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Smallholder Farmers Challenges to Supply Institutional Markets: a case study

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Abstract Smallholder farmers face a number of difficulties in accessing the market, whether through local or informal sales, indirect sales through intermediaries or direct integration with the agribusiness. Purchases by the government through institutional markets emerged as a further recent distribution path. Access to institutional markets is an alternative that aims to increase income for smallholder farmers in situations of vulnerability in Brazil. While laws exist to encourage the participation to such markets by smallholder farmers, many of them still cannot access these markets. Therefore, the aim of this article is to identify the challenges faced by family farmers to supply products to the institutional markets. Findings show several factors have an impact to access the institutional markets, such as processes of participation in public calls; processes of production of items and challenges of delivering products.

Keywords: smallholder farmers; institutional market; challenges.

1 Introduction

Brazilian agriculture is recognized for its high production of raw materials and food and also for the supply to domestic market and the international market. However, smallholder farmers have historically been at the margins of society. Farmers face a number of difficulties in the insertion of their products into more complex agroindustrial systems. The main obstacles are the organization process, agroindustrial processing, supply of inputs, lack of technologies, among other obstacles (Silva and Silva, 2011). The scenario changes especially when there are specific programs and public policies to strengthen family farming, which, although recent, scarce and little known, are very necessary policies (Grisa, Schneider, 2014; Triches and Schneider, 2010). This is because marketing and access to markets are the main obstacles faced by rural enterprises (Silva and Silva, 2011). Another challenge concerns cooperative work, in which farmers understand that this action is in disrepute after some unsuccessful attempts at joint work (Belik and Fornazier, 2017).

In an attempt to change this scenario, in many countries there is specific programs and public policies for the strengthening of smallholder farming. Public policies for rural development can be used as tools to consolidate work and stimulate smallholder farming, consolidated by the creation of institutional markets (Anjos; Becker, 2014; Silva and Silva,2011; Grisa and Schneider, 2014). In Brazil, there are two major programs to supply institutional markets designed smallholder farmers: The Food Purchase Program - PAA and the National School Feeding Program - PNAE. The PAA seeks to ensure the purchase of food produces from family farmers at prices that are more rewarding than market prices (Brasil, 2003). The PNAE imposes that at least 30% from the total financial resources of the National Education Development Fund (FNDE) must be spend on school meals should be used to purchase food from family farmers (Brasil, 2009). However, smallholder farmers still face difficulties to supply products through PAA and the PNAE programs leading to the research question: What are the challenges faced by smallholder farmers to supply Brazilian institutional market?

2 Institutional market and Smallholder farmers

Market access is very important for reducing poverty and improving household livelihoods (Jari and Fraser, 2009). There are four forms of access to goods produced by smallholder farming, which are: direct access to local using informal sales; the intermediation of sales using someone to represent these exchanges; the direct integration with the agroindustry and lastly there are the purchases by the public power, which correspond to the access to the institutional markets. Each of these markets faces a set of challenges (Wilkinson, 2008).

Although there is a set of channels that can be used for sales of these products, to access to different markets using different forms of marketing has not been realized. This problem is not unique to Brazil, other developing countries face these same difficulties, as is the case, for example, in South Africa. These limitations are technical and institutional (Silva and Silva, 2011; Jari and Fraser, 2009). Institutional markets play a key role in the participation of small producers in the market, promoting rural development and reducing poverty (Getnet, Kefyalew and Berhanu, 2018).

Thus, in addition to supporting sustainable production, governments need to be able to stimulate the consumption of products that have a lower impact on the environment through public procurement in institutional markets. Sustainable public procurement emerges as a tool to stimulate a more sustainable society. These procurements consider not only the price of products, but respect for the environment and social aspects related to human rights, labor and local culture (Sambuich et al, 2014).

A form of public purchase related to family agricultural production came about with the creation of the Food Acquisition Program (PAA) in 2003 by the federal government. Among the programs that fit this context, the PAA represents one of the main in terms of resources, social acceptance and capillarity in the national territory. In the period prior to the PAA there were some localized experiences of direct purchases of family farmers through institutional markets, part of state or municipal governments, mainly for school feeding. Another public purchasing program for family agriculture emerged in 2009, the National School Feeding Program (PNAE). This program already existed, however, its formalization stipulated an obligation to purchase 30% of the purchase of products from family agriculture, in addition to encouraging the purchase of agroecological and organic products (Sambuich et al, 2014). This program is one of the largest programs related to school feeding (Mossmann et al 2017, FNDE, 2013). The National Education Development Fund (FNDE) transfers funds from the federal government to school and state feeding on the basis of students enrolled in basic education. The program has become an important institutional segment for acquiring food from family farming. These programs aim at integrating food and nutrition security policy and agricultural policy, that is ensuring the consumption of school feeding from regional family farming, benefiting children with fresh and better-quality food. It seeks to modify the conceptions and evaluations of these foods, often unknown or disqualified. In this way, a food appreciated at school can be demanded by the children at home. These foods also contribute to raising school performance and children's health (Grisa et al, 2010; Silva and Silva, 2011). Another important aspect in relation to the Program is the fact that it gives preference to organic and agro-ecological foods produced by traditional communities, indigenous, quilombolas communities and settlements of the agrarian reform, that is, a mechanism that seeks to guarantee support and sustainability to the development of the smallholder farmers.

These programs have emerged as an interesting alternative so that family farmers could access different markets from the usual ones; generate income and occupation; strengthen their organizational social processes; commercialize their agroecological products, sustainable and reliable and attend to a differentiated demand of the society, that is, promoting a connection between the countryside and the city. The program was built as a local development mechanism (Triches, Schneider, 2010, Silva and Silva, 2011, Saraiva et al, 2013, Mossmann et al 2017).

These Brazilian programs are showing how institutional markets have promoted changes for a more sustainable society. Government can use public procurement to encourage more socially and environmentally sustainable production strategies. These programs have brought a number of advantages as a stimulus to productive diversification, an important strategy for the strengthening of smallholder family agricultural production; increased income for farmers; environmental conservation with the diversification of products and the stimulation of agroecological and organic production; incentive to strengthen producer organizations, an important parameter for these smallholder farmers to access the

market (Sambuich et al, 2014). This is because in many countries large numbers of people with low incomes are part of the group, who depend precisely on agriculture as a source of subsistence, income and employment (Ogutu and Quaim, 2018).

3 Challenges and Barriers of the Institutional Market

In the previous section we discussed how policies can guide the creation of institutional markets for products of family agriculture. This market creates opportunities for the family agriculture and solidary economy, strengthening the organizational social processes, the commercialization of agro-ecological products and the diversification of the production. The recognition of smallholder farming and the construction of differentiated policies for this social group represent significant changes, ensuring the permanence of this population in the countryside and improving their living conditions. It is an internal development strategy for the country (Silva and Silva, 2011).

Smallholder farmers are facing changes and increased competition in their local markets, as a result of the dissemination of information and connections between existing markets. Thus, public procurement can represent a viable alternative of market diversification (Jari and Fraser, 2009).

Government purchases have a number of benefits, with several positively evaluated studies. However, the implementation of these programs faces a number of difficulties. There are a number of operational difficulties that hinder the direct connection between production and consumption. Building markets for smallholder farming is a very complicated factor, because depends on stakeholders' action, the removal of legal barriers and political. There are studies that identify a set of difficulties in literature, such as the delay and discontinuity of the release of resources, due to bureaucratic requirements; failures in completing documentation and meeting requirements; problems with required compliance documentation (agro-ecological and organic); the irregular patterns of farmers' production, which affects the reliability of the supply; the lack of structure of transport, storage and processing; the great distances to be traveled together with the deficiency of roads; the lack of adequate equipment and the packaging for the commercialization; understanding of the procedures of institutional programs; the lack of organization in associations and cooperatives, which assist them in supporting infrastructure; the ceiling of purchases per producer is still low and not enough to give a minimum income to the producer; deliveries within deadlines; the difficulty of adapting to sanitary legislation; the lack of knowledge about the program; the lack of technical assistance to the production and little divulgation of the program. In this way, the creation of an institutional market can appear as a first step so that the poorer farmers can participate in the local markets, besides the production for the own consumption. In this way, these institutional markets represent opportunities (Cordeiro, 2007, Sambuich et al, 2014; Belik and Fornazier, 2017).

Silva and Silva (2011) presented the case of COOFELIZ, a cooperative created to commercialize the production of family farmers in a municipality located in the state of Minas Gerais, Brazil. This is the marketing of products for the PAA. Among the main difficulties reported are: problems with the bureaucracy in the creation of the cooperative; the understanding of procedures for access to public procurement programs; deliveries within deadlines; low financial return.

In South Africa, farmers also face a number of difficulties, such as lack of capital, poorly maintained roads, low-priced products, difficulties in enforcing contracts, strict food safety rules, lack of production skills, location in remote areas, lack of transportation, scarcity of information, difficulties in drawing up contracts, lack of infrastructure and weak institutional markets (Jari and Fraser, 2009).

Mossmann et al. (2017) presented some barriers that farmers belonging to the Southern Region of Brazil are facing when participating in institutional markets as high production costs; resistance in changing the way of production; inadequate technical assistance; bureaucracy in existing programs and resistance in the formation of organized groups. The production costs of family farmers are affected by the scale and need for production distributed throughout the year. Farmers also access a few technical assistance programs. As for the bureaucracy, the farmers stressed the difficulties with the documentation required by the public calls. Another factor that limits farmers' participation is the records required by some foods and

the inability to adjust the standards. The objection to forming groups also results in limitations in program implementation, especially in relation to the quantity and diversity of food produced.
Poulton, Dorward and Kydd (2010) pointed out some of the barriers faced by smallholder farmers, mainly related to product delivery services. The main difficulties identified correspond to geographical dispersion, the cost of delivery, the management of delivery, the lack of information about the market, among others.
Marques et al. (2014) conducted a study in Araripe, state of Ceará (Brazil), and pointed out some barriers that family farmers face in institutional markets. Among the main difficulties are the delays in payments after the delivery of the products; the logistics of product delivery; inadequate physical structure for the production of foodstuffs, which may hinder deliveries of products.
Table 1 summarizes some of the difficulties encountered by smallholder farmers

Table 1. Main difficulties identified in the literature

Difficulties	Studies
Cooperative work	Silva and Silva (2011); Mossmann et al. (2017)
Procedures to public procurement	Silva and Silva (2011); Jari and Fraser (2009); Mossmann et al. (2017)
Deadlines	Silva and Silva (2011)
Financial return	Silva and Silva (2011)
Competition in local market	Jari and Fraser (2009)
Lack of capital	Jari and Fraser (2009); Poulton, Dorward and Kydd (2010)
Damaged roads	Jari and Fraser (2009)
Low prices	Jari and Fraser (2009)
Enforcing contracts	Jari and Fraser (2009)
Strict food safety rules	Jari and Fraser (2009); Mossmann et al. (2017)
Production skills	Jari and Fraser (2009); Mossmann et al. (2017)
Location	Jari and Fraser (2009)
Transportation	Jari and Fraser (2009); Poulton, Dorward and Kydd (2010); Poulton, Dorward and Kydd (2010)
Scarcity of information	Jari and Fraser (2009)
Drafting contracts	Jari and Fraser (2009)
Infrastructure	Jari and Fraser (2009); Poulton, Dorward and Kydd (2010)
High production costs	Mossmann et al. (2017)
Technical assistance	Mossmann et al. (2017)
Bureaucracy	Mossmann et al. (2017)

4 Methods

This is a case study carried out in the Canudos settlement, belonging to Brazil's Landless Workers Movement (MST – BRAZIL) and located in the center-west region of Brazil.
The case was selected as it is representative of the living conditions and operations of family farmers in Brazil. Data collection was performed through interviews semi-structured, observation, document analysis and field diary. The period of data collection occurred in the months of May and December of 2018. It is interviewed 18 family heads. The duration of each interview was approximately one hour and thirty minutes, in which the main obstacles observed by the farmers to supply their products to the institutional market were identified.
The analysis of the results was performed through the inductive thematic analysis (Braun and Clark, 2006), which is a technique of analysis of data and its use in the field of organizational studies, particularly in research qualitative approach. It is important to highlight that thematic analysis is a method for identifying, analyzing and reporting patterns (themes) within of the data. That is, minimally organizes and describes the data set in (rich) details. The technique involves the following steps: familiarization

with the data; generation of initial code, search for themes, revision of themes, naming of themes with construction of thematic map and finally writing the analysis report.

5 Results

The case study was conducted in Canudos, a land reform settlement belonging to the Brazil's Landless Workers Movement (MST – BRAZIL). The settlement of Canudos originated in 1997 and is located between the cities of Palmeiras de Goiás, Campestre de Goiás and Guapó, in the state of Goiás, Brazil. They currently have 320 families settled on properties of 18 hectares and producing a diversity of products.

The case study identified the main challenges arising from the distribution of family agriculture products in institutional markets, since the respondents participated in this type of market in different periods. The challenges were grouped into three distinct categories, which are: processes of participation in public calls; processes of production of items and challenges of delivering products.

Through the inductive thematic analysis of Braun and Clark (2006) the main themes used in the construction of the map were identified. These themes emerged from interviews. Figure 1 presents the thematic map of the challenges of product distribution in institutional markets.

The identified challenges can be divided and classified into two groups: the **internal aspects of the environment** and **the external aspects of the environment**. When analyzing the **internal aspects**, there are challenges related to **production costs**; **organizational aspects**, **lack of resources** and **distribution difficulties**. On the other hand, the **external aspects** that arise correspond to the challenges regarding the **market**; **legislation** and **public policies** and also access to **information and lack of knowledge** of farmers.

Smallholder farmers face **high production costs**, due to a still **small production** when priority is given to institutional markets and no other sales channels are planned. As for the organizational aspects of **participation in public calls**, these farmers face some obstacles such as **access to public calls**, located on websites; **organizing the documentation** requested by the public calls; the need for **certification** of some products to serve this institutional market; and the difficulty of **working collectively** in the form of cooperatives. It is important to note that not all families have access to the Internet in the settlement, others cannot easily navigate the websites and others are still poorly schooled, making it difficult to understand and organize the documents requested by the calls. Farmers do not have organic and agro-ecological certification, which would guarantee priority in public calls. The organic and agro-ecological certification process is complex, requiring farmers to understand the specific legislation, document preparation, compliance with certification requirements, and control mechanisms. At present, farmers do not have the resources to obtain these forms of certification. In addition to these certifications mentioned, for each level - municipal, state and federal there are specific certifications for the sale of processed products in institutional markets, which include the Municipal Inspection Service; the State Inspection Service and the Federal Inspection Service. Institutional markets demand *in natura* products and processed products. Because they do not have this certification for processed products, farmers trade *in natura* products. The interviewees mentioned that they did not have the certification for processing because of the high costs and bureaucracy to obtain these certificates. Another important element corresponds to the joint and collective work, since this form of organization would also give priority to the participants of the public calls. However, some farmers in Canudos reported lack of confidence in collective work; different interests; failed attempts in the past; lack of knowledge about cooperativism and disbelief in collective work.

An emerging theme is the **lack of resources** represented by the lack of **capital expenditure**; **lack of resources to buy inputs** for agricultural production; **the lack of machinery** for production and **lack of water**. The lack of capital expenditure for production occurs because family farmers are low-income and lack the guarantees of having the minimum resources to produce, including inputs for agricultural production; cultural practices in agriculture; the labor force; machinery, among others. Some farmers have difficulty accessing water because they are distant from the river that is inside the settlement.

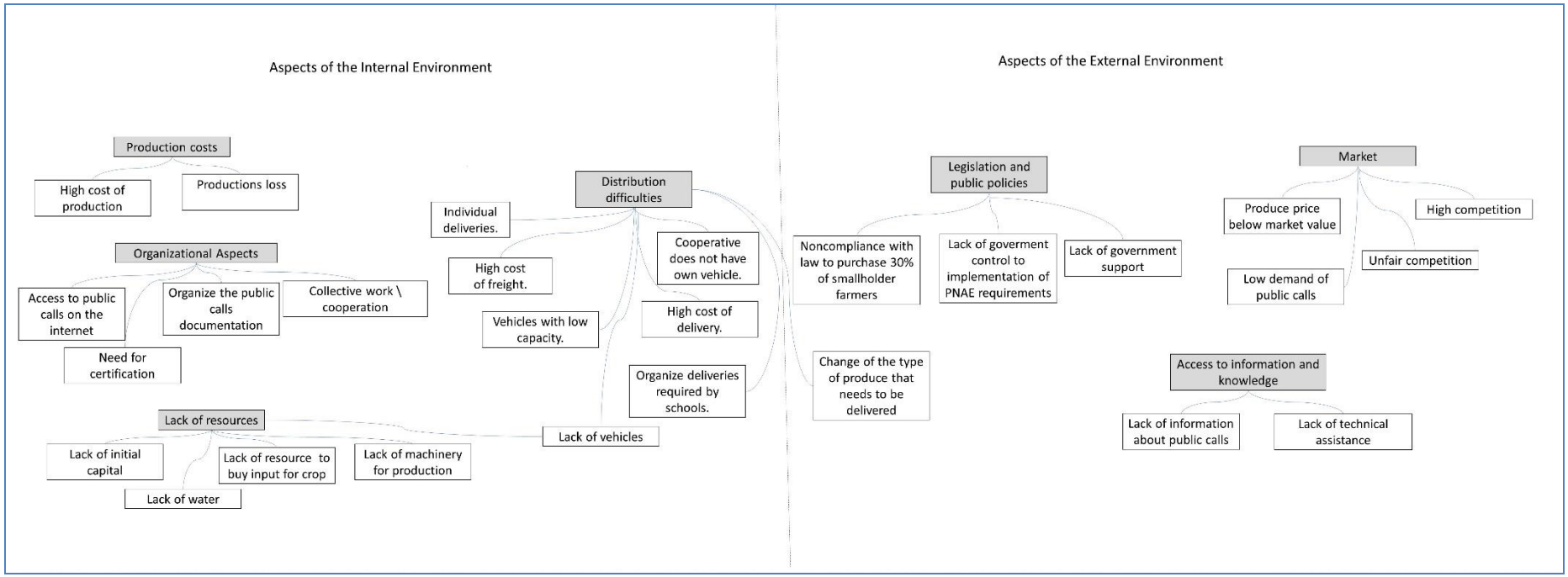


Fig. 1 Thematic map of the challenges of product distribution in institutional markets

The **difficulties related to the distribution** of products in institutional markets include **high freight costs**; **individual deliveries** by farmers; the **lack of vehicles** by some families; **vehicles with low capacity**; the **high costs of deliveries**; the **organization of deliveries** required by schools; the **lack of own vehicle of the cooperative**. Some participants of the public calls do not have own vehicles for distribution of the products. The cooperative also has no vehicles. Many farmers use ride-on vehicles for deliveries, and these vehicles have low transport capacity. Farmers who do not own vehicles choose to hire delivery services and freight charges are high. Delivery costs become high because of a number of factors such as, the lack of route planning and individual deliveries. Another complaint involving distribution is the organization of deliveries by schools, which can include a large number of trips with low quantity of products, further increasing distribution costs.

External challenges in the environment include **legislation and public policies; markets; and the lack of information and knowledge.** Public legislation and policies represent non-compliance with the Law that governs the PNAE, in which 30% of public purchases used in school feeding must come from family farming. Some schools in the municipality and the state of Goiás do not comply with the law (BRASIL, 2009). Another challenge is the lack of government control to implementation of PNAE requirements, since not all aspects are inspected and may result in some fraud. Farmers who are economically and socially fragile also perceive a lack of institutional support in a more intensive way. That is, in some cases it is not possible to participate in the PNAE due to lack of minimum resources, impossibility of new credits, lack of other social programs, among others. Another difficulty mentioned is access to markets. Many farmers cannot access different markets, that is, they still cannot sell directly to supermarkets and fairs; to sell to intermediaries; or for agroindustry; in addition to the usual institutional markets. Other elements that affect these institutional markets correspond to the prices practiced below the market; the high competition between the actors; unfair competition, when some actors do not follow all the precepts of the law and the low demand for products in public calls. Finally, there is access to information and knowledge, represented by the lack of information about public calls and the lack of rural technical assistance. As mentioned, calls are available on government websites and not all farmers have the ability to use the internet. As for rural technical assistance programs in Brazil, they are scarce and cannot serve all farmers who need systematic support and guidance.

6 Conclusion

The literature is still very scarce in relation to pointing out challenges of family farming to supply institutional markets. While there are some incentive laws to support smallholder farmers to supply institutional markets it is important to understand why this market are yet not fully exploited by farmers. This study identified the major challenges that family farmers face in accessing institutional markets.

When comparing the results of the study conducted in Canudos with the studies already existing in the literature, it is possible to perceive that the challenges are similars, even when comparing studies carried out in cities, states or even different countries. Returning to Table 1 previously presented, the main difficulties reported by various authors such as cooperative work; procedures to public procurement; competition in local market; lack of capital; low prices; strict food safety rules; transportation; scarcity of information; infrastructure; high production costs; technical assistance and bureaucracy are also problematic aspects in the Settlement of Canudos (Silva and Silva, 2011, Mossmann et al., 2017, Jari and Fraser, 2009, Poulton, Dorward and Kydd, 2010). In this way, smallholder farmers are fragile workers in many developing countries. The way to improve the living and income condition of these workers is through access to different sales markets for their products. However, the mere existence of the various sales channels does not guarantee the participation of farmers. Public policies and support programs are needed so that these farmers can actually access these created markets and consequently reduce vulnerabilities. The findings can inform policy makers to identify alternative solutions that will help farmers overcome these challenges in Brazil and in and other developing countries.

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