



LOCAL AGRI-FOOD SYSTEMS: PAST, PRESENT AND FUTURE OF THE REGIONALIZATION EXPERIENCE OF SCHOOL MEAL IN THE MUNICIPALITY OF SOURE/PA

**SISTEMAS AGROALIMENTARES LOCAIS: PASSADO, PRESENTE E
FUTURO DA EXPERIÊNCIA DE REGIONALIZAÇÃO DA MERENDA
ESCOLAR NO MUNICÍPIO DE SOURE/PA**

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ABSTRACT

In the municipalities of Marajó Island, rich in biodiversity but with the lowest human development indexes (HDI) in Brazil, access to healthy and high-quality food for children and young people in the region is often only possible through school meals. Regionalizing these meals based on the identification of traditional foods within the concept of "local agri-food systems" could offer a new development possibility for these areas, building on local family farming and (re)establishing relational connections given the proximity between products, producers, and consumers. Understanding the dynamics of these systems, their complex networks, and chains from production to consumption, as well as their pragmatic applications in reality, is essential to advance the debate around rural development. Thus, this article aims to shed light on these issues by presenting and discussing the experience of the School Meal Regionalization Program in the municipality of Soure, Pará, as a means of fostering local identity and rural development. The methodological approach employed was a case study, contextualizing this initiative and providing an in-depth description through data collection and analysis using interviews, observation, secondary data, and document analysis. The results indicate a successful experience with significant positive impact, where students were able to have access to healthy and safe meals, alongside the development of agri-food enterprises and advancements in the sustainability of local family farming and the socio-economic ecosystem.

Keywords: Local agri-food systems. Family farming. Rural development. Public policy. Regional products.

RESUMO

Nos municípios da Ilha do Marajó, ricos em biodiversidade, mas que apresentam os mais baixos índices de desenvolvimento humano (IDH) do Brasil, o acesso à alimentação saudável e de boa qualidade, para crianças e jovens da região, muitas vezes só é possível na merenda escolar. A regionalização desta, a partir da identificação de alimentos tradicionais, dentro de um conceito de “sistemas agroalimentares locais” pode ser uma nova possibilidade de desenvolvimento para tais locais, partindo da agricultura familiar local, (re)construindo pontes relacionais dada a proximidade entre produtos, produtores e consumidores. Compreender a dinâmica destes sistemas em suas complexas redes e cadeias que vão da produção ao consumo, bem como suas aplicações pragmáticas na realidade, constituem relevância essencial para avançar no debate em torno do desenvolvimento rural. Assim, o presente artigo busca, à luz destas temáticas, apresentar e debater a experiência do Programa de Regionalização da Merenda Escolar no município de Soure/PA, como forma de identidade e desenvolvimento rural local. O procedimento metodológico empregado foi o estudo de caso, contextualizando esta iniciativa e descrevendo-a em profundidade a partir da coleta e análise de dados por meio de entrevistas, observação, uso de dados secundários e análise documental. Os resultados apontam uma experiência exitosa e de importante impacto positivo, onde foi possível que estudantes pudessem passar a dispor de alimentação saudável e segura, paralelamente ao desenvolvimento de empreendimentos agroalimentares e avanços na pauta da sustentabilidade da agricultura familiar e ecossistema econômico-social local.

Palavras-chave: Sistemas agroalimentares locais. Agricultura familiar. Desenvolvimento rural. Políticas públicas. Produtos regionais.

INTRODUCTION

Feed yourself, with quality and dignity. More than a human right, this is an inescapable necessity. Despite the fact that Food and Nutrition Security (FNS) is essential in any context, the debate on this issue remains current and relevant given the severe difficulties and consequences of its non-guarantee - “food insecurity” - which, unfortunately, is still the majority reality in many parts of the world and Brazil.

At the same time, considering places where poverty is high and the human development index (HDI) is very low, schools often become the only refuge for children and young students to have access to nutritious and good quality meals. An illustration of this is that, not infrequently, journalistic



reports report situations in which schools allow their students to take lunch home, for “humanitarian reasons”, risking circumventing rules, but helping families in vulnerable situations (TENENTE, 2022).

A contemporary discussion, the report “The State of Food Security and Nutrition in the World” by the Food and Agriculture Organization of the United Nations (FAO) reveals a concerning increase in world hunger, estimating its impact on 811 million people. In addition, it is estimated that 2.3 billion individuals, about 30% of the global population, do not have access to adequate food throughout the year – a statistic characterized as “prevalence of moderate or severe food insecurity”, which has grown at a faster annual rate than in the last five years combined (FAO, 2021).

Machado (2006) and Campos *et al.* (2020) assert that this is the scenario and reference point for grounding the fundamental social right that everyone should have regular access to food, historically contextualizing the concept of FNS, where FAO, since 1982, emphasizes the importance of ensuring that all people have physical and economic access to the food they need at all times. Indeed, while nothing comes from nothing, this maxim is also fully valid concerning food production. In fact, based on Kneafsey *et al.* (2013), not only production, but also its processing, distribution, and commercialization - which, when they occur as close as possible to a defined geographic area, constitute a summary definition for the concept of “Local Agri-food Systems” (LAS).

In addition to the aforementioned economic activities, such agri-food systems also encompass a range of actors, heterogeneous products, and short supply chains, wrapped in the understanding of food (or local food) related to the geographic distance between consumers and producers, as well as their ties of proximity, identity, and social rootedness (SOUZA; FORNAZIER; DELGROSSI, 2020; MARSDEN; BANKS; BRISTOW, 2012; MARTINEZ *et al.*, 2010). Moreover, these systems are characterized as “sustainable” when the combination of these various elements (environment, people, processes, infrastructure, and institutions) are in a close cooperative relationship with the strengthening and consolidation of collective health in a given territory (COSTA; MELO; FROEHLICH, 2021; HLPE, 2014).

Moving forward, with the aim of promoting these LAS and as a tool for fostering local social and economic development, the legal framework of the Food Acquisition Program (PAA) is cited, established by Article 19 of Law No. 10,696 (BRASIL, 2003); and the National School Feeding Program (PNAE), with emphasis on Article 14 of Law 11,947/2009 (BRASIL, 2009), which provides



for the provision of school meals for basic education students and stipulates that at least 30% of the resources transferred by the National Education Development Fund / National School Feeding Program (FNDE/PNAE) must be allocated to the purchase of products from family agriculture and rural family entrepreneurs.

In contrast, this same legislation also allows for the purchase of industrialized products, due to potential difficulties in packaging these foods or even when there is not enough local food production available (MELÃO, 2012). However, the School Meal Observatory (OAE, 2021) asserts that family farmers face challenges in supplying food to the PNAE, reflecting the “preference” of city halls and state governments for industrialized products, often irregularly in relation to the current legal framework.

In such a way, it is perceived that the question in vogue constitutes a debate transversal to public policies, to the multifactorial discussion on local-regional development, family agriculture and its productive chains that involve the agro-food systems. Contextualized within this complex and comprehensive multidisciplinary scenario, fortunately, there are successful initiatives that have managed to overcome such challenges.

In light of the above, this research based its relevance on describing and analyzing an action within this set. Therefore, this article presented two central research questions: 1) theoretically present and configure the innovation around the concept of LAS; and 2) to conjecture about the practical application, based on the case of the experience of the School Meal Regionalization Program in the municipality of Soure, located in the Marajó Archipelago, State of Pará.

Geographically located in the northern region of Brazil, the territory in question contrasts unspeakable richness and natural beauty with high rates of social vulnerability and misery. Given this paradox, the issue of poverty in the region, and specifically in the municipality of Soure/PA, is marked by the statistic that 61.98% of its population is living below the poverty line - approximately 12,000 people at the time (SIIS, 2022). Likewise, in addition to these facts, these issues become even more severe and visible in the face of the question of food (in)security.

In this argument, the research questions dialogued with the need to debate in light of the concepts of local agri-food systems, methodologically starting from a mixed, exploratory approach,



based on the technical procedures of bibliographic research, desk research, document analysis, and study of case. In this way, the study aimed to illustrate the innovative actions related to school meals provided to the municipal education network through the School Meal Regionalization Program in the municipality of Soure/PA, considering its previous issues, actions, and future challenges - involving and addressing complex pre-existing obstacles related to LAS, and fostering the regionalization of supply for related inputs by family farmers.

To achieve this, the study began with a historical contextualization to situate the initiative and its inherent issues in space and time; moving forward to present the actions related to FNS for schools in the city and the rural areas of the municipality, given a series of initiatives related to their agri-food systems and business environment, mainly focusing on the axis of public purchases with family agriculture and small local businesses.

The culmination generated a critical reflection on potential future alternatives that can effectively contribute to stimulating the generation of employment and income, creating a favorable scenario for the development and sustainability of these agro-food enterprises and promotion of local social and economic development, based on access and inclusion of small businesses and family farmers in the opportunities generated.

METHODOLOGY

CHARACTERIZATION OF THE STUDY LOCUS

The study area of this research, located in the state of Pará - Brazil, the Marajó Island is the largest fluvial-maritime archipelago on the planet, with 40,100 km² - with a total area larger than the Brazilian states of Sergipe and Alagoas; it has a total estimated population of 610,972 inhabitants, distributed across 17 municipalities (FAPESPA, 2022). The specific locus of Soure, located at the coordinates of latitude "0° 43' 01" S" and longitude "48° 31' 22" W" (see Figure 01 schematic illustration) has an estimated population of approximately 25,000 people and is considered the "Pearl" or "Capital of Marajó", with the local economy based on fishing and agricultural activities, accounting for 81.8% of the distribution of the value collected by the municipality (IBGE, 2019).



Figure 01 | Basic map of location and main sociodemographic characteristics of the municipality of Soure/PA



POPULAÇÃO	25.565 habitantes (Estimativa para 2020)
PROPORÇÃO POR SEXO	As mulheres representam 50% dos habitantes de Soure; e os homens, 50%.
DISTRIBUIÇÃO ETÁRIA	Em Soure, 8.531 habitantes são crianças e adolescentes de 0 a 17 anos. O número estimado para meninas nessa faixa etária é de 4.229 sendo 63% de 0-11 anos e 37% de adolescentes de 12-17 anos.
SITUAÇÃO URBANA RURAL	91% da população mora na área urbana e 9% habita áreas rurais. É a maior porcentagem de população urbana do Marajó.
IDH	O Índice de Desenvolvimento Humano (2010) no município é 0,615, o maior do Marajó. O valor no quesito renda é um diferencial, 0,583 também o maior dentre os 16 municípios do Marajó.
IVS	0,464, o menor do Marajó
LONGEVIDADE	A esperança de vida ao nascer de um (a) morador (a) de Soure é de 70,6 anos; inferior à do Pará (72,4 anos) e à do Brasil (73,9 anos).
RENDA PERCAPITA	300,59 a maior do Marajó, correspondente a menos da metade da nacional de 793,87 em 2010
TAXA DE OCUPAÇÃO	50% de admissões em 2019

Source: Adapted from BRASIL (2020); IBGE (2019)

SEARCH STRATEGY

From the standpoint of its nature, the research was applied with the aim of generating knowledge for practical applications directed towards solving specific problems. Regarding the approach to the problem, it was mixed, predominantly qualitative, even when employing instruments involving statistical surveys. In terms of its objectives, the research was configured as exploratory (ALMEIDA, 2017).

The aforementioned approach is associated with the choice of a case study, given its focus on the development of an in-depth description of an experience, aiming to provide a profound understanding of the event, analyzing it through detailed and deep exposure involving multiple sources of information and their related theoretical themes (CRESWELL, 2014).



METHODOLOGICAL PROCEDURES

Research question 01 – Construction of a theoretical review on the concept of local agri-food systems.

The theoretical framework of this article was based on the bibliographic references presented in the systematic literature reviews (SLR) developed by Souza, Fornazier, and Delgrossi (2020) and Silva (2020), identifying the main elements in the debate of the “state of the art” related to the concepts of “local agri-food systems”, “localized agri-food systems”, and “family farming”.

These SLRs covered a total of 91 articles, with results that point to concepts mainly correlated with themes such as local rural development, innovation, sustainability, marketing strategy, market segmentation, agroecology, territorial valorization, institutional programs and markets, food production, and its economic impacts on local communities, as well as changes in consumption patterns by consumers. From these, it was possible to establish a dialogue between the authors and the presented reality.

Research Question 02 - Present the experience of the School Meal Regionalization Program in the municipality of Soure/PA, as a case study.

This stage of the research involved multiple sources of information. It started with the use of secondary data to obtain socioeconomic indicators of the municipality, followed by participant observation through on-site visits; interviews with subjects related to the analysis process; document analysis of reports, studies, and audiovisual materials provided by the Soure/PA City Hall, its Municipal Department of Education, the Marajó-Campos Agency of the Brazilian Service of Support for Micro and Small Enterprises of Pará (SEBRAE/PA), and the Technical Assistance and Rural Extension Company of the State of Pará (EMATER/PA).

The logic of data analysis and treatment followed a historical narrative, established here as “Past,” considering the period before 2018; “Present,” covering the stages developed between 2018 and 2021; and moving on to conjectures for the future, now referred to as “Future.”



THEORETICAL REVIEW: LOCAL AGRIFOOD SYSTEMS

The local agri-food systems focus on the producer-consumer relationship, from the origin, processing, and distribution of food produced to the consumer's table, preferably through short value chains - counterpoint to the logic of long and complex industrial chains. These can be characterized in three types, namely: 1) direct purchase from the farmer, in a dynamic of personal face-to-face interaction; 2) spatial proximity, where food products are produced locally and consumers become aware of this local nature at the point of sale; and 3) spatially extended, where the "information and meanings" about the place of food production and its producers are communicated to consumers who are outside the production site - for example, labels and packaging (MARSDEN, BANKS; BRISTOW, 2012).

As observed, these short distribution chains, also called alternative food networks, are characterized by short distribution channels (producer markets, delivery boxes, small producer stores, agricultural sales associated with agrotourism, and other forms of direct sales). They also have a strong foundation in the issue of production origin and territorial identity, allowing knowledge about where the food is produced - locally; by whom - the producer; and how - the production system (DAROLT *et. al*, 2016). Unfortunately, in Brazil, this logic is still incipient and is limited to specific initiatives related to agroecological food products and theoretical debates (PLOEG, 2008; WILKINSON, 2008; FERRARI, 2011; DAROLT, 2012).

Following this logic, a theoretical framework is also presented with a conceptual synthesis of local agro-food systems from different points of view.



Table 01 | Theoretical synthesis relating different central themes about the LAS.

Central themes	Theory synthesis	Authors
Value creation	This trend is a result of consumers' desire to consume locally grown foods and, on the other hand, it offers an alternative for farmers to add more value to their commoditized conventional productions. A reflection of this can be seen in initiatives such as "Territorial Marketing", seals, certifications, labeling, geographical indications, and provenance.	Mount (2012); Anjos; Caldas (2017).
Analysis of the relationship between producers and consumers	A potential opposition movement to the standardized food production of industrial agriculture and its "food empire," the relationship between food consumption and trade intertwines with a trust-based relationship and, in some cases, takes on the contours of a political act against the hegemony of the present.	Ploeg (2008); Azevedo (2015);
Viability of creating LAS	The thesis of the viability of this model is based on reducing intermediaries along the supply chain, differentiating products, and thereby increasing added value, reinforcing identity and regional-cultural aspects, thereby contributing to the social and market development of the region.	Oliveira; Freitas (2017).
Organization and cooperation	Even local agri-food systems are subject to the classic and historical challenges inherent in the realm of family farming, such as those related to production scale and production costs, difficulties in accessing credit, limited access to technologies, logistical problems, and low added value. Initiatives of cooperation and associativism can provide an alternative to such barriers and contribute to the development of territories.	Pereira <i>et al.</i> (2016); Lutz; Smetschka; Grima (2017).
Public and institutional policies	It is a fact that many family farmers face significant challenges in accessing markets, even local ones. Thus, institutional programs and public policies for support are crucial for poverty reduction in rural areas, rural development, food democratization, and food and nutrition security.	Izumi; Wriqth; Hamm (2010)

Source: Adapted from Souza; Fornazier; Delgrossi (2020)

RESULTS AND DISCUSSION: PAST, PRESENT AND BRIDGES TO THE FUTURE

THE PHOTOGRAPH OF THE PAST

Based on the legal framework of the Direct Money to Schools Program (PDDE) under Law 11,947/2009 (BRASIL, 2009), which provides for the provision of school meals to students in basic education, and specifically in compliance with Article 14 of said legislation, the year 2017 marked the starting point of this case study due to the fact that the municipality of Soure did not have access to this public policy until then.



Nevertheless, considering the interplay of the various components that make up the Local Agri-food Systems, including the environment, people, processes, infrastructure, and institutions (COSTA, MELO, FROEHLICH, 2021; HLPE, 2014), there was a factual lack of trust in the local government administration. At the time, there were other isolated and previous experiences related to the supply of food for the PNAE, where the financial commitments made by the municipality were not properly honored with the suppliers. This fact is related to the significant delay in payments or even non-payment to the suppliers. Additionally, there was a noted lack of formality in the previous public procurement processes, with even individual persons being qualified as suppliers.

Additionally, there was limited access for local small businesses to opportunities and legal pathways for participating in government procurement processes, compounded by the fact that municipal employees involved in public procurement were unaware of the specific aspects addressed by the General Law (BRASIL, 2006), which established the National Statute for Microenterprise and Small Business. Among other points, the law aimed to provide simplified and differentiated treatment to this sector of the economy.

Regarding school meals, the items that composed them at that time disregarded the tastes, preferences, cultural, and dietary habits of the students in the municipal education system. Additionally, they were mostly purchased from suppliers located in other municipalities, thus not fostering the local production and value chain.

In addition to this scenario, Soure did not meet the premises imposed by the legal framework and was limited to providing justifications to the relevant control agencies. Thus, the imperative to articulate a project/program with the challenge of building a new reality was laid out, referred to here as the proposed solution “School Meal Regionalization Program”, which was initiated in 2019.



THE INITIATIVES AND RESULTS OF THE PRESENT

Next, let's detail the initiative at hand. This pioneering experience in the municipality of Soure and the Marajó territory aimed to ensure quality food for schools in both the city and rural areas by promoting regionalization in public procurement from family farmers and other stakeholders in the local agri-food systems. The main focus was on the school meal program and its essential aspects of food and nutrition security.

There was an understanding that by increasing purchases from farmers, the public sector would promote socioeconomic development, job creation, income generation, revenue growth, and improved quality of life. These opportunities were a result of the local government's alignment with public policy programs and territorial development initiatives in partnership with the local SEBRAE.

Similarly, by stimulating purchases from family farmers, the municipality would use its purchasing power to promote the development of agri-food enterprises and their organizations. The entire population of the territory could benefit, but a series of barriers would need to be addressed beforehand.

As a result, the School Meal Regionalization Program of Soure/PA was built upon the following aspects:

- Prioritization of regional and local purchases for school meals: leveraging the entrepreneurial potential of the municipality and its LAS, highlighting the city's vocation for its productive activities, and valuing local products and the territory.
- Development and promotion of family farming and small rural businesses for participation in municipal tenders: implementing training and technical cooperation actions between institutions, aiming to enable them to supply the local government. Providing technical, legal, and financial assistance, as well as support for issuing invoices for rural products and registering as a Microentrepreneur Individual (MEI) in the municipality of Soure.

- Implementation of differentiated treatment practices for small businesses as provided for in Supplementary Law No. 123/2006 (BRASIL, 2006): criteria for tie-breaking and late tax regularization; exclusive bidding for contracts up to R\$80,000.00; subcontracting for the execution of contracts designated for large companies; exclusive quota for small businesses in the procurement of divisible goods; providing the necessary financial and economic resources for the acquisition of public purchases from small businesses in alignment with the value and percentage of purchases linked to the PNAE and the Safe Food Program (PAS), considering federal transfers; submitting the list of products to be purchased from family farmers/producers and small local businesses to the municipal procurement committee, followed by the definition of deadlines and the development of public calls.
- Training actions for local government employees: aimed at prioritizing the acquisition of products and contracting services from Soure small businesses, both urban and rural, with a focus on family farmers.
- Food and Nutrition Security: development of menus and the creation of public calls that align with the need to acquire food items from family farmers for school meals, incorporating locally produced and available food items in accordance with the guidelines of the PNAE. These menus aim to cater to the taste and dietary habits of students while supporting the development of the local food production chain and ensuring attention to cultural and food and nutrition security aspects. Examples of products purchased in 2021 include cassava flour, tapioca flour and starch, cowpeas, Marajoara sausage, slaughtered chicken, fish fillets, fruit pulp, açaí, pineapple, banana, papaya, watermelon, cantaloupe, avocado, lime, cassava, kale, herbs, lettuce, green coconut, dry coconut, Marajó cheese, Marajó dulce de leche, free-range eggs, green beans, gherkin, okra, eggplant, spinach, pre-cooked manioc, and pumpkin.



As cardinal points in its systematization, this program had the moments presented in Table 02 in stages:

Table 02 | Main stages of structuring the School Meal Regionalization Program in Soure/PA.

Stages		Objectives
1	Situational diagnosis	To gather the amount of available funds based on the transfer from the FNDE and to construct an analysis of the historical series of related indicators.
2	Resumption and articulation of the network of partners	Hold alignment meetings with local farmers, EMATER/PA, SEBRAE/PA and other partners involved.
3	Promotion and technical advice	Carry out training and promotion actions for family farming and small local businesses, providing technical, legal, and financial assistance.
4	Productive mapping	To conduct a survey of local food production, based on regional identity and seasonality, for the construction of menus to be served to students.
5	Alignment between stakeholders	Hold meetings for dialogue with the school food management in the municipality, School Feeding Council (CAE), Department of Education, nutrition professionals, City Hall, and other strategic partners to present and define the agenda for purchasing products from family farming and their use in school meals.
6	Elaboration of menus	Optimization and development of menus to be served to students in the municipal education network.
7	Operationalization of public procurement	Prepare and submit, in strict compliance with the law, the list of products to be purchased from local family farmers to the Purchasing Committee of the City Hall, for the establishment of deadlines, dissemination of the plan, and the creation of public calls.
8	Logistics	Coordinate the optimal alternatives for distribution, packaging, and processing of the food products purchased from local farmers, followed by the implementation of the new menus and distribution of meals in the schools.

Source: Authorship (2023)

The sequence of these stages reflects the theoretical rationale presented by Fornazier and Belik (2013), in which local agri-food systems emerge as an alternative to the distortions and gaps allowed by the conventional production model, as well as seeking to “decommodify” food by connecting them to producers and consumers through the logic of proximity and locality.

The situational diagnosis mapped the values credited to the municipality, the resources spent on the acquisition of inputs from family farming, as well as which products and producers were included. The historical series covers the period from 2017 to 2021 and is detailed in Table 03 - where non-compliance with the current PAA/PNAE legislation in previous years (2017 and 2018) is observed, as well as the inclusion of new local and identity-based items among the purchased products, starting in 2019.

Table 03 | Summary of the report on public procurement of family farming for school meals in Soure/PA, between 2017 and 2021.

Year	Amount credited (BRL)	Value of expenses in family farming (BRL)	Percentual (%)	Purchase products
2017	756.471,60	168.846,39	22,32	Cassava flour, tapioca flour, tapioca gum, cowpea, slaughtered chicken, fruit pulp, açaí, pineapple, banana, watermelon, papaya, cassava, sweet potato, parsley, cabbage, lettuce, dried coconut, buffalo milk, free range eggs.
2018	939.462,40	159.203,50	16,95	Same as 2017.
2019	703.036,00	355.355,11	50,55	Cassava flour, tapioca flour, tapioca gum, cowpea beans, chorizo and marajoara sausage, fish, fruit pulp, açaí, pineapple, banana, papaya, watermelon, lemon, cassava, sweet potatoes, free-range eggs, parsley, cabbage, okra, lettuce, green coconut, dried coconut.
2020	701.888,00	290.917,59	41,45	Cassava flour, tapioca flour, tapioca gum, cowpea, Marajoara chorizo, fish fillet, fruit pulp, açaí, pineapple, banana, papaya, watermelon, melon, lemon, avocado, cassava, sweet potato, parsley, cabbage, okra, lettuce, green coconut, dried coconut, Marajó cheese, free-range eggs.
2021	701.888,00	445.558,73	65,48	Idem à 2020.

Source: Authorship (2023)



In the data from Table 03, it is possible to observe a considerable percentage growth in the resources allocated to purchases from local family farming within the scope of the program under discussion, and a resulting compliance with relevant legislation. Similarly, when contextualizing this situation in the face of the Covid-19 pandemic in 2020 and 2021, OAE (2021) mentions that, in the sample surveyed during this period, access of family farmers to the PNAE/PAA program was hindered by interruptions or significant reductions in related public purchases, including cases of non-compliance with existing contracts - a phenomenon contrary to what was observed in the present analysis.

Moving forward, a process of constructive dialogue was undertaken. Close collaboration and coordination with local stakeholders - producers, government authorities, the educational community, and other entities involved in this production chain - were established, mobilizing, and engaging them to overcome obstacles and maximize opportunities aligned with the project's objectives. Additionally, the establishment of a network of institutional partners was pursued, leveraging their expertise to address the challenges encountered prior to the initiative.

Among them, the SEBRAE/PA, through its regional agency/office "Marajó-Campos," played a key role by: a) contributing to the training of stakeholders involved in public procurement; b) providing guidance on business formalization; c) defining strategies to increase purchases from family farmers; d) providing technical and management support through consultations and guidance to small businesses and family farmers involved in the initiative.

The EMATER was responsible for promoting training and technical-productive organization actions for local farmers involved in the program. They also helped with accessing the Declaration of Aptitude to the Program for Strengthening Family Agriculture (PRONAF Jurídico - DAP) and helped in mapping local production capacities.

Finally, the Municipality of Soure acted in favor of the coordination and financial support in the associativism agenda, catalyzing the creation of the Association of Family Agriculture of Campos do Marajó (AAFCAM) - a crucial action to overcome obstacles such as access to a National Registry of Legal Entities (CNPJ) and low working capital.

Regarding the issue of food and nutrition security, the reformulation of school meal menus deserves special mention. Developed by the nutrition professionals of the municipal public network, these



menus included products from family farming, focusing on healthy and culturally relevant meals. This resulted in students having access to safe and nutritious food while also supporting the local economy.

Empirically, it was observed that the student community has positively evaluated the school meals provided in the municipal public schools of Soure, particularly the items on the new menu, such as açaí, maniçoba (a traditional dish), fish fillet, “Romeu e Julieta Marajoara” (a local sweet made with buffalo milk), and various other fresh products from local fruit production and buffalo milk: hamburgers, Marajó cheese, pasteurized buffalo milk, Marajó butter, and cheese bread (Figure 03).

Figure 03 | (a) Products from local fruit growing and buffalo milk production and (b) highlights of the initiative in the media.



Source: Authorship (2023)



Regarding the operationalization of the public procurement process, it is necessary to describe the actions specifically carried out in relation to the local agri-food systems within the scope of the PNAE and PAA.

In the period of analysis of this research, from 2017 to 2021, a total of R\$ 3,777,080.80 was invested in family farming and school meals. Eighty-seven family farmers were identified who submitted sales projects and were qualified in the public calls during this period, accessing a financial resource of R\$ 1,009,768.00 (SEBRAE/PA, 2022). However, it is important to contextualize these data within a broader lens that intersects and expands the analysis of local agri-food systems in order to better understand the outcomes of the initiative. Table 04 presents the overall figures related to the target audiences of the program.

Table 04 | Global sample data of the universe of beneficiary stakeholders

Publics	Quantitative
Family farmers in the municipality	1855
Cooperatives of family farmers in the municipality	04
Associations of family farmers	03
Rural entrepreneurs	87
Microentrepreneurs (individuals)	605
Small businesses opting for Simples taxation regime	850
Students enrolled in the municipal education system	4937
Number of classes/groups in the municipal education system	246

Source: Authorship (2023)

Upon analyzing the data from Table 04, considering the financial resources allocated to the purchases from family farming for school meals, the ratio of R\$ 204.53 invested per enrolled student and R\$ 4,104.75 per class in the municipal school system is obtained. Comparing this analysis with the calculation methodology adopted by the PNAE - the ratio of the value transferred in Brazilian Reais for 200 school days per year, per student - the reference value is R\$ 0.36 for elementary and high school students. In Soure, this ratio is R\$ 1.02, which represents a 284% increase.

It is also worth noting the relationship between this program and the promotion of formalization and the circular flow of the local economy, as evidenced by the increase in registered small businesses and the influx of financial resources into the territory. A total of R\$ 19,799,922.63 was invested in public procurement related to these bids between 2018 and 2021. This investment is correlated with a significant increase of 129% in the number of individual micro-entrepreneurs and 88.80% in companies opting for the Simples Nacional tax regime between 2017 and 2021 within the same time frame (SEBRAE/PA, 2022).

The program also had indirect and qualitative results, including the increased organization, and strengthening of the local supply chain. It led to the valorization of family farming production, improved organization, and increased income for family farmers, with positive impacts on related economic sectors such as fish farming, fruit production, livestock, dairy, commerce, and services.

Similarly, another significant outcome is the growth of associations and cooperatives. Currently, there are four associations/cooperatives of family farmers involved in this new dynamic of public procurement, with approximately 150 families engaged in the process of producing and delivering food for the PNAE in the municipality. This initiative also led to the creation of the aforementioned AAFCAM in 2019, which currently has 55 members supplying vegetables, fruits, frozen fish from local fish farming, Marajó cheese, and Marajó sausage.

Lastly, it can be inferred that this research initiative is closely aligned with the Sustainable Development Goals (SDGs) established by the United Nations. Among the 17 SDGs, this initiative addresses the following goals: poverty eradication, zero hunger and sustainable agriculture, good health and well-being, quality education, decent work and economic growth, reduced inequalities, and partnerships for the goals. The program's strategies and operations contribute to a more sustainable and inclusive reality, addressing prominent social, economic, and environmental challenges.



FINAL CONSIDERATIONS

By examining the realm of family farming and its complex context and interconnections, it is understood that its connection to the school feeding program represents a fertile field of study and a bridge to many opportunities. The conceptual discussion and the presented case study allow us to understand this relationship beyond an action focused solely on food and nutritional security.

Based on the theoretical foundation and the pragmatic study of local agri-food systems underpinned by public policies, the objective of this work was achieved by sharing a case study that ensured more than just access to safe and quality food. It also promoted social and economic inclusion for hundreds of people towards better living conditions, given the flow of work and wealth generated by the new dynamics implemented in the agri-food systems, valuing and developing an entire chain that encompasses the production, distribution, trade, and consumption of locally identified food.

It is further understood that by prioritizing the purchase of food products from local producers and supporting other links in the chain, this action provided students with access to healthy and safe food, promoted the development of local agri-food enterprises, and advanced the agenda of sustainability in family farming and this socio-economic ecosystem.

An important addition is the maintenance and acceleration of efforts of this program even during the Covid-19 pandemic. Despite the challenges of the pandemic scenario, the supply of food remained normalized and the meals were regularly delivered to the families of students in both urban and rural communities of the municipality. Similarly, even during the period of school closures, students in the local area received daily meals prepared for consumption at their homes. For rural students, kits were assembled that included items from family farming and were delivered on foot, by carts, or even by riding horses and buffaloes.

As suggestions for future research, it is recommended to specifically analyze alternatives for strengthening the initiatives presented, focusing on cooperativism, solidarity economy, network collaborations, training actions for family farmers regarding social technologies (both productive and managerial), studies that examine the productive relationships with the environment, and consumers' perceptions of local designations. It is also important to analyze the socio-economic and territorial aspects of innovative processes related to Local Agri-food Systems and the potential



products protected under denomination and indication of origin, as well as to intensify the communication of these results in order to inspire other municipalities, whether in Marajó or elsewhere, to implement similar endeavors. This would contribute not only to symbolic and isolated islands of success but also to a significant contribution to rural development.

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