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School Feeding and Family Farming: partnership for the generation of employment and income

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Abstract. School meals made in partnership with family farmers tend to foster local economies, driving productive diversification and increasing the income of family farmers. Through the Brazilian School Meals Program, purchases of family farming products are encouraged, under special conditions of at least 30% of the resources transferred by the Brazilian Fund for Education Development. This incentive allows better marketing alternatives and valorization of the local farmer. The municipality has a significant return on its economy when these resources are added to those spent by the municipality itself. Numerous benefits would be generated for family farmers, shop-keepers, industrialists, and local service providers, as well as the return of revenue in the form of consumption taxes. This paper describes financial and social gains in the presence of municipal policies that induce the food acquisition process.

Keywords: family farming; school feeding; food bank; micro-economy.

1 Introduction

School feeding in partnership with family farming tends to foster local economies, enabling actions that generate employment and income. The National School Feeding Program of Brazil (PNAE), among its competencies, should also stimulate local economies and enable productive diversification and income increase of family farmers, offering more and better-marketing alternatives and valorization of the local farmer [1].

The program advocates legally the purchase of food produced by family farmers, be at least 30% of the resource transfer, favoring the generation of income, causing a greater impact on small and medium-sized cities, while promoting citizenship and food security, encouraging education in the communities through a comprehensive feeding system in public schools [2].

The effectiveness of school feeding will be expressive the greater the involvement of the community, public management, and inspection. The objective of this article is to evaluate how the resources used in school feeding can contribute to the local economy, adding income to family farmers and the community, and bringing social returns to the municipality. In May 2020, a governmental resolution made clear the understanding of all the eligibility criteria for family farmers and forcefully addresses considerations of the Food Guide for the Brazilian Population and the Food Guide for Brazilian Children recommending the purchase of fresh or minimally processed foods [3].

PNAE is an important tool for partnerships between the executing units, to provide opportunities for the generation of employment and income, because it recognizes, stimulates, and values the local agricultural family production, and the cultural specificities of food consumption, resulting in the construction of a healthy school menu and the movement of the financial wheel that provides all the access and consumption of the participating community. This includes all sorts of services involved in the smooth running of the school kitchen, such as maintenance, logistics, and other necessary inputs, as well as goods and services accessible to family farmers with their new income possibilities.

2 Literature Review

Initiatives around the world to meet food needs in schools reveal the concern with the school environment, including factors such as childhood obesity and the counterpoint to large-scale consumption of industrialized products. This premise brings benefits such as the correction of poor food environments, improvement in the nutritional quality of students, and revitalization of local agriculture [4].

In Brazil, public policies have been implemented to ensure nutritional food security as a human right to healthy food and in adequate quantities. As part of its historical landmarks, it instituted the Federal Law nº 5.537 in 1968, establishing the Brazilian Fund for Education Development (FNDE), whose function is to elaborate educational policies and provide resources for school feeding. [1].

The National School Feeding Program of Brazil was created to elaborate policies on school feeding and is managed by the FNDE. PNAE is responsible for technical assistance and supports the states and municipalities, to contribute to the implementation of educational actions [5].

For the food to arrive on the table of the school canteen, the capillarity was promoted, transferring the execution to the municipalities, which must complement the financial resources passed by FNDE, set up and manage the whole infrastructure, from the purchase of food, its transport, organization, and preparation of the menus with the assistance of nutritionists. [1].

To meet the requirement of spending a minimum of 30% of school feeding expenses on in-nature products, the process favors the elimination of intermediaries and the exemption of bidding processes based on the lowest price. It will be up to each executing entity to publish this demand through a public call, at fair prices, publicizing it widely

in newspapers, electronic media, or in other ways, prioritizing family entrepreneurs or organizations of agrarian reform settlements, and indigenous people [6].

The respect for food culture and seasonality of production are also beneficial effects in this construction so that the preparation of this menu following these premises can positively affect the field and the student's plate [5]. The increasing use of quality and fiber-rich foods, and the strengthening of the micro-economy for food production and food delivery should be a systematic search to guarantee this public policy [3].

The menu should be prepared by a nutritionist who is registered in PNAE, and it should respect the local food culture, and specify the variety of products and quantity, with high nutritional content so that it can base the list of products for the acquisition. The nutritionist must be aware of the local production to compose the menu. In this way, the public call, the modality that governs this acquisition will be compatible to meet the intended demand. The production of healthier food for students reinforces the local economy, as it proposes a guaranteed fixed income to the family farmer [7].

The supply chains should be short to preserve the freshness and quality of food, respect regional eating habits, and generate a supply of products that can even promote food education and change eating habits. The economic, social, and local development effects of school feeding influence the performance of the local economy, the National School Feeding Program of Brazil helps in the economic capillarity of the municipalities because the amount received by farmers will also reverberate in small businesses and the increase of tax collection in the municipality. [8].

PNAE grants election criteria to suppliers of the short chain that produce organic and ecological food, because the resolution allows that in these cases the price is increased by 30% valuing the responsible cultivation and aligned to the Sustainable Development Goals (SDG) of the UN agenda 2030 [9].

The construction of a sustainable development mechanism for family farmers must be a systematic and holistic project, so that the support can be continued and translated into the inclusion of family farming, especially in the attention to their needs and future projects [10].

For the farmer to participate in the public call, it is necessary to follow and be up to date with the documentary requirements qualifying them as suppliers. The reference prices should be parameters so that the products can have a fair and balanced price. In this document, the producer will indicate which products and quantities will be made available, compatible with its production and limits of individual resource contracting/year, established by Resolution N° 21, of November 16, 2021 [6].

The most important resource of income comes from the PNAE, that despite prioritizing local producers, the same producers can access several municipalities where surpluses are available, accumulating in the same year several sales projects and multiplying its income [11].

In Brazil apart from PNAE there are other school feeding programs and modalities that aid small producers such as PAA - Food Acquisition Program, the modality CONAB - National Supply Company and the modality Term of Adhesion (municipal and state). The creation of a partnership among economic agents that encourages networking to strengthen management and promote exchange within the region itself is

necessary since the work of social policies presents different realities and capabilities but is complementary and essential for sustainable rural development [12].

3 Methods

The research was carried out with family farmers, members of the Association of Rural Producers of the Rio Branco Basin, Artisanal Fishermen, and Indigenous People of Itanhaém/SP-Brazil and Region - AMIBRA, the main suppliers who deliver foodstuffs to the city government. In the first stage of the research, visits were made to understand how producers in the region have increased food production with the help of PNAE, PAA, and local companies, to make a diagnosis. Data collection was carried out at the Food Bank of Itanhaém, to assess how the resources employed in school feeding can contribute to the local economy, adding income to family farmers and the community, and bringing social returns to the municipality. The data collected was compiled in an electronic database of the Microsoft Excel program, and from there it was possible to structure and understand the income generation model of the farmers.

4 Result and Discussion

Itanhaém was based on local food characteristics, with banana cultivation as its main crop, but the new perspective of access to commercialization, such as the PNAE and institutional support, have changed the production dynamics, posing the challenge to the producers' associations of changing and diversifying the plantation to meet the demands of school meals.

According to the farmers' reports, the first participation in sales was only bananas, and when the diversification occurred the number of products grown from 1 to 10. Table 1, data from the public call 001/2021 demonstrates this alignment, in addition to the respect for the cultivars of traditional communities. [13]

Table 1. Public Call 001/2021 - Itanhaém /SP-Brazil

Product	Unit	Quantity	Price Unitary USD	Total USD
Banana silver	kg	50.000	0.673	33.674.99
Dwarf banana	kg	60.167	0.631	37.989.81
Lettuce	kg	24.104	21.047	50.731.37
Processed manioc	kg	11.000	14.733	16.206.09
Organic Cabbage	kg	10.000	11.576	55.000.00
Organic beet	kg	10.100	10.944	11.575.77
Sweet potato	kg	10.000	0.758	7.576.87
Yam	kg	10.000	0.842	8.418.74

Guarani sweet potato	kg	300	18.521	555.63
Guarani corn	kg	60	1.869	168.20

Source: Prepared by the authors

In 2009/2010, the municipality of Itanhaém published the public call for proposals, quickly complying with the new legislation, on the back of the positive experience of the implementation of the Food Bank (2007) and the Food Purchase Program - Purchase for Simultaneous Donation.

The coincidence of the Food Bank is in the same organizational chart as the School Feeding Department, both in the Municipal Education Secretariat, provided the articulation of a socio-technical network beneficial to the PNAE and especially to the group of farmers who were assisted in the field extension, strategic planning, formalization, and document updating, in addition to the defense of seasonality and delivery logistics.

The agriculture department aligned itself with the Food Bank and it was decisive for the productive group to change the banana monoculture characteristic in the following years, besides the revival of local culture products and the valorization of the Guarani ethnic group. In the same way, together they have elaborated the routes to facilitate point-to-point delivery as required by the public call: Center/East (Beach) and Center-West (Hill) distributing in a logical line about 62 schools including 8 state schools that are annually agreed in the municipal school feeding.

With Resolution N. 21, November 2021, the bill that can be glimpsed is the same one that transformed the lives of farmers in Itanhaém and made sustainable rural development move forward, consolidating the real short chain around local products and above all returning the socio-political visibility of the right. The resolution changes the value of the individual sales limit of the family farmer and the rural family entrepreneur for school meals, establishing a new maximum value to be respected, setting it to USD 8,500.00.

Table 2 shows the real gain for producers, adding the maximum values of the family farm in Itanhaém/SP-Brazil from 2009 to 2021.

Table 2. Income Generation USD - Public Policies - Food Purchase Program

Year	PNAE income/year	PAA CDS income/year	Income total /year	income/month
2009		1.000.00	1.000.00	80.00
2011	1.800.00	1.000.00	2.800.00	237.00
2013	4.200.00	1.000.00	5.200.00	430.00
2015	4.200.00	1.400.00	26.500,00	465.00
2017	4.200.00	1.400.00	26.500,00	465.00
2019	4.200.00	1.400.00	26.500,00	465.00
2021	8.500.00	2.500.00	11.000.00	920.00

Source: Prepared by the authors from various reports on the operationalization of food acquisition programs.

One of the most successful actions of the whole process was the inclusion of the indigenous family farmer as a priority beneficiary of these programs. The joint work between the Brazilian Indian Foundation - Southern Coast Regional Coordination and the Food Bank revitalized the planting of Guarani corn, soon introduced in school meals for consumption in indigenous schools, as sacred food for the ethnic group [14]. This initiative pushed the inclusion of other products from the villages, meeting the criteria of prioritization of traditional peoples and communities, specificities that are foreseen in the guiding Resolution of PNAE [7].

The collaboration between the government and farmers promoted food security and income generation, through the implementation of these programs. It is known that the benefits of school meals vary according to the economic needs of the region, in the richest and most developed regions school meals are a source of nutritious meals that complement the food offered by the family, in the poorest regions and countries is an incentive to send children to school and continue their education, being, therefore, a relevant factor to ensure food security and attention to children in vulnerable situations [8].

5 Conclusion

The results observed point out that the purchase of family farming through the PNAE can contribute to the local economy, adding income to family farmers and the community, and bringing social returns to the municipality. According to the association of farmers of Itanhaém, promoting food production and local supply systems operated by short production and supply chains are instruments for generating income and promoting citizenship.

The access to public purchases, besides revitalizing the rural area, served to strengthen the associative arrangement of small local producers, reflecting on the quality and freshness of the school feeding supply, and providing social and economic visibility for each producer in the community. [14].

The supply of food for PNAE, with the support of the city hall, helps local farmers employing direct purchase, promoting the improvement of their incomes that are guaranteed for a certain time, giving rise to situational diagnoses such as higher generation of jobs; increase of the portion of resources destined to the remuneration of labor and the increase of the economic movement in the whole region, reorganization in the food production process, increase of the productive volume, the incentive to the consumption of fresher and healthier products by the students. The development of family farming to improve school meals, the central pillar of PNAE, can also eliminate the intermediary agent, allowing a direct connection between the field and the table, generating a fairer income for farmers. Other modalities of food acquisition programs also provide opportunities for diversification and direct commercialization of Family Farming [15].

Given this, the Itanhaém Food Bank, as executor of the purchase modality has been the guiding thread of the connection between family farming production, menu formulation, and preparation of the school feeding public call, establishing healthy management in the municipality, presenting itself as a viable alternative for the success of food

systems around school feeding and the processes that culminate in the restructuring of short production and supply chains. Because of the impression that there are opportunities optimized by partner actions in the execution of the PNAE, it is understood that by force of law there is a preexisting demand to be met and important socio-economic gains. The Itanhaém Food Bank in a collaborative role appears as a viable alternative for the success of food systems around school meals. The technical interventions have formalized an expressive number of small producers that were irregular, from 28 to 61, an increase of 117 % [16].

However, weaknesses such as the different productive stages may respond with little supply in local agriculture. It was found that knowing the reality of local rural production and intersectional strategic planning can in-cite and produce short-term changes and real impacts on the local economy.

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References

1. FNDE N.E.D.F.: National school feeding program - PNAE, <https://www.fnde.gov.br/programas/pnae>, last accessed 2022/04/21.
2. Lopes, S. R. S., Diniz, P. R.: Boas práticas de agricultura familiar para a alimentação escolar /Programa Nacional de Alimentação Escolar. – Brasília: FNDE, 2017. 182 http://www.comunidade.diaadia.pr.gov.br/arquivos/File/agricultura_familiar/caderno_boas_praticas.pdf
3. Brasil. FNDE. Ministério da Educação. Resolução no 6, de 08 de maio 2020.: <https://www.fnde.gov.br/index.php/aceso-a-informacao/institucional/legislacao> last accessed 2022/04/21, last accessed 2022/04/21.
4. Bagdonis J.M., Hinrichs C.C., Schafft K.A.: The emergence and framing of farm-to-school initiatives: civic engagement, health and local agriculture 26 (1), 107–119, <http://link.springer.com/10.1007/s10460-008-9173-6> Author, F.: Contribution title. In: 9th International Proceedings on Proceedings, pp. 1–2. Publisher, Location 2010.
5. Brasil.:L11947,http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2009/Lei/L11947.htm .8. last accessed 2022/03/22.
6. FNDE B. <https://www.fnde.gov.br>. Resolução nº 21, de 16 de novembro de 2021, <https://www.fnde.gov.br/index.php/programas/pnae/pnae-sobre-o-programa/pnae-legislacao>. last accessed 2021/04/21.
7. Brasil.: Decreto Nº 10.880, de 2 de dezembro. Regulamenta o Programa Alimenta Brasil, instituído pela Medida Provisória nº 1061, de 9 de agosto de 2021, <https://www.in.gov.br/en/web/dou/-/decreto-n-10.880-de-2-de-dezembro-de-2021-364265> 206. last accessed 2022/04/22
8. de Souza A.E. Reis, J.G M. Estender A. C, AGIA J, L.D. Vendrametto, O. Costa, L. M. Short Agri-Food Supply Chains: A Proposal in a Food Bank. In: Lalic B., Majstorovic V., Marjanovic U., von Cieminski G., Romero D. (eds) *Advances in Production Management*

- Systems. Towards Smart and Digital Manufacturing. APMS 2020. IFIP Advances in Information and Communication Technology, vol 592. Springer, Cham. https://doi.org/10.1007/978-3-030-57997-5_69. 2020.
9. United Nations Organization U. Sustainable Development Goal 2: Fome zero e agricultura sustentável <https://nacoesunidas.org/pos2015/ods2/2019>. Last accessed 2022/03/10.
 10. WFP, W.F.P.: The state of school feeding, <https://www.wfp.org/content/state-school-feeding-worldwide>. 2015 last accessed 2021/04/20
 11. Brasil.: L11947. http://www.planalto.gov.br/ccivil_03/_Ato20072010/2009/Lei/L11947.htm.8. Brasil (2009). L11947 last accessed 2022/04/11.
 12. WWP.:Asseismodalidadesdopaa,https://wwp.org.br/wp-content/uploads/2017/02/PAA_PT.pdf, last accessed 2022/04/11
 13. PMI-Administration Secretary Supplies Department. Itanhaém City Hall. 2021. Available in: <http://www2.itanhaem.sp.gov.br/wp-content/uploads/2021/04/01-21-Edital-Chamada-P%C3%BAblica-Aquisi%C3%A7%C3%A3o-de-G%C3%AAneros-Aliment%C3%Acios-Pnae-1.pdf>. Accessed on 17 Jun. 2022
 14. PMI.: Food Bank. Itanhaém City Hall. <http://www2.itanhaem.sp.gov.br/2018/08/06/banco-de-alimentos-municipal-apresentara-iniciativa-inovadora-no-projeto-bota-na-mesa-2018/> Last Accessed 2022/06/17.
 15. Estender A. C.; Vendrametto, O.; Melo, L. Strengthening the local economy through school meals. *Research, Society and Development*, [S. l.], v. 10, n. 15, p. e270101522863, 2021. DOI: 10.33448/rsd-v10i15.22863. Disponível em: <https://rsdjournal.org/index.php/rsd/article/view/22863>. last accessed: 7 Mar. 2022.
 16. PMI-Food Bank. Itanhaém City Hall. 2017. Available in: http://arquivos.ambiente.sp.gov.br/municpioverdeazul/2016/07/rs3-nao-geracao_itanhaem.pdf. Accessed on 2022/06/18.