



Sustainability and Agricultural Development of family farming in the Calumbi Community, in the county of Corrente - PI

Sustentabilidade e desenvolvimento da agricultura familiar na comunidade Calumbi, no município de Corrente - PI

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ABSTRACT

Taking into account that agriculture is one of the fundamental activities of humanity, family farmers contribute to Sustainable Development. This, in turn, is questioned, among other arguments, due to the difficulty in determining the sustainability of a system. From this perspective, the objective of this study was to evaluate sustainability and family farming in the Calumbi community, Corrente - PI. For that, a case study was used, comprising a qualitative-quantitative research, where data were collected through interviews with the family nuclei of the community. Most of these families lived in rural areas and had their own land suitable for farming, as well as specific natural resources, which makes family farming an accessible activity. However, it is noted that the studied community lacks greater social structures to settle the land and combat the rural exodus. Family farming is important for the process of sustainable development, however, family farmers lack public policies that allow a better insertion in the market and its adequate economic, social, political and cultural reproduction.

RESUMO

A agricultura é uma das atividades fundamentais da humanidade, os agricultores familiares contribuem para o Desenvolvimento Sustentável. Este, por sua vez, é questionado, dentre outros argumentos, em função da dificuldade em se determinar a sustentabilidade de um sistema. Nessa perspectiva, objetivou-se avaliar a sustentabilidade e agricultura familiar na comunidade Calumbi, Corrente - PI. Para tanto, foi utilizado um estudo de caso, compreendendo uma pesquisa quali-quantitativa, onde os dados foram coletados por meio de entrevistas junto aos núcleos familiares da comunidade. A maioria dessas famílias residia na zona rural e dispunha de terras próprias e adequadas para prática da agricultura, bem como recursos naturais específicos, o que torna a agricultura familiar uma atividade acessível. Entretanto, nota-se que a comunidade estudada carece de maiores estruturas sociais para fixação à terra e combate ao êxodo rural. Agricultura familiar é importante para o processo de desenvolvimento sustentável, contudo, os agricultores familiares carecem de políticas públicas que possibilitem uma melhor inserção no mercado e sua adequada reprodução econômica, social, política e cultural.

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Introduction

In recent years, family farming has been growing and developing and becoming increasingly important for the sustainability of production, generation of employment and income, local development and food security for the population.

Family farming is one in which management, property and most of the work come from individuals who maintain blood or marriage ties with each other. May this definition not be unanimous and often neither operational. It is perfectly understandable, since the different social sectors and their representations build scientific categories that will serve certain practical purposes: the definition of family farming, for credit allocation purposes, may not be exactly the same as that established for statistical quantification purposes in an academic study. The important thing is that these three basic attributes (management, property and family work) are present in all of them (Abramovay, 1997, p. 29).

Family farming is a family production nucleus, whose pole is directly connected with the land and with the entire level of agricultural production (Martins, 2001), however, it is not strictly based only on family work (Savoldi & Cunha, 2010). Agriculture based on the rural family has been realizing the needs and new challenges of social and economic change and transformation.

Family farming has its mark on the situation where the family is part. The reduction of the family economy to its economic dimension leaves aside the auxiliary character of the economy in relation to the social structure and values of the patriarchal organization of the rural family, even when it expands and spreads from the city (Savoldi & Cunha, 2010).

Throughout its historical development it has always obtained a place in its economic scope because it is essential to supply basic food in the domestic market. In Brazil, family farming, practiced on small estates, arose on the banks of large properties and never obtained a policy for its benefit. Since the 1990s there have been several changes, significantly in social, economic and political environments in the world (Savoldi & Cunha, 2010). In this context, family farming is highlighted, which has been conquering and transforming an important scenario.

Family farming and all its rural family enterprises are part of a call of the National Policy of Family Agriculture and Rural Family Enterprises (*Política Nacional da Agricultura Familiar e Empreendimentos Familiares Rurais*), according to Law No. 11,326 of July 24th, 2006. This law will define the family farmer or rural family entrepreneur who are those who practice activities in rural areas, meeting in a synchronic way, the following requirements,

I) does not have, in any way, an area greater than 4 (four) fiscal modules; II) predominantly use the family's own labor in the economic activities of your establishment or enterprise; III) has family income predominantly originated from economic activities linked to the establishment or enterprise itself; IV) direct your establishment or business with your family. Family farmers are small farmers, traditional peoples and communities, settlers of agrarian reform, foresters, farmers, extractivists and fishermen (Brazil, 2006).

Family farming is present in all biomes in Brazil, and can be characterized by a great organizational diversity and also by its resilience. These characteristics make sure that in each of the five Brazilian biomes there is food and nutritional sovereignty of the population. However, it is noteworthy that this scenario is affected by climate change, an event that has affected agriculture in general and, particularly, there is a need for adaptation in the face of these changes (Machado Filho et al., 2016), thus, Guilhermino et al. (2020) argue that:

Global climate change and environmental degradation will have negative impacts on agriculture and livestock, especially in regions with arid and semi-arid environment, where the desertification process is advancing strongly. With global warming, due to the increase in the world average temperature, losses are estimated in food production, with serious consequences on its availability and quality, instability in the social and economic spheres, and undesirable changes in natural resources, ecosystems and biodiversity (Guilhermino et al., 2020).

Furthermore, it is important to highlight the importance of Rural Technical Assistance (*Assistência Técnica Rural* - ATER) for these agricultural production centers. According to Vieira et al. (2015, p. 4) Rural Technical Assistance public policies “should promote, through rural environmental education, actions that support sustainable rural development and promote the mitigation of negative socio-environmental impacts, promoting a better quality of life in rural areas”.

The work of Rural Technical Assistance consists in the proposal and implementation of solutions agreed in an improvement plan, which should be elaborated based on the identification of problems through diagnoses established by specific methodology (Gregolin & Souza, 2020).

The rural extension should, therefore, occur continuously and considering the productive and socioeconomic dynamics of the rural family, including the organization of property, access to public policies, management of the production unit, formation and training of farmers, the insertion of their products in the market, the empowerment of the subjects of the field and the diversification of sources of occupation and income (Vargas et al., 2022). Therefore, it is essential to act by Rural Technical Assistance and its policies to provide sustainable development to rural communities such as camps and settlements.

The way of managing family properties, using own property or surrounding properties, own labor, tendency to multiply local genetic materials and participation in short commercialization circuits, brings them closer to agroecological principles (Altieri, 2000). Thus, the objective was from the present study to know the context about Family Agriculture in the county of Corrente - PI and its development and sustainability requirements for rural families in their county.

Methodological Procedures

Scientific research has as one of its purposes the accumulation and understanding of certain facts that contribute, finally, to social development (Angelo Neto et al., 2020). Selltiz et al. (1975) say that scientific research seeks to discover answers to certain questions through the application of scientific methods.

For the execution and development of the research, it is important to determine the theoretical-methodological approach to be used (Angelo Neto et al., 2020). Qualitative and quantitative research approaches use different methods, forms and objectives. Thus, qualitative research comprises a set of interpretative techniques that seek to describe and decode certain signs, which according to Maanen (1979) makes it possible to express the meanings of the social world and reduce distances between actors (researcher and researched), between theory and data, context and action.

As Pope and Mays (1995) point out, although there are distinctions between qualitative and quantitative approaches, it is not correct to state that they have an opposition character in relation to each other, but, on the contrary, both complement each other to approach the researcher with his research object.

The research was carried out in the Calumbi Community (*Comunidade do Calumbi*), located in the county of Corrente - PI, in the southwest of Piauí, with the following geographic coordinates: latitude 10° 26' South, longitude: 45° 9' West, where in the first stage was carried out an analysis of the historical elements through contact with the association of residents, with the objective of understanding the process of formation of family agriculture as well as its main characteristics and social actors involved, in this stage, technical instrumentation was used, bibliographic and documentary research (Gil, 2019).

The second stage was based on interviews with family nuclei, which included the application of structured questionnaires for the collection of information related to lots, family composition, productive aspects of each lot, production destination and problems faced by family units to maintain their production and living conditions.

The third stage was carried out involving field visits in some lots, with the objective of visualizing the productive aspects of the families' plots. Then, the data obtained were tabulated

and grouped (Gil, 2019) in spreadsheets in Microsoft Excel. Quantitative data were expressed as a percentage on the total sample and qualitative data, such as the case of non-directed responses, were interpreted and discussed based on documentation and theoretical support.

Results and Discussion

Objective considerations were obtained from the interviews of 30 actors, who represented their respective family nuclei, allowing us to understand the profile of the interviewees (Table 1). From the data obtained through the interview, we observed the age group from 20 years to more than 70 years of age, with 43.33% of the leaders of the female family groups and 56.66% male, where 70% were married, 26.66 are single and 3.33% are widowed. Regarding to education level, 6.66% were illiterate, 50% had incomplete elementary school, 13.66% had completed elementary school, 10% had incomplete high school, 16.66% had completed high school and 3.33% had higher education. All interviewees called themselves as family farmers, where their way of working was carried out at their own benefits, thus working within their own lot.

Table 1.
General data of respondents (family nuclei).

Variables		Total	
		N	F %
Gender	Male	17	56,66
	Female	13	43,33
Marital Status	Married	21	70
	Single	8	26,66
	Widower	1	3,33
Age Group	20-30	5	16,66
	30-40	8	26,66
	40-50	7	23,33
	50-60	6	20
	60-70	3	10
	70+	1	3,33
Schooling	A	2	6,66
	EFI	15	50
	EFC	4	13,66

	EMI	3	10
	EMC	5	16,66
	ES	1	3,33
Occupation	Family Farmer	30	100
Total of respondents		30	

Note: (A = Illiterate; EFI = Incomplete Elementary School; EFC = Complete Elementary School; EMI = Incomplete High School; EMC = Complete High School; ES = Higher Education).

The low education of the population in the countryside, caused by the meagre investments in education, hinders the more intense development of many Brazilian rural regions, especially from the perspective of development as something more comprehensive than the mere agricultural production of a region. According to Abramovay (2000, p. 380):

Rural development is not reduced to agricultural growth, this is a statement that has become commonplace in academic production and in governmental and non-governmental development institutions worldwide. As relevant as the study of non-agricultural activities in rural areas is, however, the issue of development is not restricted to the possibilities of its expansion. There is a very recent interest in the reasons that explain the dynamism of certain rural regions and the decline of others (Abramovay, 2000, p. 380).

Furthermore, it is highlighted that the development of education in rural, peasant and peasant communities is a means by which the actors of these scenarios seek not only literacy, but also find a means of personal and professional development. This context provides the permanence of young people in the field and also better aggrandizement of the earth. Esmeraldo et al. (2017) say that through education, when studying the PRONERA case, graduates demonstrate a better personal and sociopolitical trajectory. Furthermore, it is considered that the age/age group, as well as the marital status of the settlers brings us important information about the place, as well as provides to understand the social dynamics of the settlement. In this regard, Silva et al. (2020) explain that the permanence and reproduction of the place are provided and continued by the younger settlers, as well as influence female autonomy.

Of the 30 family nucleus interviewed, 24 (80%) reported having children, and 20% who had no children. In the general number of children, 35 people were added, obtaining an average of 4 people per family, and may have a variance of 2 to 6 people in the family. The children of the interviewees lived mostly (62.85%) in the rural area, while 37.15% in the urban area of their municipality, in order to seek improvement in their living conditions. About the

occupation, it was found that 34.28% were students, 42.85% of rural workers, 20% were working outside the field and 2.87% identified themselves as domestic workers (Table 2).

Table 2.

Data from members of family nuclei.

Variables		Total	
		N	%
Number of children	Yes	24	80
	No	6	20
Number of children	General	35	69
Children's residence	Rural area	22	62,85
	Urban area	13	37,15
Occupation	Students	12	34,28
	Work in the field	15	42,85
	Working off the field	7	20
	Housework	1	2,87
Total of respondents		30	100

As for the place of residence of the family nuclei in the Calumbi community, it was observed that components of 27 nucleus permanently resided in the rural area, while 3 lived in the urban area. Of these actors, 28 representatives said that the work in agriculture took place through ancestors who already carried out work related to this branch, which, was perpetuated throughout the generations, improving itself over time. Of the 30 interviews, 2 family nucleus began their life in family farming of their own free will, without any generation bond.

Mingione and Pugliese (1987) highlight the importance of the branches of activity in the occupation of people, as well as the way of organizing work, drawing attention to the role of part-time agriculture (and after pluriactivity) in changing the structural basis of the social organization of agriculture and rural areas. By reducing the exclusive dedication of family members to agricultural activity, growing, as a counterpart, occupations in the non-agricultural labor market, there was greater homogenization and even an unification of the urban and rural labor markets (Balsadi, 2002).

The world of field work has undergone large-scale transformations in recent decades. One of the characteristics that most emphasized this context was the development process that creates the conditions to expand the production of its capital (Mészáros, 2007).

The modernization of the field, based on mechanization and elevation of the production scale, disrupted the traditional functioning of labor markets, implying market dynamics for those workers by tasks, manuals, occasional busy, day laborers, especially non-specialized and

specialized (such as fencers, tractors, vegetables, sugarcane cutters, among others) (Firmiano, 2018). This does not mean, however, the disappearance of temporary and manual work, since mechanization does not allow the complete replacement of the worker with fixed capital (understood here as machinery) in all phases and activities of the production process in family units.

Another major factor that deserves great attention regarding the community studied was the arrival of electricity, where Sauer et al. (2003) affirm that electricity promotes quality of life and agricultural production, development and generation of employment and income. Thus, it is possible to conclude that access to electricity can result in local development.

For Garcez et al. (2020), the permanence in the field depends on a series of constraints. Electricity turns out to be paramount and ensure better quality of life and condition of permanence, since this characteristic leads to other conditions and health needs. Allied to this, Hein and Silva (2019) discuss that together with these conditions, other factors are important for well-being and living conditions, where it is pointed out that indicators such as resources and technological investments also contribute to satisfaction and permanence in the field.

As discussed by Angelo Neto et al. (2020) when studying rural camps, the authors say that in the process of installation until the stay on earth (land here as a place of life and identity), the farmer goes through a process of social violence. In this context, even in communities already consolidated, these violence still persist in a veiled and subtle way, serving as a window for the rural exodus, as well as appropriations through agrarian violence.

According to the results obtained through interviews in the Calumbi community, 2 family nucleus stated that they received technical assistance, the others answered that they had access at some point to technical assistance, however, they stated that they had not had access to technical assistance for a long time, and that they did not have access to technical assistance.

It is known the great difficulty that family farmers face in producing and also draining their production, as well as to have a quality life in rural areas (Bezerra & Schlindwein, 2017). Family farming stands out with a very important role for Brazilian society, which has been gaining strength over time in the country's scenario, encouraging development, job and income generation, food security and local development (FAO/INCRA, 2000), however it still lacks strengthening policies for the sector.

However, family farmers are often still lack information and technical assistance to access some public policy programs, which are paramount to improve, increase and further qualify their income (Paula et al., 2014), which leads them to seek alternatives off the field.

Other situation can also be experienced by them (family farmers), being: little land area, low availability of financial resources, Technical Assistance and Rural Extension (*Assistência Técnica e Extensão Rural* - ATER) insufficient, lack of regulation of handmade processes of food production, difficulties in accessing the market, among others, being these

limiting issues to achieve greater competitiveness and generate the development of properties (Paula et al., 2014).

ATER Public Policies are crucial for the sustainable rural development of family farming. Therefore, in order to understand this importance, we start from a contextualization about the path taken by this policy, from the initial milestone to the present day (Vieira et al., 2015). However, what still predominates in ATER is the diffusion of technological packages of the Green Revolution (*Revolução Verde*) or professionals who act only as facilitators of rural credit. This flawed and superficial action does not allow the understanding of the contexts and peculiarities of each module or lot, so that it will have a full productive, social and sustainable development.

The marketing channels play an important role in the process of distributing products because, in this process, intermediaries arise, and they, in turn, can increase the efficiency of the process, according to Stern et al., 1996. As the results show, the marketing process, the flow of their products took place basically in a free fair where they sold their products, others, in turn, drained their production in the community itself. The flow of production is a factor that should be widely analyzed in any sector, because the way it occurs directly influences the progress of the entire process after production (Lima et al., 2020).

According to Maia et al. (2019), there are several factors that contribute to the difficulties of agricultural production flow, such as the distance between lots and marketing/distribution centers and other logistics infrastructures that end up being characteristics of each site. Therefore, it is understood that poor logistics as a way of displacement and disposal of agricultural production tends to cause negative impacts to the family farmer, causing production losses and consequently losses to the family's income (Maia et al., 2019). These configurations allow us to raise questions about sociopolitical needs aimed at life in the field, as well as to understand these scenarios guiding family agricultural production aligned with sustainability and permanence in the field.

Final Considerations

Family farming promotes the construction of a variety of ideas that food are primarily for sustenance, satiate hunger and not seen only as a source of profit, thus stressing that the food produced will come to have a better quality demand that can not be offered in the conventional environment.

It is important that family farming is a system based on ethics, balance and harmony between man and the environment in which he works, providing the environment with the possibility of recovery ensuring access to production of future generations to natural resources, ensuring the survival of humanity and the environment.

In the results of this research, the lack of specialized technical assistance, either through government programs or by private partnerships, causes the difficulty of access and use of knowledge, providing less knowledge about production technologies, especially with guidelines in agroecology and sustainability, leading to coexistence with the biome and also with sociopolitical opportunity.

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