



THE PARTICIPATION OF FAMILY FARMING PRODUCTION IN THE BRAZILIAN BASIC FOOD BASKET ITEMS

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ABSTRACT: Family farming is an important social organization, being the focus of attention in many studies. It provides food for society and plays a role in regional development. From this, it is important to understand the degree of importance of family farmers in food production. Therefore, the objective of this research is to analyze the participation of family farming in the production of Brazilian basic food basket items. Not all items were directly used because some of them were industrialized, such as sugar, and then some substitutes were chosen, like sugarcane. This is possibly the main limitation of this research. The results indicate there is a varied participation of family farming production among the items, ranging from 1.93% (sugarcane) to 84.55% (coffee beans), with a general participation of 17.21%. As exploratory research, the results are considered satisfactory.

Keywords: Family farming. Basic food basket. Food production. Food security.

A PARTICIPAÇÃO DA PRODUÇÃO DA AGRICULTURA FAMILIAR NA CESTA BÁSICA BRASILEIRA

RESUMO: A agricultura familiar é uma organização social importante, sendo o centro das atenções em muitos estudos. Ela provê alimentos para a sociedade e desempenha uma função no desenvolvimento regional. A partir disso, é importante entender o grau de importância dos produtores familiares na produção de alimentos. Portanto, o objetivo desta pesquisa é analisar a participação da agricultura familiar na produção de itens da cesta básica brasileira. Nem todos os itens foram utilizados diretamente, pois alguns são industrializados, como o açúcar, então alguns substitutos foram escolhidos, como a cana-de-açúcar. Essa é possivelmente a principal limitação desta pesquisa. Os resultados indicam que há uma participação variada de produção agrícola familiar entre os itens, variando de 1,93% (cana-de-açúcar) a 84,55% (café em grãos), com uma participação geral de 17,21%. Como uma pesquisa exploratória, os resultados são considerados satisfatórios.

Palavras-chave: Agricultura familiar. Cesta básica. Produção de alimentos. Segurança alimentar.

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1. INTRODUCTION

The definition of family farming slightly varies according to the source, but it normally represents the same class of farmers. In a global outlook, according to the Food and Agriculture Organization (2013, p. 2), family farming is defined as:

"[...] a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labor, including both women's and men's. The family and the farm are linked, co-evolve, and combine economic, environmental, social, and cultural functions."

For local purposes, according to Brazilian law (Decree 9.064/2017), it is defined as farming carried out on small properties, with a limit of four fiscal modules, predominance of family labor, and at least half of the income coming from rural activities on the property (Brazil, 2017).

Beyond its definitions, it represents more than 90% of farms in most countries, which makes 500 million farms in the world, in a universe of more than 570 million farms (FAO, 2014). In Brazil, it represents 77% of the farms, with 3.9 million family farms occupying 80.9 million hectares or 23% of the area (IBGE, 2017). They contribute to regional development and food security, boosting the economy and generating income with diversified food production, supplying cities with their food demands. It is, in its own way, a socio-political and cultural construction (Abramovay, 2000; Deponti; Preiss, 2021; FAO, 2019; Gazolla *et al.*, 2022; Schneider, 2016).

In this sense, there are four channels of commercialization for family farmers: conventional, supplying the agroindustry; institutional, supplying public actors (highlighting public policies such as Food Acquisition Program and National School Feeding Program); proximity, supplying the final consumer (associated to short food supply chains, such as farmers' market); and territorial, supplying rural cooperatives. Family farmers usually benefit from the last three (Marques; Conterato; Schneider, 2016).

Short food supply chains, especially, allow synergy and social cohesion with other social actors, promoting diversification at a local level, improving competitiveness, and contributing to regional development through food distribution (Scabelot; Schneider, 2012).

FAO (2012) endorses this issue, stating crop diversification is an effective strategy for promoting food security and nutrition, alongside sustainable rural development, job generation, poverty reduction, and environmental and ecological preservation and conservation. The literature presents evidence in that direction and public policies are oriented towards the development of smallholders since they are considerably more vulnerable than big producers (Assis, 2006; Costabeber; Caporal, 2003; Georgeou *et al.*, 2022; Medina *et al.*, 2015; Sène-Harper; Camara; Matarrita-Cascante, 2019).

Therefore, the main premise of this work is that family farming is an important social organization. There may be, beyond that, ways of measuring this. Hence, the main question of this research lies in the degree of importance of family farming to food production. How much do family farmers contribute to food production in Brazil? To answer this, the objective of this research is to analyze the family farming participation in the production of Brazilian basic food basket items.

2. METHODOLOGICAL PROCEDURES

The participation of family farming in the production of Brazilian food basket items is based on the method used by Hoffmann (2014). In his paper, he analyzed the Agriculture Census 2006 from the Brazilian Institute of Geography and Statistics (IBGE, 2006). The current work aims to apply the same analysis to the Agriculture Census 2017 (IBGE, 2017), considering the Brazilian basic food basket items (Brazil, 1938; DIEESE, 2016). They are meat, milk, beans, rice, flour, potatoes, vegetables (tomato), bread, ground coffee, fruit (banana), sugar, lard/oil, and butter.

Considering the Agriculture Census 2017 does not present data for all these products, since

some of them are industrially processed and both commercial farms and family farms supply the same industry, Table 1 presents some substitutes to analyze the participation of family farming.

Table 1 – Items of the Brazilian basic food basket and items considered for analysis

Basic food basket items	Items considered for analysis
Meat *	Cattle sold for slaughter (Heads)
Milk	Milk (thousand liters)
Beans	Beans (tons)
Rice	Rice (tons)
Flour *	Wheat (tons)
Potatoes	Potatoes (tons)
Vegetables (tomato)	Tomato (tons)
Bread *	Wheat (tons)
Ground coffee	Coffee beans (tons)
Fruit (Banana)	Banana (tons)
Sugar *	Sugarcane (tons)
Lard/Oil *	Soybean (tons)
Butter *	Milk (thousand liters)

* No data for family farming production of these items. Therefore, those that better work as substitutes were chosen.

Source: Authors, based on Brazil (1938) and DIEESE (2016).

To better understand the method, there is the equation (1), where % means the participation of family farming in percentage; FF means the family farming total production; and T represents the total production (both family and non-family farming).

$$\% = \frac{FF}{T} \quad (1)$$

It is important to consider the Agriculture Census of 2017 limits part of its data for privacy reasons, which can under or overestimate the family farming participation. Nonetheless, since these are macro-data, they will hopefully not represent a significant deviation from reality. It is not expected, however, to have a perfect representation of reality. Still, since this is exploratory research, it can satisfactorily provide data for future research and lead to new insights.

3. RESULTS AND DISCUSSION

Considering its heterogeneity, it is difficult to define what is food for the purpose of calculation. Hoffmann (2014) questions this, asking whether one should use tons of wheat or wheat flour, tons of sugar or sugarcane, tons of soybean or soybean oil, etc. Therefore, different analyses may arise. Another important point from the same author is that it is necessary to analyze real food consumption and not food production. In this sense, not all produced food is necessarily eaten by the population. There are, for example, food loss and exports. Animals also need to eat, so a lot of these crops are destined for animal feeding. Finally, as it was said previously, some of these items are not direct representatives of the Brazilian food basket items, so some substitutes were chosen.

Table 2 presents the results of the participation of family farming in the production of some items related to the Brazilian basic food basket.

Table 2 – Participation of family farming in the production of items considered for analysis in 2017

Items	Total	Non-family farming	Family Farming	Percentage of Family Farming
Cattle sold for slaughter (Heads)	23,805,361	20,883,336	2,922,025	12.27%
Produced Milk (thousand liters)	30,156,279	10,805,604	19,350,675	64.17%
Beans (tons)	1,292,645.474	1,142,253.746	150,391.728	11.63%
Rice (tons)	1,1056,718.92	9,849,184.395	1,207,534.521	10.92%
Potatoes (tons)	1,996,144.603	1,751,295.755	244,848.848	12.27%
Tomato (tons)	1,143,922.455	1,033,558.95	110,363.505	9.65%
Wheat (tons)	4,681,068.678	3,819,085.137	861,983.541	18.41%
Coffee in grain (tons)	2,356,810.963	1,464,835.395	891,975.568	84.55%
Banana (tons)	4,025,937.177	2,072,124.389	1,953,812.788	48.53%
Sugarcane (tons)	638,689,874.7	626,383,465.4	12,306,409.35	1.93%
Soybean (tons)	103,156,254.6	93,597,597.16	9,558,657.475	9.27%

Source: Authors

Family farming was responsible for 12.27% of the cattle sold for slaughter. However, family farming produced 64.17% of the milk. It suggests meat production is better suited for large producers with extensive creation, while milk production is better suited for smallholders.

It was 11.63% in bean production, while 10.92% in rice, 12.27% in potato, and 9.65% in tomato production. These are basic foods consumed by most Brazilians and this suggests commercial enterprises are the biggest producers.

Regarding wheat production, family farming is responsible for only 18.41%. It is important to note that, despite the production growth, Brazil is still a great importer of this grain (CONAB, 2024).

When it comes to coffee in grain, family farming is responsible for 84.55% of the production. Considering it is a perennial crop, it may impact the production costs.

The fruit considered for the analysis is banana, with a percentage of participation of 48.53% for family farming.

Finally, both sugarcane and soybean, both commodities, have low family farming participation. Respectively, 1.93% and 9.27%, which is probably justified by being crops highly integrated into the industry.

Regarding participation in total agriculture and livestock production, Hoffmann (2014) presents an estimate of 21.4% for family farming production, based on the Agriculture Census 2006. He also cites other authors such as Kageyama (2013), with an estimate of 52% (with a broader concept of family farming), and IBGE (2006), with an estimate of 33,2%.

Based on the Agriculture Census 2017, IBGE (2017) estimates the total family farming agricultural and livestock production as about 23% (IBGE, 2017). The authors' calculations for the Brazilian food basket results in 17.21%, considering the Brazilian currency “real” as an equalizer.

4. FINAL REMARKS

This research attempts to calculate and analyze the participation of family farming in the production of Brazilian basic food basket items. The results are satisfactory since it is exploratory research, even with its limitations. For future works, it is recommended to consider family consumption, exports, imports, inflation, and other variables that may lead to more important conclusions about family farming.

The results are varied and show family farming is not the biggest producer of the Brazilian basic food basket. It has an overall participation of 17.21% and ranges from 1.93% (sugarcane) to 84.55% (coffee beans).

ACKNOWLEDGEMENTS

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001.

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