

Landscape of Family Farming in the Municipality of Naviraí-MS

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Abstract — The municipality of Naviraí - MS doesn't differ in terms of land quality from the then new state of Mato Grosso do Sul created in 1977. However, the process of formation of the municipality began in the 1930's. The municipality of Naviraí and region is an agricultural production hub, with a prominent position in grain production, with the crops of corn, soybeans, cassava and sugar cane, in addition to agricultural production developed by family farming that meet the local market and public policies such as the Food Acquisition Program – PPA and the National School Feeding Program – PNAE. Thus, this work aimed to provide an overview of family agricultural production and public policies available to farmers in the municipality of Naviraí - MS. It was identified that the municipality has a great diversification in production and that it has been one of the protagonists in family agricultural production, with emphasis on horticulture being one of the largest producers in the state. This role is a reflection of the concern of Municipal, State and Federal Public Management in developing policies that foster local development, however, the minimal access of farmers to rural credit policies such as PRONAF was identified, soon it becomes necessary more publicity and technical support for greater reach of PRONAF, raising family farming in Naviraí - MS to even higher levels.

I. INTRODUCTION

Responsible for meeting the population's food needs, family farming is one of the oldest activities in the world, that in addition to producing food, moves the economy, brings social, environmental and cultural impacts. This activity over the years has been synonymous with the diversification of food production, in addition to contributing to local and regional development, the fixation of man in the countryside having more sustainable agricultural practices, enabling greater safety and quality in the food supply, contributes to the preservation of the genetic heritage of cultures, preservation of traditional knowledge, among many characteristics that elevate the importance of Brazilian family farming.

Despite its high relevance to society, this family activity is experiencing serious difficulties in aspects related to the low level of education, access to credit, technologies, tools, aspects related to management, obstacles in the sale of products and problems related to infrastructure. The sustainability of family farming depends on public policies of the three entities of the Federation (Federal, State and Municipal) that will assist rural producers, since the State is responsible for ensuring the perpetuity of activities that contribute to local development, regional and national.

Therefore, it is essential for efficient public policies to be created to understand the reality of this activity both in social, economic, environmental and cultural aspects, as well as in the main cultures of the productive matrix of family farming. Once these aspects are known, public policies will meet the main needs and needs of these farmers who play a very important role in society.

Mato Grosso do Sul is one of the main states in agricultural production in Brazil, in this state the municipality of Naviraí - MS is located in the southern region, which has been a reference municipality in regional development in the Microregion of Iguatemi. Therefore, this study aimed to provide an overview of family agricultural production and public policies available to farmers in the municipality of Naviraí - MS.

a) The Mato Grosso do Sul state

Due to the great debate that has been taking place for decades among the population of Mato Grosso, political, economic, cultural issues, among others, where the discontent and anxiety of the Mato Grosso people was already clear and notorious, so that the federal government would carry out the division of the state, with the main objective of making the governability of the then large state viable [1].

This entire movement culminated with the creation of the state of Mato Grosso do Sul, through the publication of Complementary Law nº 31, October 11, 1977, and the implementation of the state in 1979. At the time, the state after being implemented was made up of 55 municipalities, with 453.000 inhabitants in the urban area and 547.000 in the rural area, with an area of 350.549 square kilometers with Dr. Harry Amorim Costa as its first governor [1] [2].

And over 44 years old, another 24 cities were created, totaling 79 in 2021, with an estimated population of 2.8 million people [3]. The main base of the economy is agribusiness, but it also stands out worldwide for its natural beauty [2].

In the division of states, Mato Grosso do Sul kept all the research structure existing at the time, which was in the south of Mato Grosso [2] [4]. The then created state of Mato Grosso do Sul is located in the central west region of Brazil, bordering the following countries Paraguay and Bolivia (1103 km) and with the following Brazilian states: Mato Grosso, Goiás, Minas Gerais, Paraná and São Paulo [2].

A Term of Adjustment was signed on February 8, 1979, which had the objective of establishing an administrative coexistence, seeking to streamline economic development activities through assistance between the parties aiming at the transfer of the existing patrimony and documentary collection that was already owned to the territory of Mato Grosso do Sul [5].

After 44 years of implementation in the state of Mato Grosso do Sul, the then young Brazilian state, became one of the largest grain producing states in the country, having the 5th largest cattle herd, with national prominence in the raising of pigs, poultry, fish, in the production of honey, cellulose, ethanol, among other agribusiness activities [2] [3].

b) The municipality of Naviraí

The municipality of Naviraí - MS does not differ in terms of land quality from the then new state of Mato Grosso do Sul created in 1977. However, the process of formation of the municipality began in the 30s. President Getúlio Vargas, aware of the potential of the lands in the Midwest region in which they were mostly unproductive implemented a process of development and colonization of the State. What would later be called Naviraí happened after the national context of the March to the West, which was a national policy that began in the 1930's, during the government of President Getúlio Vargas, in the period known as the Estado Novo. In this context, in 1937, the project began, which had as its central premise to promote economic integration and encourage the settlement of areas

in the Brazilian Midwest, which were underexplored and presented great opportunities for progress [6].

Therefore, the municipality of Naviraí was created as a result of a policy of occupation and private colonization promoted by the Federal Government in the early 1950's. These policies sought regional integration and development, bringing development to various locations and regions of the country. Such measures brought important transformations that allowed the process of land occupation, land tenure reorganization and local production based on agricultural activity, which was one of the main sources of economic gains over the years [7] [8].

The beginning of its foundation occurred in 1952 by Ariosto Riva and other companions, creating in this region the Colônia Vera Cruz Mato Grosso Ltda. resulting from the acquisition of two plots corresponding to a total area of 18.997 hectares. Later in 1963 the headquarters was called the "golden city" of the Southern Cone. The name of the municipality comes from an indigenous word that named a river in the locality. According to indigenous tradition, the words VIRÃ (purple/purple), Í (suffix for small), ÌVIRAÍ (small bush), NA (impregnate), I (river, stream) can mean either "small river impregnated with purple bushes", or "river impregnated with small purple trees" [9][10].

In 1958, through State Law No. 1195, of December 22, 1958, Naviraí was named as the district of Caarapó. A few years later, in 1963, the district was emancipated, elevating it to the status of a municipality through the 1944 State Law of November 11, 1963, which dismembered the lands of Caarapó [7] [11].

Naviraí is located in the south of the state of Mato Grosso do Sul, located 345 km from Campo Grande, capital of the state, has an estimated population according to the IBGE of 55.689 people, the municipality has a territorial dimension of 3.189 km² and an HDI (Human Development Index) of 0.7. The municipality is located in a strategic region where important highways cross the locality. BR 163 is one of the main transport and connection corridors to other regions, MS 487 connects the region and the State of Paraná, and MS 141 connects the region to BR 267, connecting to some cities in the Eastern Region. In addition, there is river transport with the support of 3 ports, located on the Paraná River in the Southern Cone region [3][12].

According to the Secretary of State for the Environment and Economic Development – SEMADE, the municipality of Naviraí is located in a region known as Cone-Sul, formed by 8 municipalities: Eldorado, Iguatemi,

Itaquiraí, Japorã, Mundo Novo, Naviraí, Sete Quedas and Tacuru. This region is based on agricultural production, with a prominent position in grain production for the municipalities of Naviraí and Itaquiraí, with corn, soy and sugarcane crops, in addition to agricultural production developed by family farming. Among these municipalities, the most notorious economic hub is the municipality of Naviraí. In addition to the predominance of agriculture, the municipality has been showing growth in other segments such as industry and agribusiness, mainly in the food sector, in the processing of meat, grains, cassava, milk, sugar and alcohol, among other foods, with the verticalization of production [2].

Studies carried out by Pereira et al. (2017) [13] reinforce that of the 16 municipalities that make up the Microregion of Iguatemi in the state of Mato Grosso do Sul, where agricultural activity is one of the most important, Naviraí is the most prominent. Due to its population that is larger than other cities, achieving significant growth over the years, and the GDP that is above average. These factors have made the municipality a hub of the micro-region and can take the lead in the search for the region's development.

c) Family Farming in the municipality of Naviraí

According to Federal Law 11.326/2006 [14], anyone who practices activities in rural areas is considered as a family farmer, simultaneously meeting the following requirements:

"I - does not hold, for any reason, an area greater than 4 (four) fiscal modules; II - predominantly use labor from the family itself in the economic activities of its establishment or enterprise; III - have a minimum percentage of family income originating from economic activities of your establishment or enterprise, as defined by the Executive Branch and IV - run your establishment or enterprise with your family" [14].

According to Landau et al. (2012) [15] a fiscal module in the municipality of Naviraí corresponds to 45 hectares, thus a family farmer in this municipality is considered to be one who holds up to 180 ha. IBGE data (2017) [16] show the land distribution profile according to the size of the properties. According to Table 1, it is observed that, on average, up to 42.79% of establishments are in this range. However, it cannot be affirmed that this percentage corresponds exclusively to the lands where family farming is developed.

Table 1: Land structure in the municipality of Naviraí - MS

			2017	
Municipality	Total Area Group	Total	Family Farming – no Total	Family Farming – yes Total
Naviraí (MS)	Total	442	253	189
	More than 0 to less than 0.1 ha	6	3	3
	From 0.1 to less than 0.2 ha	4	3	1
	From 0.2 to less than 0.5 ha	4	2	2
	From 0.5 to less than 1 ha	6	2	4
	From 1 to less than 2 ha	17	6	11
	From 2 to less than 3 ha	5	-	5
	From 3 to less than 4 ha	12	6	6
	From 4 to less than 5 ha	7	2	5
	From 5 to less than 10 ha	26	10	16
	From 10 to less than 20 ha	87	14	73
	From 20 to less than 50 ha	50	16	34
	From 50 to less than 100 ha	21	10	11
	From 100 to less than 200 ha	28	12	16
	From 200 to less than 500 ha	54	54	-
	From 500 to less than 1,000 ha	34	34	-
	From 1.000 to less than 2.500 ha	51	51	-
	From 2.500 to less than 10.000 ha	25	25	-
	10.000 ha and more	3	3	-
	Producer without area	2	-	2

Source: Prepared by the authors based on data from the Agricultural Census – IBGE (2017)[16].

In Naviraí there are two areas that house most of the family farmers, they are: the Juncal Settlement and the Green Area. Created on August 31, 2001, with an area of 24.531.67 hectares, the Juncal Settlement was created peacefully through a settlement project (PA) with capacity for 114 families [17].

The green area is located on Rodovia MS 141 – Km 03, with a total area of 42 hectares. The area is known as Distrito Verde, as it is an agricultural community, with projects financed by the federal, state, municipal and other institutions. The District has 34 families, 46 men and 35 women. The District's agriculture is based on the production of vegetables, fruits, vegetables and honey [18].

These two producing regions of the municipality have the support of organizations that work with the aim of strengthening the production processes and especially of

marketing and production management, they are the Women's Association of Settlement Juncal (Amaju), Navieraiense Association Terra e Paz (Antep), Naviraí Family Farmers Cooperative (COAF-NV) and Juncal Settlement Producers Cooperative (Coopaju).

The analysis carried out by Silva and Ferreira (2019) [18] at COAF-NAV, founded in 2012, and working with producers in the District of Verde, showed that the number of members tends to grow annually, they are mostly male, over 35 years old. In the Verde District, the production consists of vegetables, fruits and honey, among which vegetables stand out the cabbage, parsley, watercress, mango, pineapple and lemon. Most of this production is sold in Naviraí, with 52% destined for schools and hospitals; 35% to markets and fairs 13% is distributed in neighboring cities.

Amaju is the Juncal Settlement Women's Association, made up of 18 women beneficiaries of the National Agrarian Reform Plan - PNRA. It was created in 2007 to initially commercialize sweets and semi country chicken. Currently the association is a member of COOPAJU. Currently, the association has seven women aged between 50 and 59 years [19].

II. PUBLIC POLICIES DEVELOPED IN THE AGRICULTURE OF NAVIRAÍ – MS

a) PRONAF as the first public policy to encourage and strengthen Brazilian family farming

Over the centuries, family farming has always been on the sidelines of public policies in the three spheres of the State, making this noble Brazilian activity unattended [20]. One of the factors that allowed this context is due to the fact that policies developed for rural areas since the colonial period benefit more employer agriculture [21] [22].

However, this context began to improve after the promulgation of the Federal Constitution in 1988, when several social movements and organizations called for policies to promote family farming. Therefore, in 1995, the National Family Agriculture Program (PRONAF) was created, which was later implemented by Presidential Decree N°. 1,946 in 1996 [23] [24]. Pimentel and Claudino (2020) [25] reinforce that the debates around public policies that benefit family farming gained more strength after the promulgation of the Federal Constitution.

Sousa and Niederle (2021) [26] point out that until the 1990s there was no specific national public policy to assist family farming. Therefore, PRONAF was the first public policy aimed at this segment [27]. The Program was created with the objective of encouraging the development of family farming, through the provision of financing for the production, acquisition of equipment and infrastructure in rural establishments with special interest rates [20] [28].

In addition, the authors add that the Program's premise is to provide the economic development of the farmer, as well as his permanence in the field. On the other hand, PRONAF proposes to socially strengthen family farming, in order to promote rural development, with increased productivity, improve the quality of life of these farmers, in addition to inserting them in the market [29].

Among several criteria defined in different PRONAF modalities and subprograms, one of the main ones for accessing rural credit is to qualify as a family farmer, as defined in Law 11.326, of July 24, 2006. This law defines the guidelines for the formulation of public policies for

family farming, in addition to defining the criteria and characteristics that delimit the family farmer [14].

PRONAF has four existing financing modalities, being used for funding, marketing, investment, industrialization or integration of quotas by beneficiaries in agricultural production cooperatives. Each modality has its criteria, credit limits, terms and interest rates depending on the financing purpose. Rates vary from 3% to 4.6% per year, with payment terms and advantages [30] [20] [31].

Within each modality there are subprograms destined for several beneficiaries, being the credit lines: Pronaf costing, more food, microcredit, agroindustry, FGPP - RES. 4801, Art. 1, agroindustry (investment), agrarian reform, semiarid, quota shares, women, forest, agroecology and youth. While PRONAF subsidizes the development of family farming through financing, the National School Feeding Program (PNAE) and the Food Acquisition Program (PAA) act as supporting factors in expanding the insertion of family farming products in the market [21] [47].

b) Public policies for the inclusion of family farming products in the market: National School Feeding Program (PNAE) and the Food Acquisition Program (PAA)

On June 16, 2009, the federal government published Federal Law 11,947, which amended Federal Law 8913 of July 12, 1994, providing measures and providing for the provision of school meals and the Direct Money Program at School to basic education students, changing all previous laws [32].

Among all the deliberations contained in Federal Law 11,947, in addition to the states transferring to municipalities the responsibilities of feeding students enrolled in basic education, an article published in the Law at the time came as a great challenge to be met in thousands of municipalities in Brazil regarding the acquisition of foodstuffs [32].

Article 14 of Federal Law 11,947 of June 16, 2009, determines that of the total financial resources transferred by FNDE, under the PNAE, at least 30% (thirty percent) must be used in the acquisition of foodstuffs directly from agriculture family and rural family entrepreneurs or their organizations, prioritizing agrarian reform settlements, traditional indigenous communities and quilombola communities [32].

As Federal Law 11.947 entered into force from the date of its publication, in Brazil several municipalities, mainly in the North, Northeast and Midwest regions, had difficulties in complying with the legislation a priori, since small producers were not yet organized in associations or

cooperatives, as well as, as a small individual producer prepared to issue invoices and logistics for the delivery of products, a situation that in many cases took up to 5 years to adapt to the new legislation [33].

Although the Midwest region had the most difficulties in adapting to the PNAE, the state of Mato Grosso do Sul was the first to adapt to the new legislation, and among the most prominent municipalities in the state, the municipality of Naviraí over the years it has been standing out, as it has through public policies introduced in family farming that has allowed it to reach rates much higher than what is determined by legislation, which means that basic education students have quality food [33].

c) Food Acquisition Program – PAA

Within the logic of decentralized management, the theme of food and nutrition security gained space on the Brazilian political agenda with the creation, in 1993, of the National Council for Food and Nutritional Security (CONSEA), under the Presidency of Itamar Franco (1992-1994). A set of actions was aimed at family farmers, with a double objective: to increase their income and to increase the supply of agricultural products for food. As for the first objective, it is important to consider that most families in conditions of misery and poverty in Brazil are family farmers [35].

The Family Farming Food Acquisition Program – PAA was created from an articulation of the National Council for Food and Nutritional Security – CONSEA with the Federal Government, being constituted as a structuring action in the context of the Zero Hunger proposal. Established by article 19 of Law 10.696/2003, the PAA is developed with resources from the Ministries of Social Development and Fight against Hunger - MDS and Agrarian Development - MDA. The PAA guidelines are defined by a Management Group, coordinated by the Ministries of Social Development and Fight against Hunger and composed of five other Ministries: Finance; Budget Planning and Management; Agriculture, Livestock and Supply, represented by the National Supply Company - CONAB; Agrarian Development and Education, represented by the National Education Development Fund – FNDE.

The PAA aims to provide food insecure populations with access to food and social and economic inclusion in the countryside, through the strengthening of family farming [35].

According to data provided by the Ministry of Social Development, the first PAA food purchases were made in 2003 from agrarian reform settlers at the Itamaraty Farm in Mato Grosso do Sul. Since then, the PAA has made important advances in terms of ensuring access to food,

promoting food and nutritional security for the population and supporting family farming [35].

Since its inception, the PAA modalities were managed directly by CONAB, or executed by states and municipalities with agreements with the Federal Government. As of Resolution No. 50 of September 26, 2012, the Institutional Purchase modality started to work through Public Tenders, in line with the functioning of the National School Feeding Program (PNAE). In 2013, the old agreements were exchanged for a Term of Adhesion by the states and municipalities which were interested in participating in the PAA. A new management was formed, where producers received payment according to the delivery of the products in a Banco do Brasil account, exclusive to the PAA [35].

In the Institutional Purchase modality, the PAA is one of the integrants of actions related to school feeding in the states and municipalities. However, there is no obligation to participate in the Program and its execution depends on a budget allocation established annually and on the interest of eligible institutions. Anyway, this PAA modality, in the old format of Food Acquisition to Serve School Feeding, started the association between family farming and school feeding, later expanded with Law nº 11.947/2009 [32] that regulates the Program National School Feeding (PNAE). Article 14 of this Law provides that:

“Of the total financial resources transferred by the FNDE, within the scope of the PNAE, at least 30% (thirty percent) must be used in the acquisition of foodstuffs directly from family farming and rural family entrepreneurs or their organizations, prioritizing settlements of agrarian reform, traditional indigenous communities and quilombola communities [32]”.

Although there are difficulties, participation in the PNAE opens up for the agrarian reform settlers the possibility of greater insertion and direct participation in the local economy, in addition to contributing to the maintenance of traditional eating habits.

The purchase of products from family farmers is carried out through Public Calls, which establish, in advance, a price list. These should not be greater than those practiced in wholesale and retail food, so as not to burden public purchases in relation to conventional bidding for products for school meals. At the same time, the reduction of marketing links through direct and local purchase can enable family farmers to receive values above those found in their traditional sales channels [36].

The PAA and the PNAE have suffered and are being criticized, it is clear that their existence is recognized and

they strengthen family farming as a food producer, it fosters the Brazilian economy by integrating other sectors of society.

d) Municipal public policies developed in family farming in Naviraí – MS

Since the 1990s, there had been an area of 20 alqueires in Naviraí purchased by the municipality with the aim of building an agricultural school. This area was located at a distance of approximately 7 km from the city center. However, the school project did not evolve and this area was donated to the federal government to build a prison in 2001. The prison area occupied 3 alqueires, with the other 17 alqueires in a situation of abandonment. In view of this situation, in 2005, AGRAER rural extensionists, represented mainly by Agronomist Ronaldo Botelho, decided to start work with the competent bodies to reintegrate the area that the prison did not use for the municipality again. And with the possession of this area, the Green District Project began in Naviraí.

The Green District project was designed to primarily serve those farmers in the “Feira do Produtor Rural”, who were mostly tenants and did not own the land where they were producing. In this way, the total area of the Green District, which is approximately 43.4 hectares, was divided into 34 properties of 1.2 hectares for each family, already containing a 32 m² house, a semi artesian well and a community water reservoir. The only thing the project recipients would pay for would be the construction of the house.

In addition to the farmers who already had experience in the production of vegetables, some people who had no direct connection with agriculture were also awarded an area in Distrito Verde. The biggest challenge was to provide conditions so that these people could produce satisfactorily so that they could sustain themselves and evolve both in the technical part and in the economic and social parts.

According to the project's mentor, Agronomist Ronaldo Botelho, the main objective of Distrito Verde was to create opportunities for access to land, food responsibility, price balance, income, the generation of new jobs, the reduction of the circulation of produce on the roads and supplies.

At first, there was a certain fear among farmers about moving to a location close to a federal prison. However, after the awareness work carried out with the people about the opportunity and also about the safety of the place, many interested people started to appear. Subsequently, people were selected through interviews and questionnaires carried out by AGRAER technicians.

After the initial period of implementation, there were some difficulties regarding technical, economic and relationship issues among some farmers. One of the difficulties presented was the impossibility of accessing rural credit at first, due to the fact that the producer would only have the title deed after the settlement of the 32 m² house with the Housing Agency of Mato Grosso do Sul (AGEHAB).

One of the most outstanding characteristics of family farming is the diversification of production, which allows farmers to produce and generate income during the twelve months of the year. In addition to the economic, social, environmental and cultural benefits of this activity, it is the result of this construct, production, which makes it possible to generate income and provide a better quality of life for producers. One of the main channels most used in Brazilian municipalities for the sale of products from family farming is open markets [37].

As it is considered an easy-access, less bureaucratic and more viable marketing channel, farmers choose this channel due to its ease. Therefore, in Naviraí, many rural producers sell their products at Feira da Lua, Feira do Mercado Municipal and in strategic places in the city where family farmers park their vehicles and sell their products. While another portion sells its products through middlemen, restaurants, bakeries, supermarkets, PNAE, PAA, among others.

The Municipality of Naviraí - MS, through the Economic Development Management, has all the equipment and agricultural implements necessary to serve family farmers in the municipality. In the rural settlement, a green district like any other family farmer in the municipality, which greatly favors the entire production system of family farming in the municipality.

As this is an activity carried out in the countryside, it is essential to maintain the local roads that connect farmers, suppliers and other agents in the production chain, allowing for the logistics of products and inputs from the field to the city. According to the Municipality of Naviraí, the municipality has 900 km of side roads in its territorial area that provide access to various rural properties, being important channels to transport agricultural production from the countryside to the urban environment, allowing access.

e) Rural Extension, Technical Assistance and Agricultural Research - AGRAER.

The Agrarian Development and Rural Extension Agency - AGRAER, an entity of the state executive, co-responsible for the promotion of rural development, linked to the State Secretariat for the Environment, Economic Development, Production and Family Agriculture

(SEMAGRO), acts in the definition of provision policies of services and coordination of the implementation in the activities of Technical Assistance, Rural Extension, Agricultural Research, Cartography, Land Regularization and Supply and other services related to the development and improvement of agriculture and livestock, aimed at rural producers, their families and organizations (Individuals and Legal Entities) with priority given to family farmers, namely, traditional farmers, settlers, indigenous people, quilombolas, fishermen and aquaculturists [38].

It is among the institutions authorized to issue the Pronaf Aptitude Statement. The Declaration of Aptitude (DAP) to the National Program for Strengthening Family Agriculture (Pronaf) functions as the identity of the family farmer. It is what allows agricultural families access to different public policies, such as: financing (Pronaf), agrarian reform credits (Federal Government settlements), rural housing program, product certifications (seals), professional training courses (Pronatec), food sales in schools (school lunches), hospitals and military institutions, among others. "DAP is the gateway for family farmers to public policies to encourage production and income generation. Currently, it is estimated more than 5.1 million active DAP's throughout Brazil. In Mato Grosso do Sul, 18.153 family farmers are in possession of the document, while 67 associations or cooperatives make use of the Legal DAP [39].

f) Inspection, Inspection, Health Education and Agricultural Control - IAGRO.

The State Agency for Animal and Plant Sanitary Defense of the State of Mato Grosso do Sul - IAGRO, was created by Decree-Law nº 9, of January 1, 1979. Linked to the State Secretariat for Production of Agrarian Development, Industry, of Trade and Tourism [40].

IAGRO, through the delegation of the Ministry of Agriculture, Livestock and Supply, carries out the actions of the Animal and Plant Sanitary Programs that aim to: implement public education, health, inspection and inspection policies to promote, maintain and restore animal health and plant, the quality of its products and by-products through health protection, control, inspection and inspection of products and by-products of agricultural origin, inspection of agricultural inputs and biosafety activities, to ensure human health. Fulfill and enforce the operational obligations delegated by the Executive Branch, dealt with in the legislation regarding the protection of animal and plant health and the control and inspection of agricultural products, goods and services, processes and technologies achieved by the agricultural health care system [41].

It provides technical and administrative support to the Municipal Animal Health Councils [42] and the Municipal Council for Sustainable Rural Development [43].

Mato Grosso do Sul's ARTE Seal will enable handcrafted products of animal origin to be marketed throughout Brazil. Obtaining the ARTE Seal is a certificate that the production is in compliance with good agricultural practices and the products are in compliance with good manufacturing practices and enable them to increase income, add value to production and expand markets [44].

III. OBJECTIVE

The objective this paper was make an overview of family farming production and public policies available to farmers in the municipality of Naviraí - MS

IV. METHODOLOGY

a) Research Outline

This work was carried out through a bibliographical survey on family farming in the municipality of Naviraí MS. Data were collected from public agencies that provide assistance to family farmers in the city, as well as from publications on the topic discussed, classifying it as qualitative research [45].

b) Characteristics of family farming in Naviraí MS

As already mentioned, the profile of family farming (Table 2) in Naviraí MS is similar to that of the entire state of Mato Grosso do Sul and Brazil. Producers with complete elementary education level, families where father, mother and a large percentage of their children work in the cultivation of the land, live on rural properties with water, electricity and, in many cases, even connectivity.

They cultivate and market their products and live on a family income between 2 and 3 minimum wages. In most cases, they sell their products without the presence of the middleman, at open fairs, commerce and or even sell their products from the property and buyers will look for the products at the property.

As it is a municipality where the vast majority of properties are not available, a long distance to the center of the municipality facilitates the commercialization process, and also because the connectivity allows for better communication with the buyer, factors that have helped in daily activities of the family farmer.

Data were collected from the Municipality of Naviraí, on the Juncal settlement and also on the Verde District,

two poles of great importance for family farming in the municipality. As well as the last agricultural census in Brazil, which was in 2017.

V. RESULTS AND DISCUSSION

The land ownership structure in the municipality of Naviraí - MS is mostly concentrated in large land properties. This fact becomes evident since in 2017 of the 442 rural establishments in the municipality, only 189 (42.8%) were family farming, while 253 (57.2%) were not family farming according to the criteria defined by law . As illustrated in the data in the table 1 below.

Table 2 - Number of rural establishments in Mato Grosso do Sul and in the municipality of Naviraí - MS

	Family farming	%	No family farming	%	Total
Mato Grosso do Sul	43.223	60,7%	27.941	39,3%	71.164
Naviraí	189	42,8%	253	57,2%	442

Source: Prepared by the authors based on data from the Agricultural Census – IBGE (2017).

What differs from some Brazilian states as mentioned by Araújo et al. (2021) [46], in the state of Pará, family farmers represent 85% of the total number of rural establishments. In the state of Paraná, according to data from the 2017 Agricultural Census, 228.888 properties (75%) are family farming establishments. Most of the farmers who run the rural family farming establishments in Naviraí - MS are in the age group of 55 to less than 75 years of age reaching 99 farmers (52.4%) while 18.5% are 45 years old or younger. of 55 years old, 12.2% are between 35 and under 45 years old, as the percentages are allocated in the class of 25 to less than 35 years old with 5.8% and 75 years old above with 11.1% [16].

Therefore, it is clear that most of the family farmers who run the establishment are middle-aged above. Of these 189 farmers, 175 (92.5%) know how to read and

write while 14 do not, in relation to education only 24 (12.6%) have completed elementary school, in relation to high school 37 (19.5%) have this training in some modality being EJA, high school technician, former scientific, classical or regular high school education, only 27 (14.2%) have higher education (undergraduate) and only 1 has a master's degree, so that the others have incomplete primary education and have never attended school. This reality is in complete contrast to the other 236 establishments that are run by farmers who are not part of family farming, in which the level of education is well above that of family farmers, a fact which is observed that 109 (46.1%) of the farmers have some college degree, 57 (24.1%) have high school and 27 (11.4%) have primary education, while the other parcels are incomplete primary and a very small percentage never attended school.

Table 3 - People employed in rural establishments in Brazil, Midwest Region, Mato Grosso do Sul and in the municipality of Naviraí - MS in 2017

	Family farming	%	No family farming	%	Total number of establishments	%
Brazil	10.115.559	67,0%	4.989.566	33,0%	15.105.125	100%
Midwest	557.149	46,8%	632.678	53,2%	1.189.827	100%
Mato Grosso do Sul	102.323	40,1%	152.648	59,9%	254.971	100%
Naviraí - MS	497	20,5%	1.929	79,5%	2.426	100%

Source: Prepared by the authors based on data from the Agricultural Census – IBGE (2017).

According to Table 2, from a total of 2,426 people employed in rural establishments in the municipality of Naviraí - MS, 497 people (20.5%) are employed in family

farm establishments and 1929 workers (79.5%) do not qualify as not family farmers.

In relation to people employed in the rural countryside in Brazil, 67% of the rural workforce is allocated to family

farming, in the Midwest this reality is different with only 47% of the workforce coming from family farming. The state of Mato Grosso is a reflection of the Midwest region with 40% of the workforce in family farming agricultural establishments. In the municipality of Naviraí, the reality of the labor employed in the countryside is totally different, with only 20.5% of the labor originating from family farming [16]. However, it is noteworthy that it is observed in the municipality of Naviraí - MS that there are numerous small productions of horticultural products produced in urban areas and on the outskirts of the city these products are marketed as if they were from family farming, but from urban production.

Within this scenario experienced in the municipality of Naviraí, it contrasts with the reality experienced in Brazil, in the Midwest region and in the state of Mato Grosso do Sul, where the cultivation of sugarcane, eucalyptus and commercial agriculture are activities developed on a large scale in the State and in the municipality where the large agribusiness workforce in the municipality is employed. And that it has large agribusinesses that employ thousands of residents.

It is a reality that most family farmers have difficulties in accessing equipment, technologies, tools, aspects related to management, marketing, lack of technical assistance, insufficiency of financial resources, among other factors that limit their performance in the field [20]. Knowing that with respect to connectivity, more than 70% of properties

have access to the internet and/or other means of communication, preserved back roads and access to education. In 2017, according to data from the Census of Agriculture of the 189 rural family farming establishments, only 65 received some type of technical guidance carried out by the Government (federal, state and municipal), owned and by cooperatives. Of these, 44 (67%) were carried out by federation entities, while 124 rural establishments did not receive any type of technical guidance [16].

In 2019, the municipality carried out a number of 1.112 repeated visits to rural properties. In 2020, this number decreased, with 895 technical visits being carried out. It is noteworthy that since March 2020 the country has been facing many adversities in all operational aspects due to the sanitary issues of COVID-19, which impacted and will still cause serious damage to family farming.

According to IBGE municipal agriculture data (2019) [45], the main crops exploited in the municipality are listed in table 4. Among the crops, it is known that beans, cassava and watermelon stand out among family producers. Although these species figure with relevance among this class of farmers, the absence of official data on the origin of production does not allow for a precise diagnosis.

Table 4- Species cultivated in the municipality of Naviraí, according to the municipal agricultural survey - IBGE 2019.

State Position*	culture	Planted area (ha)	Harvested area (ha)	Quantity produced (ton.)	Average production yield (kg/ha)	Production Value (Thousand Reais)
20°	total	167.860	167.860	R\$ 458.579,00
18°	oat grain	150	150	150	1.000	R\$ 53,00
23°	sugar cane	14.323	14.323	1.080.051	75.407	R\$ 84.957,00
49°	beans	72	72	154	2.139	R\$ 327,00
8°	manioc	2.265	2.265	45.300	20.000	R\$ 14.838,00
5°	watermelon	120	120	2.400	20.000	R\$ 1.440,00
16°	corn grain	60.000	60.000	252.000	4.200	R\$ 112.203,00
15°	soybean grain	90.000	90.000	225.000	2.500	R\$ 243.675,00
12°	sorghum	260	260	1.040	4.000	R\$ 416,00
10°	wheat	670	670	804	1.200	R\$ 670,00

* Position in relation to the planted area

Source: Prepared based on data from the Municipal Agriculture Survey (PAM) – IBGE (2019).

The productive matrix of family farming is well diversified in the municipality of Naviraí - MS, with a very representative production compared to other municipalities in the state of Mato Grosso do Sul in terms of horticulture. One of those responsible for this expressive production

together with other farmers is the Green District, whose production is based on vegetables, greens and legumes [18]. The table below provides a retrospective of the main crops produced by family farming in Naviraí according to the 2017 Agricultural Census.

Table 5- Main crops produced by family farming in Naviraí - MS and its position in family farming in the State and in total production in 2017

	Culture	Total Production (in tons) Naviraí - MS	Family Farming Production (in tons) Naviraí - MS	% Produced by Family Farming in relation to Total	Position of Naviraí - MS in family farming production	Overall Total Production (in tons) of Mato Grosso do Sul	Production (in tons) of Family Farming in Mato Grosso do Sul	% produced by Family Farming in relation to the Total	Position of Naviraí - MS in the State's total production
Horticulture	Lettuce	280	275	98,21%	5°	8.228	5.536	67,28%	5°
	Almeirão	67	66	98,51%	3°	1.033	861	83,35%	5°
	Broccoli	2	2	100,00%	9°	175	106	60,57%	19°
	Scallion	52	51	98,08%	4°	1.278	821	64,24%	6°
	Carrot	3	3	100,00%	8°	362	248	68,51%	14°
	Coriander	19	19	100,00%	5°	475	397	83,58%	7°
	Green cabbage	26	24	92,31%	7°	1.425	1.021	71,65%	15°
	Bell pepper	1	1	100,00%	10°	443	336	75,85%	23°
	Okra	7	6	85,71%	13°	1.382	1.303	94,28%	24°
	Arugula	57	56	98,25%	3°	1.114	724	64,99%	4°
Temporary cultures	Parsley	58	57	98,28%	2°	647	535	82,69%	2°
	Pumpkin, pumpkin, Jerimum	4	3	75,0%	35°	3.432	2.724	79,4%	52°
	Cassava (cassava, cassava)	45.747	4.004	8,8%	11°	403.080	174.276	43,2%	3°
	watermelon	1	1	100,0%	25°	28.953	7.418	25,6%	79°
	Corn	304.772	101	0,0%	50°	9.232.573	367.225	4,0%	15°
	Soy	275.104	924	0,3%	40°	8.064.607	284.188	3,5%	19°
	Forages for cutting	39	39	100,0%	1°	27.448	1.228	4,5%	7°

Table 5 does not contain data on permanent crops because the 2017 Agricultural Census does not present data on this type of crop in family farming [16]. Regarding the production of family farming horticulture in Naviraí - MS, the municipality occupies a prominent position in all

its products in relation to 79 municipalities in the state of Mato Grosso do Sul, with emphasis on the production of parsley, arugula, almeirão, chives and lettuce. And in other products, the one with the lowest production is the okra occupying the twenty-fourth position [16].

Observing the temporary crops, it is worth mentioning the forage crop for cutting and the production of cassava. Where the forages for cutting are destined to feed milk cows and the production of cassava destined for industrialization in starch factories, which is culturally this production in the municipality.

In addition to family farming producing for their own subsistence, part of the production is destined for sale. One of the most used channels for the sale of products from family farming is the municipal market and open markets. Known as the Municipal Market of Naviraí, it is the place where several farmers sell their products. According to Pereira et al. (2018) [13], the municipal market enables integration and social interaction, integration because it allows farmers to exhibit and market their products in a shared space, making contact with the final consumer more accessible. On the other hand, it guarantees the interaction between farmers and consumers in a single space, strengthening and valuing local culture.

Programs such as PNAE and PAA have the objective of inserting family farming products into the market, ensuring the sale of family farmers' products, bringing development to producers. In the study by Teixeira, (2020) [51] it was identified that the PNAE causes positive impacts for the Brazilian rural entrepreneur, such as: increased income, promotion of social inclusion, improvement in quality of life and ease of access to the market. The graph 1 below shows the financial values and number of contracts for the PRONAF, PNAE and PAA programs in the years 2019 (Table 5) and 2020 (Table 6).

Graph 1: Values in Reais of the Programs: PRONAF, PNAE and PAA in 2019 and 2020 in the municipality of Naviraí - MS

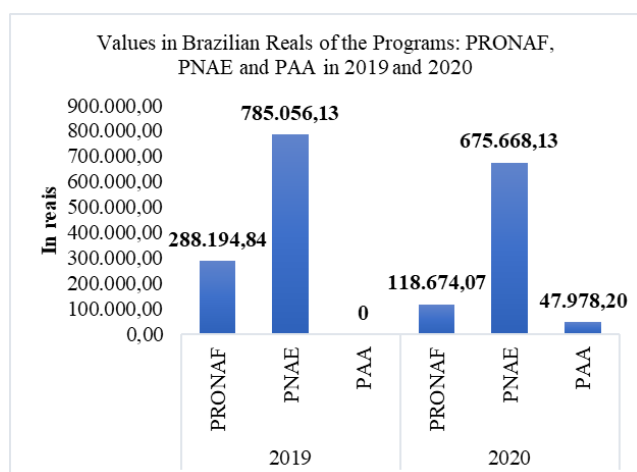


Table 6: Contracts completed in 2019 by type

	2019		
	PRONAF	PNAE	PAA
No. of Contracts	9	38	0

Table 7: Contracts completed in 2020 by type

	2020		
	PRONAF	PNAE	PAA
No. of Contracts	5	49	6

Of the 79 municipalities in the state of Mato Grosso do Sul, the municipality of Naviraí occupied in 2019 the 73rd position in terms of funds received from PRONAF. In 2020, this scenario worsened, given that the pandemic caused by the SARS-CoV-2 virus (COVID-19) took the municipality to the last position in the ranking [47], we cannot mention COVID-19 as the major cause of reduction in PRONAF contracts, since according to public data from the Brazilian Central Bank, in 2019 only 9 PRONAF contracts were executed, which placed the municipality in 73rd position as mentioned above. This shows that the small producer is not having access to this public policy that is so important in the production process for Brazilian food, only 4.76% of family farming establishments had access to PRONAF considering that there was no repetition of contracts in the same property.

PRONAF is an important program of the Federal Government with the objective of strengthening family agriculture, through it the farmer manages to alleviate some adversities in the countryside with the concession of rural credit. Therefore, there is a positive impact with the permanence of man in the countryside; the increase in productive capacity; acquisition of equipment, supplies and technologies; improvement in the infrastructure of the properties; improvement in the lives of farmers; among many other benefits that contribute to rural development [46] [28] [31].

On the other hand, the PNAE had a significant financial volume both in the total value of contracts and in the number of contracts carried out in 2019 and 2020. Although there was a small decrease of about 14% in the value of total contracts, however there was an increase in the number of contracts, increasing from 38 contracts in 2019 to 49 in 2020, enabling greater participation of farmers. As for the PAA, there were no contracts in 2019,

but in 2020, 6 contracts were executed in the amount of BRL 49.978.20.

VI. CONCLUSION

When researching production data from family farming in Naviraí MS, we realized that the municipality invests a lot in family farming, a great example of this is the Juncal settlement and the green district where family farmers have technical assistance, support of agricultural implements at their disposal, health and education, with this support, the production of horticulture and temporary crops has reached prominent positions in production in relation to the 79 municipalities of Mato Grosso do Sul, an example of which is the production of parsley, almeirão, chives and cassava, which are among the first in the state production.

The study identified that although farmers in Naviraí do not have more significant support and insertion in rural credit provided by PRONAF in order to encourage and strengthen their activities, however, although there are these difficulties faced by this class of rural workers, even so, some farmers manage to market their products in programs such as the PNAE, which are acquired for school lunches. This fact demonstrates that farmers have overcome the difficulties faced and managed to guarantee the marketing, income and sustenance from their products from the family, even if there is a deficiency of public policies that encourage, strengthen and develop this activity in the County. However, greater support, incentives and subsidies are essential for this class that is so in need of welfare actions, responsible for supplying a considerable part of the domestic market.

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