 263.924 | 239.152 | 267.583 | 281.715 |

Source: MAPA, 2019

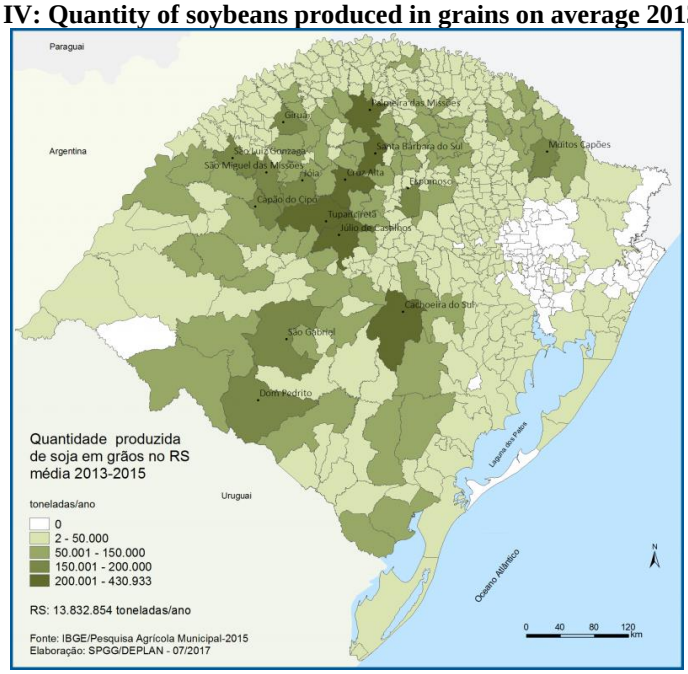
It should also be noted that the area planted with soybeans increased by approximately one million hectares between 2001 and 2005, when it reached 4 million hectares, before decreasing in the following period, mainly due to unfavorable weather conditions. However, from 2009 to 2015, the planted area increased again, reaching levels higher than those seen in 2005.

In this sense, if we consider the productivity factor, in the last decade, it can be said that there has been a significant increase in production in RS through the use of new technologies and soil management, such as transgenics, direct planting techniques and high doses of pesticides and synthetic fertilizers.

The main producing regions are mainly located in the central-northwest portion of Rio Grande do Sul, but soybean cultivation is found throughout the state, as shown in figure IV.

Another relevant piece of information is the information from IBGE, which shows an increase of 7.43% in the area planted with soybeans in this last year, where the cultivated area went from27,905,371 hectares in 2013 to 32,206,387 hectares in 2015. This shows how much this crop has been replacing others in agricultural production units, since if we consider the last 15 years the area has more than doubled. And especially noteworthy is the increase in crops in the regions of Rio Grande do Sul in areas predominantly occupied by family farmers, such as the Uruguay River Valley. The area with soybeans grew by 60% in 15 years, that is, 2,230,000 hectares were no longer used for other crops. The table below shows the increase in the area and production of soybeans throughout Brazil and in RS. Table III.

**Figure IV: Quantity of soybeans produced in grains on average 2013-2015.**




**Source: Author, 2024.**

**Table III: Evolution of the area and quantity of soybean produced. 2000-2015 - BR and RS**

| Ano | Brasil | | Rio Grande do Sul | |
|---|---|---|---|---|
| | Área plantada (ha) | Quantidade produzida (t) | Área plantada (ha) | Quantidade produzida (t) |
| 2000 | 13.693.677 | 32.820.826 | 3.030.556 | 4.783.895 |
| 2001 | 13.988.351 | 37.907.259 | 2.976.498 | 6.951.830 |
| 2002 | 16.376.035 | 42.107.618 | 3.307.252 | 5.610.518 |
| 2003 | 18.527.544 | 51.919.440 | 3.591.970 | 9.579.297 |
| 2004 | 21.601.340 | 49.549.941 | 3.984.337 | 5.541.714 |
| 2005 | 23.426.756 | 51.182.074 | 4.179.272 | 2.444.540 |
| 2006 | 22.082.666 | 52.464.640 | 3.868.501 | 7.559.291 |
| 2007 | 20.571.393 | 57.857.172 | 3.890.903 | 9.929.005 |
| 2008 | 21.252.721 | 59.833.105 | 3.804.425 | 7.679.939 |
| 2009 | 21.761.782 | 57.345.382 | 3.823.246 | 8.025.322 |
| 2010 | 23.339.094 | 68.756.343 | 4.021.778 | 10.480.026 |
| 2011 | 24.032.410 | 74.815.447 | 4.075.389 | 11.717.548 |
| 2012 | 25.090.559 | 65.848.857 | 4.269.247 | 5.945.243 |
| 2013 | 27.948.605 | 81.724.477 | 4.727.833 | 12.756.577 |
| 2014 | 30.308.231 | 86.760.520 | 4.990.042 | 13.041.720 |
| 2015 | 32.206.387 | 97.464.936 | 5.263.899 | 15.700.264 |

**Source: IBGE/Municipal Agricultural Production, 2018.**

Another significant crop that is growing rapidly in regions with a predominance of family farming is corn. This crop is partly used to feed animals, but has gained importance in recent years as a way of selling surplus produce on farms and as a crop rotation.

The cultivation of corn for commercialization is another highlight of PRONAF financing, and it is making significant progress in the areas of family farmers, especially in the North of Rio Grande do Sul. This corn, which was originally grown to feed families and animals, is now produced for trade or export.

According to MAPA (2019), the American continent is responsible for approximately 52% of all corn produced in the world - one of the main agricultural commodities traded on international markets in the last decade. Among countries, Brazil is the third largest producer of corn in the world, producing approximately 6.5% of the total produced in the world. It is surpassed by the United States, which produces approximately 37%, with an emphasis on ethanol production, and by China, which produces 21% of the total world production.

Rio Grande do Sul is currently the fourth largest producer of corn grain in Brazil, surpassed by the states of Paraná, Mato Grosso and Minas Gerais. According to the IBGE Municipal Agricultural Survey, RS produced 5,563,555 tons of grain in 2015. Considering the last decade, the state has shown a modest increase in the amount produced, going from an average of 4,657,193 tons in the period 2000-2002 to an average of 5,060,732 in the period 2011-2015. It should be noted, however, that the area planted with this crop fluctuated throughout the period from 2000 to 2015. In the last decade, in general, the trajectory was a decrease in the planted area, although not sharply, contrasting with the increase in the amount produced. There was an increase in productivity, especially through the use of larger quantities of chemical fertilizers and genetically modified seeds, among other techniques.

The reduction in corn cultivation areas is more significant on large properties and is directly associated with the low international prices of the product. Even though corn can be harvested twice in the same year in some regions of the state, it is not attractive. And it is also a product that is used less and less each year to feed animals in family units. Furthermore, its cultivation is strongly linked to the agro-industrial production chain of milk, poultry and pork. In order to contain inflation and increase exports of meat and meat products, domestic prices must remain low.

Corn cultivation occurs in practically the entire state of Rio Grande do Sul and the largest quantities produced occur in municipalities with a land structure based mainly on small and medium-sized properties.

Regarding the planted area, on average in Brazil there was a small increase and productivity increased a lot, while in Rio Grande do Sul the planted area in the last decade showed a significant reduction as we can see in the table below and productivity fluctuated on average and was mainly affected in years of prolonged drought. Table IV.

In the 2013-2014 harvest, according to EMATER/RS,The area planted with corn in Rio Grande do Sul is expected to fall by 2.9 percent, reaching 1.005 million hectares. In the 2016-2017 harvest, production in RS was 5.5 million tons in an area of approximately 900 thousand hectares. Therefore, corn destined for grain production decreases each year due to the increase in the area of soybeans, since, in the comparison in terms of price and profitability between the two crops, the latter has a great advantage over the former in recent years. And tAlso, based on the average productivity of 10 years, the corn harvest is expected to reach 5.5 million tons in the 2018/19 harvest. (EMATER/RS, 2019)

**Table IV: Annual evolution of the planted area and the quantity of corn grain produced 2000-2015 - BR and RS.**

| Ano | Brasil | | Rio Grande do Sul | |
|---|---|---|---|---|
| | Área plantada (ha) | Quantidade produzida (t) | Área plantada (ha) | Quantidade produzida (t) |
| 2000 | 12.648.005 | 32.321.000 | 1.537.759 | 3.936.202 |
| 2001 | 12.912.390 | 41.962.475 | 1.675.963 | 6.134.207 |
| 2002 | 12.304.986 | 35.940.832 | 1.464.836 | 3.901.171 |
| 2003 | 13.343.992 | 48.327.323 | 1.416.777 | 5.426.124 |
| 2004 | 12.864.838 | 41.787.558 | 1.303.297 | 3.376.862 |
| 2005 | 12.249.101 | 35.113.312 | 1.206.119 | 1.485.040 |
| 2006 | 12.997.372 | 42.661.677 | 1.422.060 | 4.528.143 |
| 2007 | 14.010.838 | 52.112.217 | 1.365.387 | 5.969.118 |
| 2008 | 14.747.249 | 58.933.347 | 1.385.998 | 5.231.885 |
| 2009 | 14.144.321 | 50.719.822 | 1.385.754 | 4.186.862 |
| 2010 | 12.963.080 | 55.364.271 | 1.151.397 | 5.633.912 |
| 2011 | 13.605.369 | 55.660.235 | 1.100.309 | 5.772.422 |
| 2012 | 15.065.288 | 71.072.810 | 1.119.220 | 3.155.061 |
| 2013 | 15.708.367 | 80.273.172 | 1.033.728 | 5.419.780 |
| 2014 | 15.843.121 | 79.881.614 | 925.514 | 5.389.520 |
| 2015 | 15.846.517 | 85.284.656 | 854.793 | 5.563.555 |

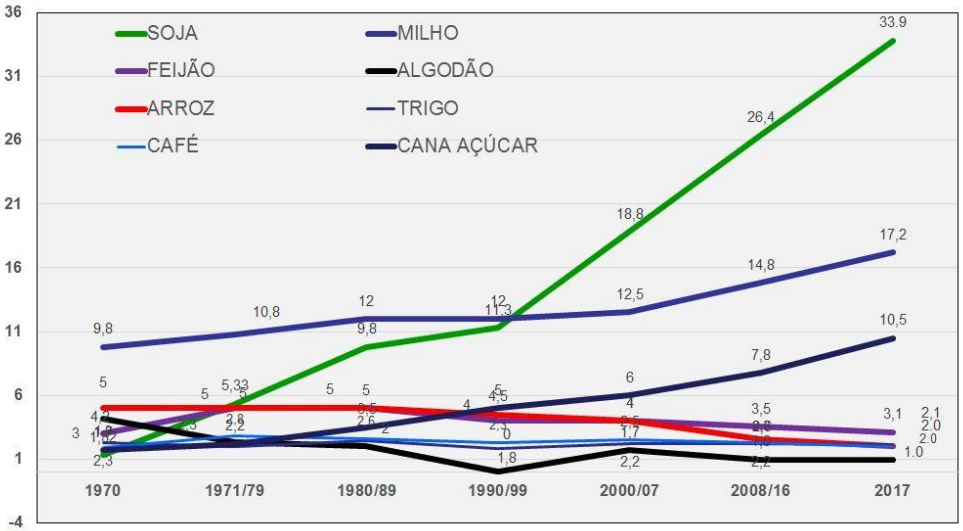
**Source: IBGE - Municipal Agricultural Production, 2022.**

In surveys conducted with farmers and technicians from cooperatives, agricultural companies and EMATER in the north of Rio Grande do Sul, all reported that growing corn is not financially worthwhile due to the prices charged in the market and the production costs. However, when asked why they continue to produce, they revealed that it is to rotate summer crops with soybeans.

Another issue also observed is the increase in winter wheat crops in these areas, and farmers were unanimous in stating "that lands that have winter wheat are cleaner and easier to plant soybeans in the summer".

Another issue that deserves to be highlighted is that soybean, corn and sugar cane crops grow every year to the detriment of others, as shown in the following graph.

**Graph III: Growth of the main commodities in Brazil in millions of hectares, 1970-2017.**




Source: IBGE, 2018

And as data from the main agricultural financing by PRONAF reveal that corn is a crop that absorbs approximately 35% of these resources in RS, this means that in the areas of family farmers it has remained the same or increased and as general data indicate a reduction in the area sown in the State, this occurs in the employer areas.

The graph above shows that the area under food crops has remained unchanged or slightly decreased even though the Brazilian population has more than doubled in the same period. Meanwhile, the areas under corn have doubled and those under soy have grown by more than 1,470% in these 45 years.

## IV. Conclusions

Since the creation of Pronaf in 1996, the program has been changing every year and has brought with it several positive effects on Brazilian rural development, including contributing to improving production conditions. Initially, it favored, for example, the permanence of farmers in the countryside, increased the supply of food, the productivity of some products, and generated employment and jobs, which have a positive impact on some regions of the country and have brought with them positive economic and rural production indicators, among others. However, in recent years, it has also generated a process of indebtedness and contamination of ecosystems by financed crops, with perverse effects on rural Rio Grande do Sul and Brazil.

There is a trend towards an increase in the production of agricultural commodities worldwide, whether for the production of biofuels or for fast food, for example. The diet of the majority of the world's population has changed a lot since the Green Revolution, and with it, eating habits have also reduced the number of foods available to families. Today, the majority of the world's population uses half a dozen of the same products in their diets, no matter where they are in the world.

Another important issue is the increase in demand and, consequently, in the relative prices of commodities, with the inclusion of millions of new consumers in the local and global economies, representing a great opportunity for Brazil, which has exceptional conditions to meet this growing demand, due to its availability of arable land, energy and mineral sources, entrepreneurial capacity and technology. In a cold analysis of the situation where only the capacity to increase production is perceived, without considering environmental costs, for example, Brazil has abundant resources to increase productivity, especially in the less developed regions of the country. This, considering only the increase in income, which may represent an opportunity to advance in the reduction of regional inequalities.

The incorporation of new consumers each year in Brazil is also an opportunity for the development of increased agricultural production in the poorest regions. The profile of society's demand has been changing considerably with the incorporation of new social classes with higher average purchasing power, implying a regional redesign of the consumption map, and creating new niches for the export of quality agro-industrialized products, and also for agro-ecological foods, for example.

However, as observed in the data above, the production of commodities for export is growing significantly in family farming regions. The concentration of agricultural financing, both for operating costs and investment, from PRONAF reveals a strong tendency for this situation of food insecurity to worsen.

The increase in the area planted with soybeans and corn on family farms is directly linked to the decrease in other food crops, whether for family consumption or to supply local/regional markets. These crops are heavily dependent on the intensive use of fertilizers, pesticides and modern machinery. And this considerable increase in financing available to farmers each year favors this dependence on external inputs to increase, as well as family debt.

With the decline and aging of the rural population, the problem of social reproduction of family farmers tends to worsen each year. The intensive use of modern machinery and equipment, acquired through financing from PRONAF by many farming families, is making it possible to increasingly lease small areas of land, that is, some portions of family properties for planting soybeans and corn are made available to other farmers.

In the northern municipalities of the state, these “leases” carried out by the most “consolidated” family farmers are expanding in all directions and going beyond the boundaries of the communities and municipalities. The rural landscape is changing every year and the steepest areas are “leveled” with heavy machinery so that they can be sown with the most modern equipment.

Data from field research revealed that more than 80% of family farmers do not have a direct successor, that is, their children do not want to continue in agricultural activities and also show that the expansion of leases will be the future of agricultural holdings in these regions with imported labor.

Another alarming fact is that the constant modifications of agricultural machinery and equipment by industries and their replacement motivated by banks linked to the planting of commodities have generated a constant dependence of farmers on financing that in some cases lasts 10 years, for example.

Therefore, public policies must rethink development in a comprehensive manner and must consider that food sovereignty and environmental recovery are vital for any society that projects itself into the future to be able to distribute the dividends of this process equitably. Continuing to support the disorderly production of commodities in family farming areas is a huge mistake.

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