Best practices for linking school meals to family farming and sustainable agriculture production in Brazil

Instituto Comida do Amanhã
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Instituto Comida do Amanhã

Francine Xavier
Juliana Tângari
Mónica Guerra

Instituto Regenera

Daniella Rabello
Fabrício Muriana
Maurício Alcântara

Report elaboration

Maurício Alcântara (research coordination)
Vitória Leão (research design and coordination)
Angélica Nakamura (research assistance)

Collaborators

Fabrício Muriana
Flavia Brito
Juliana Tângari
Lucas Sousa
Roberta Curan
Thaís Barreto

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List of Acronyms

AAZL: Associação dos Agricultores da Zona Leste (Eastern Zone of São Paulo Farmers Association)
ABC: Agência Brasileira de Cooperação (Brazilian Cooperation Agency)
AMAU: Articulação Metropolitana de Agricultura Urbana (Metropolitan Urban Agriculture Articulation of Belo Horizonte)
ANVISA: Agência Nacional de Vigilância Sanitária (Brazilian Health Regulatory Agency)
ANC: Associação dos Pequenos Produtores do Sítio Riacho Fundo (Association of Small Producers of Sítio Riacho Fundo)
ANC: Associação Natural de Agricultura de Campinas e Região (Natural Agriculture Association of Campinas and Region)
APA-Jundiaí: Área de Preservação Ambiental de Jundiaí (Jundiaí Environmental Preservation Area)
APA: Área de Proteção Ambiental da Chapada (Araripe Plateau Environmental Protection Area)
CAE: Conselho de Alimentação Escolar (Municipal School Feeding Council)
CAFA: Centro de Abastecimento da Agricultura Familiar e Agricultura Urbana (Family Farming and Urban Agriculture Supply Center of Belo Horizonte)
CAISAN: Câmara Intersetorial de Segurança Alimentar e Nutricional (Intersectoral Chamber for Food and Nutritional Security)
CATRAPOVOS: Mesa Permanente de Diálogo Catrapovos Brasil (Permanent Dialogue Table Catrapovos Brasil)
CBH-PCJ: Comitês de Bacias Hidrográficas dos Rios Piracicaba, Capivari e Jundiaí (Committee of the Hydrographic Basins of the Piracicaba, Capivari, and Jundiaí Rivers)
CdA: Comida do Amanhã
CDC: Comitês de Desenvolvimento Comunitário (Community Development Committees)
CDMR/A: Conselho de Desenvolvimento Municipal Rural de Araripina (Municipal Rural Development Council of Araripina)
CGU: Controladoria-Geral da União (Office of the Comptroller General of the Union)
Cipar: Centro Integrado de Pesca Artesanal (Integrated Artisanal Fishing Center of Santarém)
CISAPE: Consórcio Intermunicipal do Sertão Araripe Pernambucano (Intermunicipal Consortium of the Araripe Pernambucano Sertão)
CMDRSS: Conselho Municipal de Desenvolvimento Rural Sustentável e Solidário (Municipal Council for Sustainable and Solidarity Rural Development of São Paulo)
CODAE: Coordenação de Alimentação Escolar (School Feeding Coordination Office of São Paulo)
COMAPLAS: Cooperativa Mista de Agricultores do Planalto Santareno (Mixed Cooperative of Farmers from the Santareno Plateau)
COMSEA-JD: Conselho Municipal de Segurança Alimentar e Nutricional de Jundiaí (Jundiaí Food Policy Council)
COMUSAN-BH: Conselho Municipal de Segurança Alimentar e Nutricional de Belo Horizonte (Belo Horizonte Food Policy Council)
COMUSAN: Conselho Municipal de Segurança Alimentar e Nutricional (Municipal Food Policy Council)
COOPAFS: Cooperativa dos Produtores da Agricultura Familiar de Santarém (Cooperative of Family Farming Producers of Santarém)
COOPAFS: Cooperativa dos Produtores da Agricultura Familiar de Santarém (Cooperative of Family Farming Producers of Santarém)
CoopboA: Cooperativa de Agricultores Familiares da Comunidade de Boa Esperança (Cooperative of Family Farmers from Boa Esperança Community)

Cooperapas: Cooperativa Agroecológica de Produtores Rurais e Água Limpa da Região Sul de São Paulo (Agroecological Cooperative of Rural Producers and Clean Water from the South Region of São Paulo)
CREN: Centro de Recuperação e Educação Nutricional **(**Center for Urban Agriculture and Nutrition Education)
DAN: Departamento de Alimentação e Nutrição (Department of Food and Nutrition of Jundiaí)
Dicae: Divisão de Gerenciamento de Alimentação Escolar e Contratos (School Feeding Management and Contracts Division of São Paulo)
Dinutre: Divisão de Nutrição Escolar (School Nutrition Division of São Paulo)
DME: Departamento de Merenda Escolar (School Meals Department of Araripina)
DRE: Diretoria Regional de Educação (Regional Education Directorate)
EA: Estabelecimentos Agrícolas (Agricultural Establishments)
EC: Secretaria Executiva de Associativismo (Executive Secretariat of Associativism)
EMATER-MG: Empresa de Assistência Técnica e Extensão Rural do Estado de Minas Gerais (Technical Assistance and Rural Extension Company of the State of Minas Gerais)
EMBRAPA: Empresa Brasileira de Pesquisa Agropecuária (Brazilian Agricultural Research Corporation)
FACIAGRA: Faculdade de Ciências Agrárias de Araripina (Faculty of Agricultural Sciences of Araripina)
Flona: Floresta Nacional (National Forest)
FNDE: Fundo Nacional de Desenvolvimento da Educação (National Education Development Fund)
IBD: Instituto Biodinâmico (Biodynamic Institute)
IBGE: Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics)
ICLEI: International Council for Local Environmental Initiatives
INEP: Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (National Institute of Educational Studies and Research Anísio Teixeira)
LUPPA: Laboratório Urbano de Políticas Públicas Alimentares (Urban Laboratory of Public Food Policies)
MAPA: Ministério da Agricultura, Pecuária e Abastecimento (Ministry of Agriculture, Livestock, and Supply)
MDA: Ministério do Desenvolvimento Agrário e Agricultura Familiar (
MDS: Ministério do Desenvolvimento e Assistência Social, Família e Combate à Fome (Ministry of Social Development, Social Assistance, Family and Fight against Hunger)
MST: Movimento dos Trabalhadores Rurais Sem Terra (Landless Workers' Movement)
NAE: Núcleo de Alimentação Escolar (Technical Center for School Feeding of Santarém)
NGO: Organização Não Governamental (Non-Governmental Organization)
OCS: Organização de Controle Social (Social Control Organization)
Opac: Associação Orgânica de Participação (Organic Association for Participatory Certification)
PAA: Programa de Aquisição de Alimentos (Food Acquisition Program)
PAE: Programa de Alimentação Escolar (School Feeding Program of São Paulo)
PANC: Plantas Alimentícias Não Convencionais (Non-conventional Edible Plants)
PDE: Plano Diretor Estratégico (Strategic Master Plan of São Paulo)
PMAE: Política Municipal de Alimentação Escolar (Municipal School Feeding Policy of Jundiaí)
PMBH: Prefeitura Municipal de Belo Horizonte (Municipality of Belo Horizonte)
PMJ: Prefeitura Municipal de Jundiaí (Municipality of Jundiaí)
PMSAN: Plano Municipal de Segurança Alimentar e Nutricional (Municipal Plan for Food and Nutritional Security of Jundiaí)
PMSP: Prefeitura do Município de São Paulo (Municipality of São Paulo)
PNAE: Programa Nacional de Alimentação Escolar (National School Feeding Program)
PNAPO: Política Nacional de Agroecologia e Produção Orgânica (National Agroecology and Organic Production Policy)
RMBH: Região Metropolitana de Belo Horizonte (Belo Horizonte Metropolitan Region)
Sebrae: Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (Brazilian Micro and Small Business Support Service)

Semed: Secretaria Municipal de Educação (Municipal Department of Education of Santarém)
Semtras: Secretaria Municipal de Trabalho e Assistência Social (Municipal Department of Labor and Social Assistance of Santarém)
SISAN: Sistema Nacional de Segurança Alimentar e Nutricional (National System of Food and Nutritional Security)
SMASAC: Secretaria Municipal de Assistência Social, Segurança Alimentar e Cidadania (Municipal Secretariat of Social Assistance, Food Security, and Citizenship of Belo Horizonte)
SMED: Secretaria Municipal de Educação (Municipal Department of Education of Belo Horizonte)
SMSAN: Subsecretaria de Segurança Alimentar e Nutricional (Subsecretariat of Food and Nutritional Security of Belo Horizonte)
SPG: Sistema Participativo de Garantia (Participatory Guarantee System)
SUS: Sistema Único de Saúde (Unified Health System)
SUSAN: Subsecretaria de Segurança Alimentar e Nutricional (Subsecretariat of Food and Nutritional Security of Belo Horizonte)
UFMG: Universidade Federal de Minas Gerais (Federal University of Minas Gerais)
UPA: Unidade de Produção Agrícola (Agricultural Production Unit)
WFP: World Food Programme

Table of Contents

Introduction

In Brazil, education is a constitutionally guaranteed right, and access to compulsory and free Basic Education[1] is a duty of the State. Although there is also provision of education by private institutions, over 80% of students in Basic Education in Brazil are enrolled in approximately 150,000[2] public and free institutions nationwide[3]. The Constitution also establishes as a duty of the State the provision of supplementary food programs for all students registered in Basic Education, which are also offered free of charge.

The main school feeding public policy in the country is the National School Feeding Program (PNAE), which allocates federal funds for the purchase of food by state and municipal education departments, and establishes rules and criteria for federative entities to access these resources. From the perspective of students and their families, PNAE ensures food and nutritional security of students (especially in a country with enormous social inequality, where many children find higher-quality meals at school than those available at home) and play an important pedagogical role in shaping healthy diets throughout the school community. Additionally, by determining which typologies and processing level of food should be prioritized or avoided on school menus[4] and by simplifying the bureaucracy for access to public procurement, PNAE is considered an important instrument for the economic inclusion of family farmers and traditional communities (such as indigenous peoples, quilombolas, and other Brazilian traditional populations).

These last populations, specially the ones who already produce (or have always produced) in an agroecological manner, are benefited from existing policies which directly and indirectly provide mechanisms and space to find markets and recognition for the quality of their production. One example is the resolution that regulates PNAE[5], that allows a price increase by up to 30% on certified organic[6] products in comparison to the prices established for conventional products, a rule that is also present in the Food Acquisition Program (PAA)[7]. Another example is the recent resumption of the National Agroecology and Organic Production Policy (PNAPO), which expands the participation of the federal government and civil society through an interministerial chamber and a national commission[8].

Additionally, in several municipalities, there are already local regulations that deepen and enhance the guidelines advocated at the federal level - such as São Paulo and Jundiaí, cities where municipal legislation defines mandatory 30% price increase for organic and agroecological foods. São Paulo city also aims to purchase 100% organic and agroecological[9] foods via PNAE by 2026. Although local administrations have a

[1] Basic Education comprises Early Childhood Education (Educação Infantil, aimed at children between 0 and 5 years old), Elementary School (Ensino Fundamental, for students between 6 and 14 years old), and High School (Ensino Médio, for teenagers from 15 to 17 years old). In addition to these ideal age groups, the Constitution also ensures the right to formal education for individuals who did not have access at the appropriate age.
[2] FNDE, 2021
[3] Of these schools, 0.5% belong to the Union (federal schools), 20.5% belong to the 26 states or the Federal District (state schools), and 79% belong to the 5,570 Brazilian municipalities (municipal schools).
[4] The criteria for this prioritization are based on the Brazilian National Dietary Guidelines, developed by the Brazilian Ministry of Health (more info).
[5] Resolution/CD/FNDE No. 6, of May 8, 2020
[6] Organic production in Brazil was legally established in 2003, with Federal Law No. 10,831. Three types of organic conformity assessment are provided: certifications by private audit, certifications by participatory organization, and Social Control Organizations (OCS). Succinctly, the latter allows the recognition of organic quality through the trust relationship established between producers and consumers without intermediaries in the food market.
[7] Federal Law No. 14,628, of Jul 20, 2023
[8] Decree No. 7,794, of Aug 20, 2012
[9] In São Paulo state, there is an Agroecological Transition Protocol that provides guidance and support for transforming productive and social bases to restore the fertility and ecological balance of the agroecosystem in accordance with the principles of Agroecology (State Law No. 16,684, of Mar 19, 2018). Since the process of transitioning from conventional agriculture towards the criteria necessary for organic certification takes several years, the protocol allows for the recognition of producers who are in intermediate stages of this process.

more limited scope and are more susceptible to changes, the innovations observed at the municipal level serve as important laboratories for the experimentation of policies that, if successful, may serve as inspiration for the improvement of national-level legislation and policies.

The purpose of this report is to document and present, succinctly, five examples of how different Brazilian municipalities have innovated in their school feeding programs and policies by combining effective integration of federal guidelines and resources with local arrangements, initiatives, and resources. These policies further establish coherent and pioneering approaches to promoting healthy, sustainable, and inclusive nutrition within schools, while also aligning with the local productive base. The goal of this analysis is to serve as a jumping off point for a consultative and collaborative exploration process to: design a school-driven food systems transformation pilot via a co-creation process; co-develop a roadmap for deepening linkages between PNAE and organic/agroecological production; and to invest in monitoring, evaluation and learning to better understand PNAE's contribution to environmental, social, and health outcomes - including climate mitigation contributions, improved farmer livelihoods, and enhanced diet quality as evidence for influence at the municipal, state, and federal levels.

The selected cases are: **São Paulo** and **Jundiaí** (both in São Paulo state, Southeast region, in the Atlantic Forest biome), **Belo Horizonte** (in Minas Gerais state, Southeast region, in the transition between the Atlantic Forest and Cerrado biomes), **Araripina** (in Pernambuco state, Northeast region, in the Caatinga biome), and **Santarém** (in Pará state, North region, in the Amazon biome).

The document is divided into three parts. In **Part 1**, besides this introduction, there is a brief presentation of the National School Feeding Program (PNAE) and other relevant food policies to the debate proposed in this report, along with a methodological note on how the information described was collected. In **Part 2**, the five cases are presented, including a general overview of each city, key numbers and highlights, characteristics of the municipal network served by school feeding policies, and a description of the innovative action for which each city was selected for this study. Finally, **Part 3** contains the concluding remarks, with a brief comparative synthesis of the analyzed cases in different cities, lessons learned, and general recommendations.

The National School Feeding Program - PNAE

The National School Feeding Program (PNAE) is one of the most impactful public policies directed to address food insecurity. According to the latest official information, the program provides meals to more than 40 million students enrolled in approximately 150,000 public basic education schools. These schools are localized in 5,570 municipalities all around the country[10].

PNAE is also one of the key enduring public policies in Brazil. Its origin dates back the 1950s, and, since then, the program have faced structural changes, making it not only a program that envisage to address food insecurity, notably during childhood, but also a policy that, since its 2009 review, contribute to strengthen familiar and traditional communities agriculture[11].

In all Brazilian public schools – whether federal, state or municipal – school meals are free of charge and partly funded by the federal government. As a national policy, PNAE encompasses the transfer of funds from

[10] FNDE, 2021

[11] The use of *familiar and traditional communities agriculture* or *familiar agriculture* or *smallholder farming* or *small producers, etc.*, shall be understood largely, as agriculture, extractivism, livestock, fishery, beekeeping, dairy production, artisanal food processing, etc., both from family units of production and from traditional communities (native, indigenous, *quilombola* peoples, and several other traditional peoples recognized in Brazil).

the federal government's budget to state and local governments, as well to federal schools, to fund part of schools' meals costs, considering a total of 200 school days per year. Since 2009, PNAE rules that at least 30% of these federal funds shall be spent on purchasing food directly from family or traditional communities farming, preferably local ones ("the 30% rule"). The 30% rule also requires easy procurement procedures: it shall not be a competition of suppliers; prices should be fair - not squeezed - and set in advance at the public procurement call. The total amount of these transfers depends on the type of school, as detailed in Table 1.

Table 1 – Federal government's funds transfer to state and local governments and federal schools, by type of school, per student/ school day.

Type of school	Amount of federal government transfer per student/school day (R$)	Value in dollars (approximately, considering exchange rate of US$1 = R$ 5)
Nursery	1.37	0.27
Kindergarten	0.72	0.14
Indigenous and quilombola schools	0.86	0.17
Elementary and high schools	0.50	0.10
Youth and adult education	0.40	0.08
Integral education	1.37	0.27
Full-time High School Support Program	2.56	0.51
Students who attend Specialized Educational Services after school hours	0.68	0.14

Source: Resolution 2 of the National Education Development Fund, of Mar 10, 2023.

These federal funds must be used exclusively for the acquisition of the food needed to cook schools' meals. And, according to the program's regulation, these meals must be defined by nutritionists and must accomplish nutrition requirements. When directed to traditional communities, both indigenous and quilombolas, meals also must respect traditional food habits. Overall, the definition of the products that are allowed or not are based on the Brazilian National Dietary Guidelines, developed by the Brazilian Ministry of Health (more info), and adapted for school meals by the National Education Development Fund (FNDE) (more info).

As delineated, what makes PNAE a systemic policy is the fact that it not only envisages to guarantee nutrition security to students, but it also is a key policy for keeping children at school, since meals are free for all students, and ensuring food supply resilience, giving regular and fixed demand for smallholder farmers, considering that the 30% rule is mandatory. Cities and states that do not comply with it risk losing their entire federal funding for school feeding.

In many regions across Brazil, institutional markets, such as PNAE, are the most important market for familiar agriculture production and traditional communities surplus. It works guaranteeing a minimum demand, with predefined conditions (such as timeline, price, quantities, products), which reduces the risk from the producer side. This guaranteed demand provided by PNAE is able, in many cases, to cover production costs, allowing the producers to increase their production for other markets, promoting local economic dynamism. PNAE also fosters a more diversified local production, since it demands assorted types of food, including vegetables, fruits, breads, milk, etc.

At the national level, the program is coordinated by the National Education Development Fund (FNDE), which is also responsible for defining the program's technical and financial rules, controlling the funds transfers, and for holding federal schools, and state and local governments accountable for complying with PNAE rules. At the state and local governments levels, the respective state and municipal education secretaries are the ones responsible for implementing the program, in accordance with the federal regulation. They can also complement the federal regulation, defining additional requirements and rules, as well as complementing the funds needed to assure universal and healthy free school meals.

PNAE's implementation is monitored by School Feeding Councils at each municipality, composed of representatives from the federal, state and local governments, teachers, student's parents, and civil society organizations. The Council must evaluate the quality, sanitary and other conditions by which the meals are being provided. The financial execution of the program is also supervised by the Federal Court of Audit and the Federal Prosecutor.

PNAE and environmental sustainability

Although PNAE was not originally designed as policy for environmental sustainability, it has been managed, mostly at the state and local levels, as an instrument for promoting, from one side, a broader access to healthy food, and, from the other side, a mechanism to foster agroecological production. As it will be detailed later, many states and local governments are defining additional requirements for PNAE's implementation and are integrating the program to other public policies, what enables the transition to a more healthy and sustainable food environment, such as[12]:

- Examples of additional requirements to PNAE's implementation:
    - Substitution of ultra-processed food to organic, fresh and healthy meals.
    - Red meat consumption reduction in the schools' meals menu.
    - Prioritization of native and seasonal food.
    - Requirement of a higher share (more than 30%) of family or traditional community farming.
    - Requirement of a mandatory share of agroecological or organic labeled food.

- Examples of integration with other policies:
    - Food waste reduction measures.
    - Nutrition and food education.
    - Integration with school and community gardens.
    - Integration with urban agriculture.
    - Environmental education.
    - Integration with technical assistance and financial aid to local small producers.

A recent study developed by the Public Policies Group, from the Agronomics School of São Paulo University[13], tried to estimate the potential of PNAE in promoting greenhouse gases emissions mitigation. Preliminary results signalize that the program, in many regions, is key in defining the variety of local agriculture production, because of the "guarantor effect" that it implies for the producer. This means that the type of food required by the program has a direct effect on the way it is produced, so, in places that agroecological products are required or prioritized, it is expected an increase of a more sustainable agriculture.

[12] CdA, 2022
[13] GPP/ESALQ, 2023

Therefore, PNAE is seen as a national food and nutritional security strategy in Brazil, as it not only promotes domestic food production and consumption but also acts as a catalyst for the development of healthy food supply chains. Furthermore, it serves as a crucial aspect of school attendance and retention policies, particularly in many impoverished areas of Brazil, where parents send their children to school to ensure they receive at least one nutritious meal per day.

Despite all positive aspects, PNAE still faces structural problems that hamper its full potential in guaranteeing food and nutritional security for children, fostering familiar agriculture, and promoting healthy food and sustainable, regenerative and agroecological agriculture. Some of these challenges are:

- Financial structure: as a national state policy, it is anchored in the federal budget (by the National Education Development Fund) and in the state and local governments budgets, and, as so, it suffers from the government's financial constraints.
- The federal funds values are quite low, as shown in Table 1. The values are updated according to the government's conditions or political will, despite the regulation determining it must be on an annual basis.
- The program is not universally implemented yet. There are still many regions in Brazil where children do not have access to schools' meals.
- These federal funds are directed for food procurement only, not to be used for kitchen updates, nor logistics and cold chains, nor cooks training or nutritionists' recruitment.
- Many school feeding menus do not conform with local food culture, nor local and seasonal food. Many nutritionists in charge of school menus and the local authorities in charge of public food procurement calls still lack full knowledge of how to perform food orders that are keener to meet local food supply or at least local agriculture possibilities.
- Food safety industrial-like rules and requirements often exclude traditional communities' ability to supply food for their neighbor schools.
- In order to be able to benefit from the 30% rule, farmers or their associations shall have a federal ID for family farming, issued by licensed agencies under specific rules, which tend to exclude many smallholder farmers, mainly those not part of a legal association or cooperative[14], and those located in urban areas.
- Many state and local governments still do not comply with the 30% rule, which is an effect of multiple drivers. One is the dismantlement of public policies directed to provide adequate conditions for family and traditional agriculture (credit, technical assistance, infrastructure, etc.). Another - among others - is the lack of either empathy or awareness from local authorities regarding the importance and strategic role of such policy.

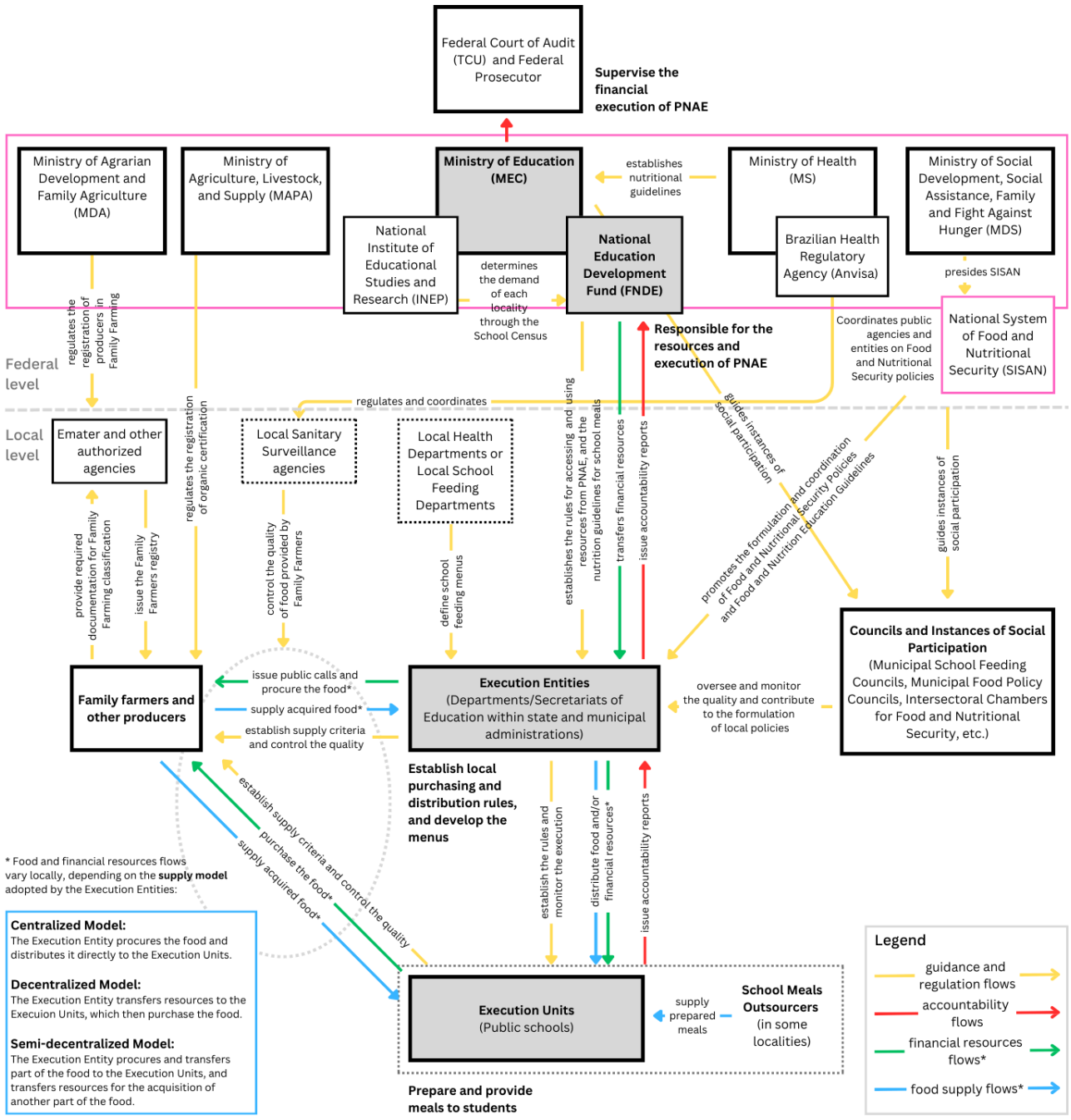
Among all these challenges, the most important, at the end, have to do with the program's governance. Since its implementation depends on state and local governments, the way PNAE is translated into healthy and

[14] Farmers cooperatives, due to their evident larger supply capacity than individual farmers, have legal preference at such public procurement call of offers. Big cities can even exclude individual family farmers from the food procurement calls requirements, addressing, through this specific direct purchase procedure for school feeding, only cooperatives/associations. A regular cooperative, for the regulation purpose, is the association with more than 50% of regular licensed individual family farmers. In one way, being part of a producer cooperative helps farmers to mitigate logistics costs and reduce bargaining asymmetries, in another way, a cooperative or association increases producer's advocacy and lobby powers, as these entities usually have a seat in policy councils and in other participatory policymaking spaces.

sustainable meals relies mostly on the subnational management, financial, and technical structures. To be said that it is not necessarily something bad or undesirable, given Brazil's federative structure and continental extent, but it is a huge challenge that must be met with adequate measures.

The diagram below illustrates some of the main entities that participate in or influence the execution of PNAE at the federal and local levels. Although not exhaustive, it helps visualize the networks of institutionalities and relationships that appear in the cases presented in this document.

Picture 1 – Non-exhaustive visualization of the main entities that participate in PNAE's implementation



Source: Developed by the authors.

Methodological Note

The selection criteria used in this report were designed to ensure that the findings would be relevant to a wider range of cities in Brazil. By including cities from different regions and biomes, with varied populations, and different policy environments (Table 2), the report was able to illustrate some of the challenges and also innovative solutions for the implementation of school meals policies in Brazil.

Table 2 – List of cities reported in this study.

City	Biome	Population	Innovative solution reported
Araripina (PE)	Caatinga	85,000	Coordination between local food production and school meals
Belo Horizonte (MG)	Atlantic Forest/ Cerrado	2,7 million (state capital)	The network of institutionalities of the Municipal School Feeding Program
Jundiaí (SP)	Atlantic Forest	443,200	Inova na Horta Project
Santarém (PA)	Amazon	331,900	Inclusion of amazonian socio-biodiversity produces in school meals
São Paulo (SP)	Atlantic Forest	12,3 million (state capital)	Ensuring healthy and sustainable food for over 1 million students

Source: developed by the authors.

> ***Note:*** *Apart from Araripina, these cities are engaged with the Urban Laboratory of Public Food Policies - LUPPA, a program leaded by Comida do Amanhã, in partnership with ICLEI South America, and in which Instituto Regenera is a mentor partner (more info).*

The initial stage of constructing the methodology of this study involved the development of a script outlining how the research would be presented. This document, containing key information which should be included in the final result, served as a reference to guide both the structuring and writing of the final report, as well as the preliminary collection of information. From this stage, an Indicator Matrix was developed (organized into dimensions, sub-dimensions, guiding questions, and indicators), listing all the information about each city that needed to be obtained. This tool functioned to guide the deliberation on methods of information collection and to track the status of collected and pending information.

Data collection methods used for this research included: i) gathering public available data on municipalities and their policies implementation status (such as public databases, news, and legislation); ii) bibliographic research; iii) records of information provided by technicians and managers in meetings and visits to municipalities, and iv) semi-structured interviews focused on the implementation of the policy and it's particularities on each case with the five technicians, public servants and managers of municipal administrations. The latter were mainly conducted towards the final stage of the research with the purpose of validating and complementing information previously collected, ensuring that the description on this document also includes the perspective and narrative of actors responsible for policy implementation.

Table 3 – List of semi-structured interviews conducted to access and validate data for this study.

City	Institutional post	Date
Araripina (PE)[15]	Rural Development Secretary of Araripina	3/15/2024
Belo Horizonte (MG)	Secretary of Food and Nutritional Security of Belo Horizonte	5/3/2024
Jundiaí (SP)	Inova na Horta Project Coordinator of Kairós Institute	4/14/2024
Santarém (PA)	Technical Center for School Feeding Coordinator of Santarém	5/13/2024
São Paulo (SP)	President Secretary of Municipal School Feeding Council of São Paulo	5/10/2024

Source: developed by the authors.

- In this report, "educational unit" was used as a general category (encompassing schools and other educational structures, such as daycares and nurseries, for example). As mentioned in footnote number 1, Brazilian Basic Education comprises three official levels (Early Childhood Education, Elementary School, and High School), distributed according to students' age groups.

- Generally, municipal education networks tend to concentrate on the first two levels, and it is common for the last level to be offered in the state education network, but this is not a rule: the distribution of offerings depends on local arrangements between the municipality and the state government. This report aimed to gather, describe, and analyze data from the municipal administrations.
    - In some cases, there are agreements between the government and non-profit educational institutions (community, philanthropic, and confessional) for attending children from zero to three or six years old. Those cases are specified as “partner networks”.

- When the information regarding total served meals was accessible, we divided it into an average of 200 school days.

- Regarding the budgets for school meals, values provided by the National Fund for the Development of Education (FNDE) transferred to each municipality were considered. The choice of the year 2022 refers to the possibility of obtaining information about the direct purchase from family farming, as it is the last year this information is publicly available. In the case of municipalities where it was possible to access information about the co-participation of the municipal and/or state entity, the years vary according to the availability of the data.

- Public data on Food and Nutritional Security of the population are available aggregated at the state level. As a possible proxy for the population facing food insecurity at the municipality level, the number of individuals registered in the Unified Registry (Cadastro Único) was used for each city. The Unified Registry is a tool of the Ministry of Social Development, Social Assistance, Family and Fight against Hunger that aims to identify all low-income families in the country for the purpose of inclusion in social assistance programs and income redistribution. Among these individuals, emphasis is placed on how many are beneficiaries of the Bolsa Família Program, Brazil's main income redistribution program.

- We do not use categories such as "public policies" and "public actions" to designate actions strictly carried out by the State, as we understand that they are more about networks of institutionalities

[15] An additional conversation held by phone was conducted on April 24th.

(both public, private, and civil society) that are structured around the guidelines, responsibilities, and resources established by their interaction for carrying out public functions[16].

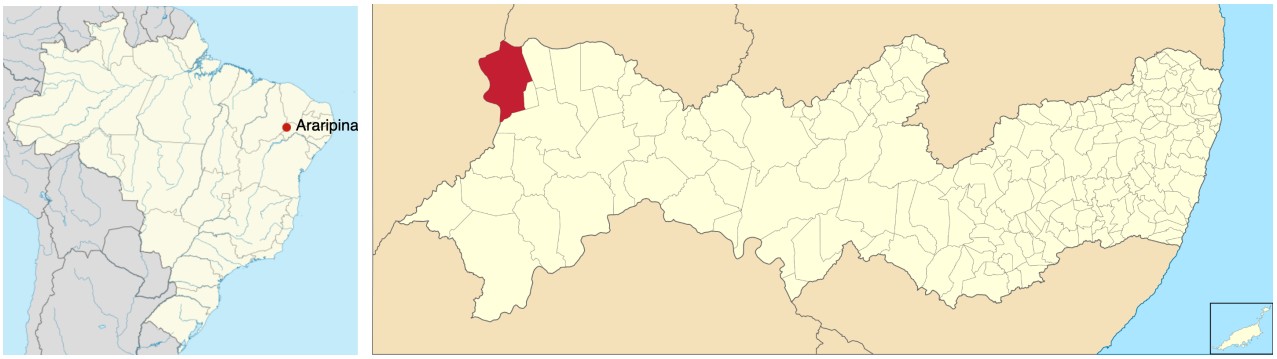
- During the research, the main limitations encountered were related to access to information. In this process, we relied on publicly available data and the active transparency efforts of the municipalities, as well as the availability of municipal officials to grant meetings and interviews for the collection of information that was not publicly accessible.
- The body of actions and innovations described does not necessarily represent an exhaustive description of the cases, but rather what was possible to collect during the considered research period. The prioritization of collected information followed the criteria of the research objectives.

The research was conducted between March and May 2024.

We express our gratitude to the municipal governments of Araripina, Belo Horizonte, Jundiaí, Santarém, and São Paulo, to the individuals who kindly granted interviews for the completion of this research, and to WFP Centre of Excellence against Hunger Brazil.

[16] Lascoumes, Le Galès 2020; Frey 2000

Araripina: Network of Collaboration with Local Family Farming



Araripina is located in the state of Pernambuco, Northeast Brazil, 681 km (423.15 miles) from Recife, the state capital. The municipality shares borders with the states of Piauí and Ceará and lies in the Brazilian Semi-Arid region, characterized by low rainfall and occasional severe droughts. It is also part of the Araripe Plaster Hub, a group of 15 municipalities in the region responsible for 97% of the gypsum consumed in Brazil[17], and is a member of the Intermunicipal Consortium of the Araripe Pernambucano Sertão (CISAPE)[18]. Part of the municipality is within the Araripe Plateau Environmental Protection Area[19] (APA), under federal management, covering 10.5% of the Conservation Unit, which spans 38 municipalities in the bordering states. Araripina has a registered quilombola community[20], and its agricultural production is characterized by family self-consumption. The main crops include maize and beans intercropping, along with others adapted to the local climate and food culture, especially cassava[21]. Araripina is also known for its honey production, being the largest producer in the state[22]. The municipality is also part of the Planning Unit of the Brígida River Basin, a component of the Sub-Medium region of the São Francisco River Basin Committee[23]. It is important to mention the impact on production systems and landscape resulting from the recent installation of wind farms in the Araripe region[24].

> ***Important note:*** *Unlike the other municipalities, in Araripina, we encountered difficulties in accessing local information about PNAE for two reasons. Firstly, the municipality, being smaller than the others, does not provide as much information online in the form of active transparency. Secondly, there was difficulty in contacting the managers and responsible parties - only one interview was possible with the Secretary of Rural Development, and it was not possible to interview the Secretary of Education or the responsible for the school meals program. This fact was considered as a research reflection based on the hypothesis that, for smaller municipalities, there may be additional difficulties in maintaining the same level of online information and availability of staff found in larger municipalities.*

[17] Sabourin et al., 2021
[18] The CISAPE was created in 2005 (Federal Law No. 11.107 of Apr 6, 2005) and includes 13 member municipalities from 3 micro-regions: the Araripe backlands, the central backlands, and the São Francisco backlands, with a total population of over 375,000 inhabitants. The Consortium operates through actions of common interest, also aimed at improving agricultural practices.
[19] Decree (no number) of Aug 4, 1997.
[20] MDS, 2015
[21] Parahypa et al., 2011; Sabourin et al., 2021
[22] Kahn et al., 2014
[23] The São Francisco River Basin (SFRB) covers 8% of the national territory, with an extension of 2,860 kilometers, spanning six states in Brazil. For management purposes, the SFRB has been divided into four physiographic regions: Upper (40% of the SFRB area), Middle (39% of the SFRB), Sub-medium (17% of the SFRB), and Lower São Francisco (5% of the SFRB).
[24] Fiocruz, n.d.; Conectas, 2021

Key figures/highlights

- Araripina has a population of 85,088 inhabitants[25], with 60.7% concentrated in urban areas[26]. It ranks as the 18th most populous city in the state of Pernambuco.

- Araripina has 7,375 agricultural establishments (EA) according to the Agricultural Census of 2017[27], with 80.5% being family farming, close to the state average in Pernambuco (82.5%). 96% of these establishments are smallholdings (up to 50 hectares)[28] and concentrate 54.7% of the total area of establishments.

- Main economic activities in 2017[29]:
    - Production of temporary and permanent crops: 58.8% of agricultural establishments; temporary crops alone accounts for 58.4% of agricultural establishments.
    - Livestock production: 39.4% of agricultural establishments.

- Main products: beans, corn, and cassava, which together amount to R$ 17.9 million in production value. Cassava production accounts for 83.3% of this total and; 70.3% of all agricultural establishments have poultry production in 2017[30].

- 4.5% of agricultural establishments have some type of organic production recognition. The National Registry of Organic Producers records 95 agricultural establishments: 59 linked to the participatory certification of the Association of Farmers of the Araripe Territory (ECO Araripe) (more info); 29 to a Participatory Guarantee System (Association of Small Producers of Sítio Riacho Fundo); and seven farmers to IBD Certifications (ANC)[31], the latter specialized in honey production.

- There are 64,715 individuals registered in the Unified Registry (Cadastro Único), with 68% of them classified as “in poverty”[32].

Network served by the National School Feeding Program (PNAE)

- 47 municipal schools
    - They cover the levels of daycare, preschool, elementary (from 0 to 14 years), and Youth and Adult Education.
    - 17 units are located in rural areas, covering all levels of education in the municipal network.
- Approximately 12,135 students served.
- Funds from FNDE[33]: 1,034,534 BRL (177,602 USD)[34]
    - In 2022, 68.01% of the funds transferred by the FNDE were used for procurement from family farming[35].

[25] IBGE, 2023
[26] IBGE Census, 2010
[27] IBGE, 2019
[28] Araripina has a fiscal module of 70 hectares. The ranges of area up to 50 hectares, as provided by IBGE, were considered.
[29] IBGE, 2019
[30] IBGE, 2019
[31] MAPA, 2024
[32] Ministry of Social Development, Social Assistance, Family and Fight against Hunger, 2024
[33] FNDE, 2022
[34] Exchange rate on May 5, 2024.
[35] FNDE, 2022

Implementation structure of the National School Feeding Program (PNAE)

- The school meal program is entirely managed by the municipal administration of Araripina.
- Logistics System: The School Feeding Center operates as a central hub for both fresh and non-perishable food items. Subsequent distribution to schools is carried out by the municipality using its own logistics infrastructure.
- Procurement and Quality Policy: The criteria for food selection is the prioritization of locally produced foods, mainly from family farming.
- Pedagogical Actions:
    - Training sessions are planned with the municipality's nutritionists for the proper preparation of local foods.
    - Teachers and students undertake pedagogical visits to the agricultural production areas of the municipality.

Key public authorities & food actors

- **The School Meals Department (DME),** linked to the **Department of Education:** is the official entity responsible for school meals in the municipality. It is responsible for the development and implementation of policies related to school feeding.
- **Department of Rural Development:** conducts mapping and collaboration with civil society organizations, cooperatives, and associations of family farmers to provide technical assistance focusing on agroecological production and access to public procurement, especially the National School Feeding Program (PNAE).
- **Executive Secretariat of Associativism:** has been organizing the Urban and Rural Associativism Seminar of Araripina since 2017, providing a space for training and capacity-building focused on entrepreneurship in family agriculture.
- **Municipal Rural Development Council of Araripina (CDMR/A):** Established in 1996[36], the council plans, monitors, evaluates, and controls agricultural actions in the municipality. From its beginning, it has emphasized community agricultural programs and fostered the formation of farmers' groups.
- **Community Development Committees (CDC):** there are 14 CDCs in the municipality, serving as mediation nuclei for organization and capacity-building through which public actions regarding agricultural systems are operationalized.
- **Brazilian Micro and Small Business Support Service (Sebrae):** has been operating in the municipality for three decades, focusing on strengthening local productive chains (more info)
- **Union of Rural Workers, Farmers, and Family Farmers:** Operating in the municipality for over 60 years, the Union strengthens policies aimed at family farming in Araripina. It is affiliated with the Federation of Rural Workers, Farmers, and Family Farmers of the State of Pernambuco (more info) and the National Confederation of Agricultural Workers (more info).

[36] Municipal Law No. 2,058, of Aug 6, 1996

- **Faculty of Agricultural Sciences of Araripina (FACIAGRA)**: Established in 1975, this higher education institution is affiliated with the Educational Autarchy of Araripe and is a partner of the Urban and Rural Associativism Seminar of Araripina.
- **NGO Chapada:** a civil society organization focused on promoting agroecology in the Semiarid region. Since 2004, it has been conducting technical assistance activities and organizing the Araripina Agroecological Fair (more info).
- **Municipal School Feeding Council of Araripina (CAE)**: Established in 1995[37] and restructured in 2000[38], the CAE is responsible for overseeing the control of resources allocated to school feeding.

Detailed presentation of the innovative action: Coordination between local production and school meals

The Municipality of Araripina received two consecutive awards in 2017 and 2018 from the Ministry of Education (MEC) regarding school meals. The awards were part of the Journey of Food and Nutritional Education, promoted by the MEC since 2017 to foster the practice and discussion of such actions in the school environment (more info).

The initial prize was granted within the thematic focus of School Feeding and Childhood Obesity Prevention, recognizing the 30 best municipal experience reports, including Araripina. The second one was under the theme of Real Food in School, where the Municipality competed focusing on regional cuisine, ranking among the top 20.

The closer relationship between local production and school meals in Araripina is the result of coordination between the actions of the Department of Rural Development and the Municipal Department of Education. Among the highlighted actions, the following stand out, with a particular focus from the rural development department:

- Decentralization of rural assistance policy implementation:
    - Creation of 14 Community Development Committees (CDCs), composed of representatives from family farmer associations, union leaders, political leaders, and organized civil society.
    - CDCs act as mediators between the actions of the City Hall and family farmer organizations.
    - Monthly meetings are held between CDCs and City Hall, aiming to strengthen productive chains.

- Strengthening of associative and cooperative forms:
    - Mapping of previous experiences with civil society organizations and proposals for partnerships.
    - Annual training of associations' legal representatives to understand and adapt to public procurement processes in partnership with Sebrae.
    - Action by associative bodies to strengthen production and local logistics alternatives.
    - Created in 2023, the *Legal Associativism Program*, focuses on two themes: legal issues and the construction of the Municipal Policy for Agroecology and Organic Production. The action is held in partnership with the Executive Secretariat for Women, NGO Chapada, Faciagra, Sebrae, and other grassroots organizations.

[37] Municipal Law No. 2,035, of Sept 20, 1995
[38] Municipal Law No. 2,219, of Aug 28, 2000

- Promotion of rural agro-industry:
    - The "Queens of Cassava" Project (more info) trains and empowers women in the industrial processing of cassava, aiming to produce derivatives such as cakes, bread, among others. The action was developed in partnership with the Brazilian Agricultural Research Corporation (Embrapa) (more info).

- Sensitization and training of nutritionist teams and food preparation staff to ensure the purchase of local foods:
    - In addition to intersectoral dialogue, every food preparation team at schools visits agricultural production areas in the municipality twice a year to learn about the origin and specifics of the foods.

- Promotion of agroecology:
    - Since 2006, the Municipality has had a policy focused on soil quality and promoting reforestation[39].
    - Strengthening of processes for quality recognition in partnership with the Ministry of Agriculture, Livestock, and Supply (MAPA) and Sebrae.
    - A proposal for a Municipal Policy for Agroecology and Organic Production has been under legislative review since late 2023 (more info).

Challenges: Araripina has historically undertaken actions to strengthen the local production chain in coordination with various institutional actors in the municipality. One challenge is the creation of regulatory frameworks that ensure budget and other resources for maintaining technical assistance fronts.

The characteristic of a dry climate is another factor involved in ensuring food delivery. When issues arise related to this, the Municipal Department of Education provides a contractual addendum to adapt both products that can be substituted and delivery periods, which occasionally can anticipate the provisioning of subsequent months.

School Meal Distribution Center of Araripina. Credit: Carlos Brito

[39] Municipal Law No. 2,387, of Feb 9, 2006

Belo Horizonte: Intersectoral Approach to Ensuring Healthy School Meals

Belo Horizonte is located in the state of Minas Gerais, Southeast Brazil, and it is the political and administrative capital of the state[40]. The municipality is part of the Belo Horizonte Metropolitan Region (RMBH), composed of 34 municipalities and 16 municipalities in the surrounding area, considered as the Metropolitan Collar[41]. The RMBH has Environmental Conservation Units (UC), important for the conservation of Atlantic Forest vegetation, including: Cercadinho Ecological Station, Serra do Rola Moça State Park, and South RMBH Environmental Protection Area (APA), all at the state level[42]. The city's location is known for its higher altitudes, ranging from 600 to over 1,000 meters[43], and in a region with a geological structure known as the Iron Quadrangle, one of the main formations with mineral deposits in the country[44], whose exploitation is aimed at the foreign market. Despite mining, the services sector is the main activity, representing about 80% of the economy[45]. In 2021, according to IBGE, Belo Horizonte was the municipality with the fourth-largest GDP share in the Brazilian economy (R$ 105 billion), behind São Paulo (SP), Rio de Janeiro (RJ), and Brasília (DF)[46]. Even with the prominence in other economic activities, agriculture is present in the municipality and in the Metropolitan Region, and the city hall is recognized for its trajectory in actions focused on urban and peri-urban agriculture since 1993, integrated with RMBH, aiming to promote food and nutritional security, generate food and income, and encourage agroecology[47].

Key figures/highlights

- With a population of 2,7 million inhabitants[48], with 99.9% concentrated in urban areas[49], Belo Horizonte is the most populous city in the state and the sixth in the country.

[40] UFMG, 2024
[41] RMBH Metropolitan Plan, 2024
[42] Conservation Units in Brazil, n.d.
[43] Belo Horizonte City Hall, 2017
[44] Roeser; Roeser, 2010
[45] UFMG, 2024
[46] Prates, 2023
[47] Instituto Escolhas, 2022; Almeida, 2016
[48] IBGE, 2022
[49] IBGE Census, 2010

- In the RMBH, there are 6,582 agricultural establishments (EA), with 48 located in the capital city, according to the 2017 Agricultural Census[50]. Of this total, 54% are classified as family farming establishments in the region, and in the municipality of Belo Horizonte, this percentage rises to 66.6%. In the state of Minas Gerais, family farming represents 72.7% of agricultural establishments.

- Highlights in agricultural activity in the RMBH[51]:
    - Temporary and Permanent Crops: Account for 24.9% of agricultural establishments;
    - Temporary Crops: Represent only 15.7% of agricultural establishments;
    - Animal Production: Constitutes 58.9% of agricultural establishments;
    - Horticulture and Floriculture: Represents 14.5% of agricultural establishments.

- The main products of permanent crops in the RMBH include banana, and tangerine/bergamot/mandarin (classified as one by IBGE), orange, arabica coffee beans, and guava. In 2017, these products collectively reached an annual production value of R$ 62.4 million[52].

- The main products of temporary crops in the Belo Horizonte Metropolitan Region (RMBH) include forage corn, forage cane, forage crops for cutting, sugarcane, corn, and cassava. In 2017, these products collectively reached an annual production value of R$ 36.4 million[53].

- In the Belo Horizonte Metropolitan Region (RMBH), only 2.5% of agricultural establishments have any type of recognition for organic production[54]. The National Register of Organic Producers lists only 1 certified farmer, certified by IBD Certifications in the city. In the RMBH, 23 municipalities have organic certified producers, with 17 certified by certifying bodies (Instituto Mineiro de Agropecuária, Ecocert Brasil, and IBD Certifications) and one by OCS (Coletivo Agroecológico de Esmeraldas - COAGE)[55].

- There are 682,646 individuals registered in the Unified Registry (Cadastro Único), with 41% of them classified as "in poverty"[56].

Network served by the National School Feeding Program (PNAE) in Belo Horizonte City

- 611 school units:
    - 323 municipal units
        - Cover education levels from 0 to 14 years, in addition to Youth and Adult Education.
        - Approximately 161,700 students served.
        - Average of 285,000 meals served daily.
    - 248 partner units for ages 0 to 6 years
        - 97% served on a full-time basis.
        - Approximately 28,850 children served.
        - Average of 125,000 meals served daily, including 40 partner units of the Integrated Educational Assistance Program.
    - 40 partner units of the Integrated Educational Assistance Program

- Average daily meals served:

[50] IBGE, 2019
[51] IBGE, 2019
[52] IBGE, 2019
[53] IBGE, 2019
[54] IBGE, 2019
[55] MAPA, 2024
[56] Ministry of Social Development, Social Assistance, Family and Fight against Hunger, 2024

- Ages from 0 to 6 are served 2 to 5 meals per day according to age and full or part-time educational system.
- Ages from 7 to 14 are served 1 to 3 meals per day according to full or part-time educational system and morning or afternoon shift.
- Youth and Adult Education are served 1 to 2 meals per day according to the morning or afternoon shift.
- During the vacation period, children aged from 6 to 14 are served by the School During Vacation Program, which provides three meals a day for the students (more info).

- Budget allocated to school feeding in the Municipality of Belo Horizonte[57]. Reference values for 2024, in Brazilian reais and US dollars[58]:
  - Funds from FNDE: 37,982,056 BRL (6,519,935 USD)
    - In 2022, the PMBH executed 24.1% of the funds transferred by the FNDE for procurement from family farming[59].
  - Municipality budget: 45,402,077 BRL (17,386,494 USD)

Implementation structure of the National School Feeding Program (PNAE)

- Municipal network and partner network school meals are fully managed by the municipal administration of Belo Horizonte.

- Meal preparation teams at educational units: three to four outsourced professionals depending on meals served, student ages, special diets and school shifts.

- 75 nutritionists at the Subsecretariat of Food and Nutritional Security (SUSAN) are responsible for menu planning, nutritional education activities, quality control, and food supervision in schools.
  - Out of the 75 nutritionists, 62 are responsible for weekly quality supervision in schools.

- Logistics system:
  - The Municipal Supply Center receives, stores, monitors the quality, and handles the logistics of distributing non-perishable foods.
  - Fresh food delivery is done by the producers directly to the schools.

- Purchasing and quality policy:
  - Follows the national guidelines for healthy diets of the PNAE (more info).
  - Criteria for choosing foods: nutritional needs according to the stage of education and age group.
  - The purchase of leafy greens, bread, and food for special diets is directly done by the educational units in the local market. This practice has been ongoing for over 30 years, and there is recent coordination with the Urban Agriculture Productive Units Program[60]
  - The School Food Monitoring Project monitors the availability and food quality offered in municipal public schools. It has an educational character through the identification of beneficiaries' perception of the implementation of the PNAE in schools (more info).

- Pedagogical actions:

[57] Source: Municipality of Belo Horizonte
[58] Exchange rate on May 5, 2024.
[59] FNDE, 2022
[60] The program currently has 182 productive units, including school-based, public facility-based, and collective and community gardens, with a total estimated monthly production of 3.8 tons (Escolhas Institute, 2022).

- Ongoing training actions for the PNAE implementation team carried out semi-annually via registration forms organized by the city hall. The administration developed an *Educator's Guide: promoting food and nutritional education in schools*, which is in its second edition[61] (more info).
- The *Congress of Good Practices of Professionals from the Municipal Education Network of Belo Horizonte*[62] has been held since 2018 (2018, 2019, 2022, and the fourth edition is expected for 2024) and aims to socialize and reward successful actions developed in educational units. Since its first edition, at least eight actions related to school feeding have been presented (more info).
- The *Aquaponia* Project aims to promote healthy eating from urban gardens in an alternative system, executed in partnership with the Federal University of Minas Gerais (UFMG) (more info).
- The *Health in Schools* Program was developed by the Federal Government aiming at disease prevention and health promotion in the public school network and has a specific axis for healthy eating. Belo Horizonte was a pioneer in joining the Program and, since 2019, has municipalized the program and adapted it to the local context. The entire enrolled network is served by the Program in partnership with the Municipal Health Secretariat (more info).
- The *Urban Agriculture Productive Units* Program has a specific typology for institutional school units, comprising a total of 61 gardens with an estimated monthly production of 1.08 tons[63]. Program management is carried out by the Family and Urban Agriculture Promotion Management (GEFAU), linked to SUSAN (more info).

Key public authorities & food actors

- **Subsecretariat of Food and Nutritional Security (SUSAN):** It is the official entity responsible for the centralized management of the Municipal School Feeding Policy[64], shared with the Municipal Department of Education. SUSAN is responsible for planning, procurement, quality control, and distribution of food to school units[65]. SUSAN is located within the Municipal Secretariat of Social Assistance, Food Security, and Citizenship (SMASAC).

- **Municipal Department of Education (SMED):** It carries out, in partnership with SUSAN, the management of school feeding. SMED is responsible for all internal work within schools to ensure school feeding.

- **School Feeding Council (CAE):** Created in 2000[66], CAE's main function is to monitor and oversee the execution of PNAE resources in the Municipality. Evaluations cover regularity, menu, logistics, food safety, and good food production practices. In 2011[67], it began to have direct coordination with SUSAN, and in 2018, it doubled the number of representatives to 14[68], a pioneering action in Brazil.

[61] Municipality of Belo Horizonte, 2013; 2023
[62] Decree No. 6,286 of Dec 5, 2007.
[63] Escolhas Institute, 2022
[64] Joint Ordinance SMGO/SMED/SMPS/SMASAN No 13, of Oct 26, 2016. The ordinance designates the responsibilities between SUSAN and SMED.
[65] Municipality of Belo Horizonte, n.d.
[66] Municipal Decree No. 10,306, of Jun 26, 2000.
[67] Municipal Decree No. 14,264, of Jan 1, 2011.
[68] Municipal Decree No. 16,960, of Aug 17, 2018.

- **Belo Horizonte Municipal Food Policy Council (COMUSAN-BH):** Created in 1995[69] and updated in 2012, COMUSAN-BH[70] operates within the scope of policies, plans, and programs aimed at the food and nutritional security of the Municipality. It is the responsibility of COMUSAN-BH to formulate the guidelines of the *Municipal Plan of Food and Nutritional Security*[71], as well as to approve it, in addition to coordinating with civil society organizations the implementation of actions to fight hunger.

- **Municipal Intersectoral Chamber of Food and Nutritional Security (CAISAN-BH)[72]:** Responsible for drafting, coordinating, and implementing the *Municipal Food Security Policy and Plan*.

- **Federal University of Minas Gerais (UFMG):** UFMG, a renowned higher education institution, is linked to the elaboration of premises of PMBH actions related to school feeding, as well as participating in education and training processes promoted by the School Feeding Policy.

- **Technical Assistance and Rural Extension Company of the State of Minas Gerais (EMATER-MG):** A public agency of the State of Minas Gerais responsible for implementing public policies for technical assistance for all farmers, including the recognition of organic quality through participatory organisms.

Detailed presentation of the innovative action: The network of institutionalities of the Municipal School Feeding Program

One of SUSAN's key goals is supporting urban farmers from Belo Horizonte, and regionalizing its purchases by prioritizing producers from the metropolitan region and the state of Minas Gerais. Also, the Subsecretariat has actively supported the creation of the first Participatory Guarantee System (SPG) in a Brazilian metropolis[73]—a process that took more than two years and involved 300 farmers, technical staff, and consumers. However, regarding specifically the school feeding program, the more recent priority is ensuring a 30% share of purchases from family farmers.

The management and execution of school feeding in the Municipality of Belo Horizonte stand out both for their intersectoral nature and for the creation of a network of coordination among different institutions, as well as for the development of instruments that create spaces for exchange and formalize their objectives and scope of actions. A Joint Ordinance[74] details the attributions.

Regarding the procurement of food, intersectorality occurs at three levels:

1. A Bidding Management Committee composed of nutritionists, agricultural technicians, biochemists, and other health professionals meets prior to each bidding process launched by SUSAN;

2. An Intersectoral Management Committee[75] composed of different municipal secretariats, EMATER-MG, and the Brazilian Support Service for Micro and Small Enterprises (Sebrae), meet prior to each public call for procurement from family farming by SUSAN;

3. In addition to public calls, educational units purchase a portion of fresh foods locally.

[69] Municipal Law No. 6.739, of Oct 17, 1994.
[70] Municipal Law No. 10.589, of Dec 28, 2012; Municipal Decree No. 16.811, of Dec 19, 2017.
[71] The plan is in its second version (2022-2025), with the first one being effective from 2019 to 2021.
[72] Municipal Decree No. 15.970, of May 28, 2015.
[73] UFMG, 2019.
[74] Joint Ordinance SMGO/SMED/SMPS/SMASAN No. 13, of Oct 26, 2016
[75] SMASAC Ordinance No. 080, of Jul 4, 2018

Below are listed other institutional actors that make up this network:

- **Family Farming and Urban Agriculture Supply Center (CAFA):** a public facility created in 2017[76] as a hub for family and urban agriculture, focused on commercialization for institutional markets, aiming at the goal of family farming purchases from the PNAE. The center provides access to complete infrastructure to promote short marketing circuits, in addition to having a pedagogical kitchen. It is currently managed by the Dos Camponeses Sul Mineiros Cooperative, involving 90 organizations in 120 municipalities in the State.

- **Metropolitan Urban Agriculture Articulation (AMAU):** among the various civil society organizations operating in the Metropolitan Region and in the Municipality of Belo Horizonte, AMAU stands out for its engagement in social participation spaces in the elaboration of municipal food policies. AMAU's focus is on strengthening metropolitan agriculture in Belo Horizonte (more info).

- **Horizontes Agroecológicos Association:** association of farmers and other actors from the RMBH and its surrounding. Its main objective is to promote agroecology and facilitate the certification of organic products through the Participatory Guarantee System (SPG) of the Metropolitan Region of Belo Horizonte (more info).

Regarding food quality, intersectorality is manifested in the two main monitoring axes:

1. The SMSAN Supervisors team in partnership with the educational units management team;

2. The *School Feeding Monitoring* Project is carried out by the Ministry of Transparency and Controller General of the Union (CGU), through the Regional Controller of the Union in Minas Gerais and in partnership with SMED, the Municipal Secretariat of Social Assistance, Food Security, and Citizenship and the State University of Minas Gerais.

Regarding pedagogical actions, intersectorality occurs in the training of PNAE executing professionals, involving teachers from the education network, SMSAN professionals, as well as specialists on the subject from UFMG.

The public policy instrument created for this purpose is the Educator's Guide, which has as its prerogative the school as a health promotion environment and encompasses aspects related to dietary habits and sustainability issues, suggesting pedagogical activities that can be carried out in the school environment. The most recent edition correlates the National Common Curricular Base[77], the Curricular Propositions of the Belo Horizonte City Hall, and the possibilities of action in Food and Nutritional Education. Simultaneously, the Guide supports the training of Education professionals on the subject[78].

Challenges: The primary challenge related to acquiring food from family farming involves the internal organization needed to launch public calls. This process tends to be slow, creating a time gap between coordinating efforts with local producers and the public call itself. Because of this, in some cases the budget execution for one year extends into the following year - and this affects the shelf life and storage management of products, and contributes to delays in issuing public calls.

Regarding organic certified foods, despite SUSAN's active efforts to strengthen agroecological and organic certified production in RMBH, the resulting production has not yet reached the school feeding program due

[76] Municipal Decree No. 16,684, of Aug 31, 2017.
[77] National Education Guidelines and Bases Law: Federal Law No. 9,394, of Dec 20, 1996.
[78] The training is conducted by the Center for Professional Education Enhancement (CAPE) (more info).

to budgetary constraints that prevent paying the premium price for these products. Nevertheless, incorporating metropolitan agroecological and organic certified production and commercialization networks could begin, for example, through decentralized purchasing by individual school units.

In terms of managing and executing the policy across different departments, creating instruments that regulate and ensure intersectorality, such as Procurement Committees, the regulation of attributions between SUSAN and SME, and the Educator's Guide, addresses the challenge of intersectoral management.

Visit to the Municipal Supply Center of Belo Horizonte. Picture by the research team.

Meal served to students of an Early Childhood Education School (aimed for children between 0 and 5 years old) in Belo Horizonte. Picture by the research team.

Urban farmers present samples from their agroecological production, as part of the Urban Agriculture Productive Units Program. Picture by the research team.

Jundiaí: Innovation with Pedagogical Gardens

Jundiaí is located in the state of São Paulo, Southeast Brazil, 68 km (42.25 miles) from São Paulo city, the capital of the state. Jundiaí's history dates back to the bandeirante[79] expeditions of the 17th century, in a territory originally inhabited by the Tupi-Guarani indigenous people[80]. In the 19th century, during the peak of coffee production and the development of the state's railway network, Jundiaí became an important connection point on the route between the São Paulo plateau and the port of Santos. After the promulgation of the Lei Áurea in 1888 in Brazil (when slavery was abolished), like many other cities in the interior of São Paulo, Jundiaí became known for European migration, especially from Italy, initially linked to coffee production and later to grape cultivation. Due to its location partially within the Serra do Japi, a mountain range covering 350 km² in the region[81], Jundiaí has a climate conducive to fruit production. Since 2002[82], It has been part of the Tourist Pole of the Fruit Circuit along with nine other municipalities. The municipality is part of the Committee of the Hydrographic Basins of the Piracicaba, Capivari, and Jundiaí Rivers (CBH-PCJ), the first such committee created in the state of São Paulo[83]. The entire municipality has been included in the Jundiaí Environmental Preservation Area (APA-Jundiaí)[84] since 1984[85], and it is also home to the Municipal Biological Reserve of the Serra do Japi[86], managed by the Municipality's Urban Planning and Environment Management Unit. 47% of the Reserve area is designated as a heritage site by the Council for the Defense of Historical, Archaeological, and Tourist Heritage of the State of São Paulo.

Key figures/highlights

- With a population of 443,200 inhabitants[87], 95.7% of whom are concentrated in urban areas, Jundiaí is the 12th most populous city in the state of São Paulo.

[79] The bandeirante movements were initiatives during the colonial period that originated from the city of São Paulo and ventured into the interior with the aim of conquering land and capturing indigenous peoples to use them as slave labor on São Paulo's farms.
[80] Morales, 1998
[81] Serra do Japi Foundation, n.d.
[82] The Tourist Pole of the Fruit Circuit is the first regional pole with this purpose established by the Government of the State of São Paulo. Its establishment originates from the collaboration of 27 producers who formed an association aimed at tourism activities as a means of economically sustaining their properties (Souza-Esquerdo; Bergamasco, 2014) (more info).
[83] SIGRH, n.d.
[84] State Law No. 4.095, of Jun 12, 1984, State Law No. 12.290, of Mar 02, 2006.
[85] Forest Foundation, n.d.
[86] Municipal Law No. 3.672, of Jan 10, 1991.
[87] IBGE, 2023

- According to the Agricultural Census of 2017[88], there are 399 agricultural establishments in Jundiaí, with 68% of them being classified as family farms. Among these producers, 83% own their production areas (81% in the case of family farmers), which is higher than the average for the state of São Paulo, which stands at 75%.

- The main economic activities in Jundiaí related to agriculture and livestock farming are as follows[89]:
    - Production of temporary and permanent crops: 60% of agricultural establishments.
    - Horticulture: 19% of agricultural establishments.
    - Animal production: 16% of agricultural establishments.

- The main products in Jundiaí are grapes, persimmons, peaches, and tangerines, with a total amount of R$ 12.8 million in production value per year. Grape production alone accounts for 85% of this total[90].

- Only 5% of agricultural establishments in Jundiaí have some type of recognition for organic certified production. The National Organic Producers Registry counts one Social Control Organization (OCS) named "Jundiaí Orgânicos" and one producer affiliated with the participatory certification of the Natural Agriculture Association of Campinas and Region (ANC)[91].

- There are 41,351 individuals registered in the Unified Registry (Cadastro Único), with 43% of them classified as "in poverty"[92].

Network served by the National School Feeding Program (PNAE)

- 143 schools:
    - 102 municipal schools
        - Cover education levels from 0 to 14 years.
        - Ten schools are located in rural areas, covering all levels of education in the municipal network.
    - 41 state schools (school meals managed by the municipality through an agreement with the State Government)
        - Cover education levels from 6 to 17 years.
        - One school located in a rural area.
        - Two technical schools from the Paula Souza Center[93]

- Approximately 63,400 students are served, with 37,000 students from the municipal network and 26,400 students from the state network.

- The average is 80,000 meals per day, which can reach up to 120,000 meals:
    - 4 meals per day at full-time schools (5 at daycare centers).
    - 2 meals per day at part-time schools (3 at daycare centers).

[88] IBGE, 2019
[89] IBGE, 2019
[90] IBGE, 2019
[91] MAPA, 2024
[92] Ministry of Social Development, Social Assistance, Family and Fight against Hunger, 2024
[93] The Paula Souza Center is an agency of the State Government that maintains a network of 220 Technical Schools (providing high school education) and 66 Technology Colleges (offering higher education) throughout the state. The institution is affiliated with the State Secretariat of Science, Technology, and Innovation and is not part of the network administered by the State Secretariat of Education.

- Budget allocated to school feeding in the Municipality of Jundiaí[94]. Reference values for 2023, in Brazilian reais and US dollars[95]:
    - Funds from FNDE: 9,809,709 BRL (1,684,070 USD)
        - In 2022, the PMJ executed 42.7% of the funds transferred by the FNDE for purchases from family farming[96].
    - Municipality budget: approx. 45,000,000 BRL (7,725,321 USD)

PNAE Implementation Structure

- The state and municipal network are entirely managed by the municipal administration of Jundiaí.
- 334 public servants (civil servants) in the municipal network engaged in cooking; 120 outsourced professionals in the state network.
- On average, three professionals per school, with the distribution of the team proportional to the number of students served.
- Three nutritionists in the Department of Food and Nutrition (DAN) are responsible for menu planning, procurement management, and kitchen staff training.
- Eight nutrition technicians who coordinate the relationship between the educational units and the Department of Food and Nutrition (DAN).
- Logistics and quality control system:
    - Non-perishable food storage and distribution are managed by a central warehouse, operated by a third-party company, that distributes the products to educational units monthly.
    - Fresh food delivery is carried out by the producers themselves directly to the schools (which may go through the central warehouse first for quality control).
- Purchasing policy:
    - It follows the national guidelines for healthy eating from the National School Feeding Program (PNAE).
    - The Human Resources Administration and Management Unit has a department that carries out purchases informed by the team of nutritionists.
    - Criteria for choosing foods include nutritional quality, cost, a minimum of 95% acceptability of the foods by students, ease of preparation and storage at educational units.
    - In addition to purchases, one of the state technical schools in the municipality maintains the Vale Verde[97] garden, which provides fresh food for the entire public education network in the municipality.

[94] FNDE, 2023, Municipality of Jundiaí
[95] Exchange rate on May 5, 2024.
[96] FNDE, 2022
[97] The Vale Verde garden is based at the Benedito Storani Technical School (Etec), under the management of the Jundiaí Municipal Government through a non-onerous contract - a loan agreement.

- Pedagogical actions:
    - Ongoing training for the implementation team of the National School Feeding Program (PNAE).
    - Incorporation of school gardens into the pedagogical project of educational units (Projeto Inova na Horta, 2018) (more info).
    - Childhood Obesity Confrontation Program (2017).
    - Life and Health Project (2021), which provides nutritional and psychological guidance as well as physical education for cooks in the municipal network.

Key public authorities & food actors

- **Department of Food and Nutrition (DAN):** linked to the Education Management Unit of the Municipal Government of Jundiaí, is the official entity responsible for school meals in the municipality. It is responsible for the development and implementation of policies regarding school nutrition.

- **School Feeding Council (CAE):** since its first formation in 1995[98], advocates for the procurement of locally produced fresh foods and the creation of gardens, farms, and small animals hatcheries in educational facilities for school meals. In 2010, the main guidelines of the CAE were regulated in the School Feeding Policy (PMAE)[99], which made the Council a participant in the management of school feeding, clarified the technical responsibility of the nutritionist team, and included the minimum requirement of 30% of resources allocated to procurement from family farming. In 2022, the legislation governing the PMAE explicitly indicated the prioritization of purchasing organic foods[100], although without establishing objective mechanisms for this prioritization.

- **Jundiaí Municipal Food Policy Council (COMSEA-JD):** Established in 2003, it has been integrated into the Municipal Policy for Food and Nutritional Security since 2018[101]. Its role is to advise the municipal government in ensuring the right to adequate food. It is responsible for organizing Municipal Conferences on Food and Nutritional Security, from which the Municipal Plan for Food and Nutritional Security (PMSAN) is derived.

- **Municipal Intersectoral Chamber for Food and Nutritional Security (CAISAN):** responsible for drafting the Municipal Policy for Food and Nutritional Security [102].

- **Kairós Institute:** a civil society organization that has been managing the Inova na Horta Project since 2018, in partnership with the Education Management Unit of the Municipality of Jundiaí. The project aims to complement school meals while providing training for teachers and cooks.

Detailed presentation of the innovative action: Inova na Horta Project

Inova na Horta Project is the result of a culmination of policies related to school feeding in the municipality, particularly the guidelines from the School Feeding Council (CAE) for the implementation of school gardens

[98] Municipal Law No. 4,516, of Jan 12, 1995.
[99] Municipal Law No. 7,426, of Mar 24, 2010.
[100] Municipal Law No. 9,735, of Mar 24, 2022.
[101] Municipal Law No. 8,920, of Mar 15, 2018.
[102] The Municipal Plan for Food and Nutritional Security (PMSAN) has not yet been developed, as the CAISAN is still in the process of being established. The first meeting of the CAISAN took place in November 2023 (City Hall of Jundiaí, 2023).

as tools to enhance the municipality's agricultural vocation and local food culture. The main innovative component is the promotion of an urban garden capable of providing food for school meals followed by the incorporation of non-conventional edible plants (PANCs) into the gardens: species suitable for consumption but less known to the population. Promoting these plants involves the revival and valorization of diverse diets, regionalizing food production adapted to local climatic and sociocultural characteristics, maximizing the use of agricultural production areas, and promoting biodiversity. Also, it helps to foster urban agriculture by using urban (public) land that otherwise would be underutilized.

The Inova na Horta Project has been carried out since 2019 in partnership with Kairós Institute, and aligns the supplementation of school meals with an important pedagogical component. It is based in the Quality Axis of Teaching of the Innovative School Program[103]. The Project operates on three main fronts: i. the cultivation of unconventional edible plants (PANC) in the Vale Verde garden; ii. the training of kitchen staff to use PANC in meal ingredients; and iii. the training of teachers for the utilization of school gardens. The school garden complements the education of the student community through hands-on experience with planting and knowledge of recipes involving unconventional vegetables. The main areas of action include:

1. Cultivation of PANC species in the Vale Verde garden:
    - 4.5 hectares of organic production, with 1.5 hectares dedicated to the cultivation of over 35 non-conventional edible species.
    - Weekly delivery of three varieties of PANC to all municipal educational units.
    - The complex includes a 100m² nursery to supply seedlings, aimed at encouraging the incorporation of these species into existing school gardens and the implementation of new gardens in schools that do not yet have them.
    - Team: One agronomist (from the Municipality), two farmers (contracted by a third-party company), one nurseryman, and one field technician (provided by Kairós Institute).

2. Ongoing training for kitchen staff in the use of PANC in meals:
    - In-person training sessions, on average every one and a half years per team, covering all schools cyclically.
    - The content aims to break prejudices regarding the use of PANC, promote awareness of agroecological foods, and provide guidance on their safe use[104]. Recipes are left to the discretion of each kitchen.

3. Ongoing training for teachers to utilize school gardens:
    - All teachers must undergo an eight-lesson remote course on the use of pedagogical gardens in teaching. There is also on-demand in-person support at the educational units. The Kairós Institute provides online support materials for the use of PANC in schools (more info).
    - The coordination between Vale Verde and the schools is facilitated by two technical coordinators from the Kairós Institute and two teachers from the municipal network.

Results: With the production carried out in Vale Verde, the municipality of Jundiaí is self-sufficient in supplying lettuce and arugula to all educational units and fully incorporates PANC into the diets of all daycare centers in terms of vegetables and seasonings.

[103] The Innovative School Program was integrated into the Multiannual Plan (PPA) 2018/2021 (Municipal Law No. 9,059, of Oct 11, 2018) and focuses on three areas of action: school environment, teaching quality, and educator training. The Program remains in force for the quadrennium 2022/2025.
[104] Part of the course material can be accessed on the project's channel.

In 2020 and 2021, 1.86 tons of vegetables were produced each year; in 2022, 3.40 tons, and in 2023, 1.89 tons, totaling 8.99 tons over the course of the project (or 1,700 crates of fresh food). During the Covid-19 pandemic, PANC was included in school meal kits provided by the Municipality of Jundiaí (serving 2,800 families) and donated to hospitals.

Since 2023, the project has benefited 105 schools, each with at least one organic garden, and in all units, school gardens are part of the pedagogical project.

As a non-conventional food type, Inova na Horta also developed a germplasm bank[105] of 35 PANC adapted to the climatic conditions of Jundiaí and the existing school feeding structure. The selection of species took into account eight criteria related to production, logistics, kitchen facilities, acceptability, among others.

Inova na Horta also began to include new actors in the development and implementation of municipal public actions for school feeding, in order to remain in line with its trajectory over the last 30 years.

Costs: The average annual cost of Inova na Horta is R$ 235,000 and includes the technical team and labor costs. Expenses associated with inputs and delivery logistics related to Vale Verde are not included.

Challenges: The main challenges are 1) Production, maintenance, and multiplication of germplasm due to the limited availability of these plants and lack of scientific information regarding production protocols; 2) Availability of qualified labor for production; 3) Sensitizing teachers to the diverse uses of gardens for pedagogical purposes.

Production of unconventional edible plants (PANCs) in Vale Verde garden. Source: City Hall of Jundiaí.

[105] For its production, farmers, urban gardens in the municipality of São Paulo, and collectors of these plants were engaged.

School garden promoted by Inova na Horta. Source: City Hall of Jundiaí.

Group of students in a school garden in an elementary school of Jundiaí. Source: City Hall of Jundiaí.

Santarém: inclusion of Socio-biodiversity Products in School Meals

Santarém is located in the state of Pará, in the North of Brazil, 700km (434.96 miles) from Belém, the state capital. The municipality is situated in the Amazon biome[106], and the state is one of the components of the Legal Amazon[107]. It is the main city in western Pará and the seat of the Metropolitan Region of Santarém, composed of two more municipalities (Mojuí dos Campos and Belterra), being the second-largest urban agglomeration in the state. Access to the municipality is via road, air, or waterway, with the latter being the most important, both for passengers and goods. This is because major rivers cross the territory, such as the Tapajós, Amazonas, Arapiuns, Moju, Mojuí, and Curuá-Una[108].

The municipality is known for the meeting of the waters of the Amazon River with the Tapajós, and during the less rainy season, it stands out for the beaches that form, especially in the village of Alter do Chão[109]. It is located in a region of humid tropical climate, with average annual temperatures above 26°C and annual precipitation ranging from 1,900 to 2,200mm. These climatic characteristics allow agricultural activity to be carried out throughout the year. The region has emerged as a hub for organic food production, despite the expansion of grain crops such as soybeans and corn[110]. In 2021 agriculture represented 8% of the GDP, while the service sector, the main one, accounted for 81.8%[111].

Conservation Units (UC) managed by the municipality include Alter do Chão, Serra do Saubal, and Lago do Juá Environmental Protection Areas (APAs)[112]. Another prominent UC is the Tapajós National Forest (Flona), created in 1974, which covers five municipalities: Santarém, Aveiro, Belterra, Placas, and Rurópolis[113].

[106] EMBRAPA, n.d.; IBGE, 2022
[107] The Legal Amazon is an official delimitation established in 1953 for the socio-economic planning of the region. It represents 58.9% of the country's territory and comprises the states of Acre, Amazonas, Amapá, Mato Grosso, Pará, Rondônia, Roraima, Tocantins, and part of Maranhão (Agência Brasil, 2021).
[108] Santarém City Hall, n.d.
[109] Ministry of Tourism, 2016
[110] Sousa, 2020, p. 30-31
[111] FAPESPA, 2023, p. 58
[112] Santarém City Hall, 2023
[113] Conservation Units in Brazil, n.d.

Key figures/highlights

- 331,942 inhabitants[114], with 73.2% concentrated in urban areas[115]. It is the third most populous city in the state.
- 7,379 agricultural establishments (EA), according to the 2017 Agricultural Census[116]. Of these establishments, 84.8% are from family farming. In the state of Pará, family farming represents 85.1% of agricultural establishments. 82.3% of the EAs are smallholdings (up to 50 hectares) and concentrate 23.7% of the total area of establishments.
- Main products of temporary crops in 2022: pineapple, rice, sugarcane, beans, cassava, watermelon, corn, soybeans, and tomatoes, totaling R$ 471.8 million. Corn and soybeans accounted for R$ 430 million, and cassava for R$ 30 million[117]. The data reflects the expansion of grain cultivation, as corn and soybeans represented 91% of the total production value.
- Main products of permanent crops in 2022: açaí (fruit), banana, cocoa, coconut, orange, lemon, papaya, passion fruit, black pepper, tangerine, and annatto (seed), totaling a value of R$ 14.3 million[118].
- Main livestock in 2022: poultry (with 1,320,771), followed by cattle (with 125,237), pigs (13,660), and buffalo (11,228).
- Only 0.4% of agricultural establishments have any type of organic production recognition[119]. The National Organic Producers Registry records only 1 producer per certifying body (by Ecocert Brasil), and for participatory certification, 27 by OCS (there are 7 OCS: Curuá-Una, Mojuí dos Campos, Santa Cruz, Lavras Povoado, Frutos da Terra, Eixo Forte, and Paraíso) and 4 by Opac (Tapajós Organic Association for Participatory Certification)[120].
- There are 247,396 people enrolled in the Single Registry (Cadastro Único), with 59% classified as "in poverty"[121].

Network served by the National School Feeding Program (PNAE)

- Approximately 460 municipal units[122]:
    - Approximately 420 municipal units, covering Early childhood education, Pre-school, Elementary school, Youth and Adult Education, and special education units:
        - About 310 units are in rural areas, covering all levels of municipal education.
        - Around 50 units are indigenous.
        - About 10 units are quilombola.
    - 41 state units:

[114] IBGE, 2022
[115] IBGE, 2010
[116] IBGE, 2019
[117] FAPESPA, 2023, p. 62
[118] FAPESPA, 2023, p. 64
[119] IBGE, 2019
[120] MAPA, 2024
[121] Ministry of Social Development, Social Assistance, Family and Fight against Hunger, 2024
[122] FNDE, 2024

        - Elementary, high school, and Youth and Adult Education.
        - 33 are located in urban areas.

- Approximately 86,222 students served by the program in the municipality of Santarém:
    - 4,007 aged from 0 to 3 years
    - 9,342 aged from 4 to 6 years
    - 49,136 aged from 7 to 14 years
    - 16,676 aged from 15 to 17 years
    - 2,763 in Youth and Adult Education
    - 1,568 in Specialized Educational Services
    - In indigenous school units, there are 2,632 students aged from 0 to 14 years.
    - In quilombola school units, there are 627 students aged from 4 to 14 years.

- The school units are divided between river regions, plateau (land access) - considered rural, and urban areas.

- An average of 99,000 meals are offered daily:
    - 3 daily meals for children from 0 to 5 years old (12,000 daily meals)
    - 3 daily meals for full-time education (5,000 daily meals)
    - 1 daily meal for part-time education (82,000 daily meals)

- Budget Allocated to School Feeding in the Municipality of Santarém (Reference values for 2021)[123]: 12,181,371.92 BRL (2,091,222.65 USD)[124]
    - Funds from FNDE: 10,068,089.30 BRL (1,728,427.35 USD)
    - Funds from municipal resources: 1,057,192.43 BRL (101,492.19 USD)
    - Funds from state government resources: 1,056,090.19 BRL (181,303.00 USD)

- In 2021, Santarém executed 36.72% of the funds for procurement from family farming[125].

Implementation structure of the National School Feeding Program (PNAE)

- Municipal and state network fully managed by the municipal administration of Santarém.

- 2 nutritionists responsible for menu planning and quality control

- Approximately 780 professionals in the municipality's preparation team

- There are 7 advisors teams, totaling 80 professionals that mediate between the Municipal Department of Education (Semed) and school units, covering pedagogical aspects, staff support, and data collection. Advisors are divided by regions and types of school units.

- Logistics system:
    - There is a municipal warehouse with a cold room that serves as a logistics center for the producers and cooperatives. It is responsible for receiving, storing, quality monitoring, and managing the logistics of distributing non-perishable foods.

[123] Dantas; Matos, 2022
[124] Exchange rate on May 5, 2024.
[125] Dantas; Matos, 2022

    - As the municipal logistics center's capacity became insufficient due to the large volume of deliveries, since 2022 the delivery of fresh foods is done by the producers and cooperatives directly to the schools.
    - Some cooperatives report that delivering directly to schools without having their own boats, rafts, or trucks increases the logistical cost of production. In fact, due to the geographic characteristics of the municipality, logistics is very costly and has been proving to be a crucial challenge in the flow of family farming production.

- Purchasing and quality policy:
    - Follows PNAE guidelines, but there are adaptations to the local context: Portioning is flexible according to the students' river travel time.
    - Criteria for choosing foods: seasonality, availability in the Santarém region, and socio-biodiversity products.
    - Two purchases from family farming per year are performed, according to the variability of the climate (Amazonian summer and winter).
    - Pilot project for adapting public calls to include family farmers with informal production, result of the experience of the Permanent Dialogue Table Catrapovos Brasil (more info).
    - A commission of Municipal Department of Education (Semed)/Technical Center for School Feeding (NAE), School Feeding Council (CAE), Sanitary Surveillance, and Municipal Department of Agriculture and Fisheries (Semap) staff analyzes the food and issues reports on sensory, chemical, and water potability, which are sent to the Bidding and Contracts Nucleus.

- Pedagogical actions:
    - Itinerant Semed: The Municipal Department of Education conducts biweekly to monthly visits to raise awareness among the school community about the municipality's school feeding policy. The visits also include testing new foods with students and mapping local production.

Key public authorities & food actors

- **Technical Center for School Feeding (NAE):** a nucleus linked to the Municipal Department of Education (Semed), is the official entity responsible for managing school feeding.

- **School Feeding Council (CAE):** established in 1996[126], has the main function of monitoring and overseeing the execution of PNAE funds in the Municipality.

- **Municipal Department of Agriculture and Fisheries (Semap):** among its responsibilities, includes coordinating policies related to agriculture, rural development, supply, technical assistance and rural extension.

- **Municipal Department of Labor and Social Assistance (Semtras):** focuses on the municipal policy of protection and social assistance. It includes a Division of Food and Nutritional Security, which collaborates with NAE in actions such as the Itinerant Semed.

[126] Ordinary Law No. 1,5814, of 1996

- **Technical Assistance and Rural Extension Company (Emater-Pará):** with a local office in Santarém, provides services to family farming, ranging from technical assistance to legal advice for accessing public policies.
- **Health and Joy Project (Projeto Saúde e Alegria):** a civil society organization active in the Amazon since 1987, serves around 30,000 residents of rural communities, including those in the municipality of Santarém (more info). In Santarém, it provides technical assistance to producer families in partnership with Semed.
- **Permanent Dialogue Table Catrapovos Brasil:** established by the Chamber of Indigenous Peoples and Traditional Communities of the Federal Public Ministry in 2021 to promote traditional food in indigenous schools, quilombola communities, and riverside, extractivist, and caiçara communities, among others, throughout the country. Among its actions, technical notes were issued legitimizing family self-consumption as a set of techniques for quality control and conservation assimilable by the family farming purchasing policy within the scope of the PNAE (more info).
- **Laboratory on Urban Food Policies (LUPPA)**: coordinated by Instituto Comida do Amanhã in partnership with ICLEI South America, LUPPA works with more than 40 Brazilian cities to foster participatory governance, coherent local food strategies with a food systems approach, and acts as a permanent forum for experience sharing among cities. Santarém has been part of the program since 2021, participating actively in its activities and engaging several departments on the work to draft a municipal food strategy.
- **Mapped local cooperatives providing products for public school meals[127]:**
    - Cooperativa de Agricultores Familiares da Comunidade de Boa Esperança (COOPBOA): 148 farming families;
    - Cooperativa de Produtores Rurais da Várzea (Coopruvas): 45 farming families from riverside communities;
    - Cooperativa dos Produtores da Agricultura Familiar de Santarém (COOPAFS): 122 farming families;
    - Cooperativa Mista de Agricultores do Planalto Santareno (COMAPLAS);
    - Campo Alimentos: 200 farming families.

Detailed presentation of the innovative action: Inclusion of Amazon socio-biodiversity products in school feeding

The municipality of Santarém stands out for its strategy of acquiring food from local family farming, which is diverse in its social base, encompassing indigenous peoples and villages, riverside communities, and quilombola communities, and in its productive base, through the valorization of regionally adapted products. Unlike other municipalities, a significant portion of the school network is located in remote areas, difficult to access, where the responsibility for ensuring food provision lies with the public administration. There are cases where students are transported by river to central educational units, but there are also cases where the municipality establishes multi-grade school units, bringing the educational structure to communities and villages. The inclusion of socio-biodiversity foods operates in two ways: by facilitating access to locally

[127] Together, these cooperatives produce cassava, watermelon, cupuaçu, pineapple, açaí berries, bananas, corn, peppers, vegetables, honey, and engage in artisanal fishing and raising free-range chickens. They also process fruit pulps such as cupuaçu, açaí, guava, and acerola, along with cassava derivatives.

available foods for school communities and by ensuring the prerogatives of healthy eating from the national policy.

The strategy entails continuous and coordinated actions within Semed and together with the local social and productive base, activating a vast network of actors and institutions. Mapping and adaptation are two of them.

- Production mapping is carried out in partnership with Semap and civil society organizations through visits and reports sent to Semed. The partnership with Semap also assures the maintenance of sanitary hygiene standards and the quality of the supplied food, including processed foods. There are always one or two technicians accompanying deliveries to the schools. They also assist in mapping agricultural production, visiting production sites to verify if the supplier's reported production capacity will indeed meet the schools' needs.

- The **Itinerant Semed**, since 2019, has been part of the production mapping effort, coupled with nutritional education for the school community.
    - Visits take place at a central school unit that gathers other nearby units. In addition to NAE technicians and CAE counselors, representatives from the Health and Labor and Social Assistance Departments, as well as students from local universities participate.
    - Through the production diagnosis, Semed prepares the menus for the public call.
    - With families: discussion circles are held on the operation of the PNAE, bureaucratic aspects, and workshops on product pricing.
    - With students: workshops are conducted to raise awareness about regional products and acceptability tests.
    - The average number of participating students is 500 to 600 per visit.

- As a result of the experience of the Permanent Dialogue Table Catrapovos Brasil, the municipality of Santarém launched a pilot project of four public calls adapted to the local context, where there is limited access to electricity and treated water systems.
    - The calls aim to serve, especially, regions of the municipality composed of extractive areas, settlements, indigenous villages, and quilombola communities.
    - The advent of self-consumption allows the PNAE to offer foods produced by the communities themselves, streamlining the purchasing system.

Some results:

- The municipality has maintained a constant frequency of 30% in purchases of products from family farming since the data was disclosed.

- Between 2015 and 2020, out of 41 recurring products in public calls, 15 are from sociobiodiversity, representing 36.6%[128].

- In 2024, purchases from family farming encompass cooperatives of producers and fishermen, associations of organic producers, agroextractivist cooperatives, mixed agricultural cooperatives, and individuals (more info).

- The municipality's experience was presented in the Brazil-FAO International Cooperation Program, by the Brazilian Cooperation Agency (ABC/MRE) and FNDE/MEC (more info).

[128] Mota, Silva, Pauletto, 2021, p. 92

Some opportunities[129]:

In addition to actions specifically aimed at school feeding, public management has identified several other opportunities and actions to enhance the city's food system: expanding composting in Parque da Cidade to collect organic waste from markets, fairs, and the city's main university—which usually ends up in the landfill—and donating it to local producers and school gardens; supporting the creation of small agro-industries linked to cooperatives to expand the supply of food products from local biodiversity (such as pulps and dehydrated products); and investing in the food transport and logistics system to reduce costs, losses, and waste, including refrigerated fleets and subsidies for local family producers.

Some challenges:

The challenges are of a structural nature. Firstly, due to the geographic characteristics of the municipality, which imply continuous efforts in mapping the regional productive base and the use of river transportation for production. Secondly, the specificity of the type of production, where bureaucratic regulations are poorly adapted to the social context. Regarding this latter aspect, the experience of Catrapovos constitutes an important forum for articulation towards new approaches that correspond to the local living and production conditions.

Although vegetables and legumes grown locally are present in school meals, there is still a lack of fish and free-range chickens produced in the communities themselves. The city hall does not purchase fish for school meals in Santarém due to the lack of municipal inspection for fish. The Integrated Artisanal Fishing Center (Cipar), a project that is being implemented by the city hall, plans to make it possible to purchase fish for school meals. The city hall will also launch a notice so that fishermen's cooperatives can occupy the space. The animal protein consumed in the 33 riverside schools is generally canned. The difficulty is in the storage of food: the schools in the riverside communities do not have freezers to preserve fish and meat due to the lack of energy (generated with fuel). For the Santarém education department, eliminating canned food from school meals at all 33 schools is still challenging.

The municipality of Santarém recognises the need to work on some key issues such as: (i) institutionalization of regulatory frameworks and creation of structuring public policies; (ii) listening and greater participation of society in its processes, connecting its food system to the habits and needs of the population; (iii) education and campaigns to promote and raise awareness for a change in culture and healthy eating habits; (iv) constant strengthening of family farming, with partnership actions between producers and government agencies, through training, technical assistance, access to mechanization and qualification/adding value to their production, encouraging associations and cooperatives with more commercialisation spaces and facilitating access to rural credit; and (v) improvement in food logistics and transportation.

[129] These opportunities were identified within the scope of the Laboratory on Urban Food Policies (LUPPA), conducted by Comida do Amanhã in partnership with ICLEI South America (more info).

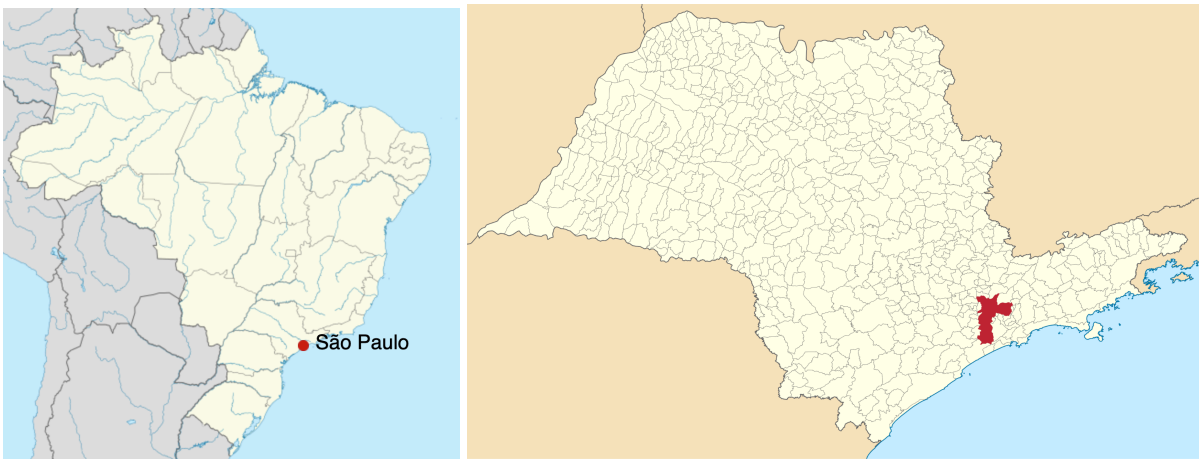
Itinerant Semed, in 2024. Source: City Hall of Santarém.

Reception of family farming production for school meals in Santarém. Source: City Hall of Santarém.

Students trying new school menus in Santarém. Source: City Hall of Santarém.

Samples of family farming production from the local sociobiodiversity. Source: City Hall of Santarém.

São Paulo: School Feeding in Brazil's Largest City



São Paulo is the capital of São Paulo State, in the Southeast of Brazil. The municipality is considered the hub of the São Paulo Metropolitan Region (RMSP), that encompasses 39 municipalities in an area of 7,945 km^2, of which 45% are forest formations and 26% are agricultural production areas[130]. The city is located on the Paulistano Plateau, characterized by a terrain with altitudes above 700 meters, with a dry winter and a rainy summer[131], and original Atlantic Forest vegetation, now reduced to a few remaining areas. The urbanization of the land where the municipality is situated took place on the plains of several rivers, once crucial for the city's water supply, including the Tietê, Pinheiros, Aricanduva, and Tamanduateí[132]. However, these rivers eventually became sites for waste disposal (sewage, rainwater and even industrial effluents) and were channelized to accommodate the city's urbanization process. The municipality has many Environmental Conservation Units, among them the Capivari-Monos and Bororé-Colônia Environmental Protection Areas (APAs), both located in the south zone and under municipal management and; the Carmo Park and Farm APA, in the east zone, under state management[133]. Since 2014, the Strategic Master Plan (PDE) has redefined the municipal rural zone, in order to promote strategic actions and policies for the environmental and economic specificities of this zone, which represents 30% of the municipality[134]. In 2021, the city accounted for 9.2% of the national GDP, with much of it generated by the service sector[135]. Despite the prominence of this sector, agriculture has been receiving increasing attention and is seen as an activity with the potential to contribute to environmental, health, food and nutritional security, income generation, and circular economy issues. To this end, the city government established, in 2022, an Agriculture Coordination Office (CA) which develops actions focused on agriculture, ranging from technical assistance to the mapping of suitable areas for agricultural activity through a platform called Sampa+Rural (more info)[136].

[130] City of São Paulo, n.d.
[131] IAG, n.d.
[132] São Paulo City Hall, 2004
[133] City of São Paulo, 2024a
[134] City of São Paulo, n.d.b
[135] Agência Brasil, 2023
[136] City of São Paulo, 2024b

Key figures/highlights

- 12.3 million inhabitants[137], with 98.3% concentrated in urban areas[138]. It is the most populous city in the country.

- 550 agricultural establishments (EA) according to the 2017 Agricultural Census, which employed 1,945 people. The area dedicated to permanent crops was 343 hectares, and temporary crops covered 689 hectares. In 2017, the estimated values of these productions are R$ 1.5 million and R$ 371 thousand, respectively[139].

- The highlights of agricultural productions within the municipality, according to the 2017 Agricultural Census, were: bananas (293 tons), cassava (110 tons), maize (71 tons), and pumpkins (35 tons)[140].

- Only 10% of agricultural establishments have any type of organic production recognition[141]. The National Organic Producers Registry records 69 farmers, with 54 certified by certifying bodies (Ecocert Brasil, IBD Certificações, Agricontrol, Genesis Certificações), and the other 15 by participatory certification: 4 by OCS and 11 by Opac (Brazilian Biodynamic Agriculture Association and the Natural Agriculture Association of Campinas)[142].

- In the municipality there are three main association/cooperatives, namely the Eastern Zone Farmers Association (AAZL), the Agroecological Cooperative of Rural Producers and Clean Water from the South Region of São Paulo (Cooperapas), and the Agroverde Cooperative[143].

- The municipality carried out the "Connect the Dots" Project (2017-2020), which focused on the coordination of various policies aimed at agriculture, food and nutritional security, and the environment (more info). Among the actions, the Project conducted a survey of existing agriculture in the southernmost part of the municipality, which houses the largest rural portion delimited by the Strategic Master Plan. After the end of the external funding of this Project, it was further developed and transformed into a public policy, through the platform Sampa+Rural.

  It is important to mention that one of the project's fronts was data collection on the characteristics of agricultural activity, and it systematized some important data about this region, such as[144]:
  - 428 Agricultural Production Units (UPA)[145];
  - 65% of respondents are landowners, 10% are tenants, 7% have more than one UPA under the care of third parties, 6% are squatters, and 4% are lessees or borrowers;
  - Most properties are considered small, up to 20 hectares (80%). Within this area range, 41.4% are less than 0.5 hectares, 9.3% are 0.5 to 1 hectare, and 17.8% are around 1 to 5 hectares;
  - Among the crops planted, fruits (by 79% of respondents), leafy vegetables (64%), legumes and/or grains (59%), roots (58%), medicinal herbs (52%), and ornamental plants (45%) stand out;

[137] IBGE, 2022
[138] IBGE Census, 2010
[139] IBGE, 2019
[140] IBGE, 2019
[141] IBGE, 2019
[142] MAPA, 2024
[143] Biazoti et al., 2021, p. 201
[144] CITY OF SÃO PAULO, 2020
[145] The UPA (Agricultural Production Unit) is a unit used in the methodology of the Connect the Dots project. In this project, the UPA is an agricultural unit that does not have a minimum size requirement to be considered as such and does not necessarily need to be located in a delimited rural zone of the municipality. A farmer can own or work in more than one UPA. A piece of land divided among different producers will be counted as UPAs according to the amount of land divided among them, not being considered solely as one UPA.

    - Commercialization is limited, which is reflected in a small number of farmers engaging in it. Leafy vegetables had the highest rates (26% stated they commercialize), followed by legumes and/or grains and roots (23%), ornamental plants (19%), fruits (16%), and medicinal herbs (8%).

- There are 3,833,713 people enrolled in the Single Registry (Cadastro Único), with 43% classified as "in poverty"[146].

Network served by the National School Feeding Program (PNAE)

- Around 4,150 educational units[147]:
    - 1,947 municipal units
        - They cover educational levels from 0 to 17 years old, in addition to Youth and Adult Education
        - They include Technical Education, Indigenous Education, and units for special needs
    - 2,205 partner units for children from 0 to 3 years old

- Approximately 1,014,158 students served by the program in the municipality of São Paulo, from both public and partner networks[148]:
    - 328,368 from 0 to 3 years old
    - 225,571 from 4 to 6 years old
    - 422,097 from 7 to 14 years old
    - 5,153 from 15 to 17 years old
    - 26,779 Youth and Adults
    - 5,878 in Specialized Educational Assistance
    - In the three indigenous school units, there are 313 students between 0 and 6 years old.

- An average of 2.3 million meals are served daily.
    - 3 to 5 meals daily in full-time units.
    - 2 meals daily in part-time units.

- The Municipality of São Paulo uses per capita values[149] ranging from R$ 0.41 to R$ 2.56 for the school feeding budget.

- Budget allocated to school feeding in the Municipality of São Paulo[150] (Reference values for 2022, in Brazilian reais and US dollars[151].):
    - Funds from FNDE: 91,011,922 BRL (15,624,364 USD)
        - In 2022, the municipality executed 98.7% of the funds transferred by the FNDE for procurement from family farming[152].

[146] Ministry of Social Development, Social Assistance, Family and Fight against Hunger, 2024
[147] Data from the Transparency Portal of the City Hall of São Paulo, reference year 2023.
[148] Data from the National Fund for the Development of Education (FNDE, 2024) (more info).
[149] Data from the Municipal Government of São Paulo (CITY HALL OF SÃO PAULO, 2023).
[150] FNDE, 2022
[151] Exchange rate on May 5, 2024.
[152] FNDE, 2022

Implementation structure of the National School Feeding Program (PNAE)

- Municipal and partner networks are partially managed by the São Paulo Municipal Administration based on the Municipal School Feeding Program (PAE) (more info), managed by the School Feeding Coordination Office (CODAE).
    - São Paulo's educational policy is coordinated through 13 Regional Education Directorates (DREs) (more info), which structure the school feeding policy.
    - 58.78% of educational units are fully managed by the city administration, under a "direct" system:
        - Food purchase, structure, and preparation team are the responsibility of CODAE.
    - 9.66% of educational units are partially managed by the city administration, under a "mixed" system:
        - Food purchase and logistics are the responsibility of CODAE.
        - Structure and preparation team are the responsibility of a third-party company.
    - 31.56% are managed by outsourcing companies:
        - Food purchase, structure, and preparation team are the responsibility of the contracted company.
    - There are 94 nutritionists in the School Nutrition Division (Dinutre) in the following nuclei: Service, Management of Outsourced Feeding, Research and Development, Menu Planning, Programming, and Supervision of School Feeding.
        - Responsible for planning and developing the PAE; promoting actions related to food and nutritional education, family farming, and acquisition of agroecological foods.
- Logistics System:
    - Three warehouses rented by the municipality handle the storage and distribution of non-perishable and perishable foods purchased by the City Hall.
    - In the "direct" and "mixed" systems, fresh food purchased by the City Hall is delivered by producers directly to the schools.
    - In the "outsourced" system, logistics are the sole responsibility of the contracted company.
- Procurement and Quality Policy:
    - Follows the national guidelines for healthy eating from the National School Feeding Program (PNAE).
    - Criteria for food selection prioritize offering fresh and minimally processed foods, taste, preparation, and acceptability.
    - Nutritionists, agronomists, veterinarians, and public policy agents make up the Food Quality and Logistics Division (Dilog), which comprises the Food Quality, Food Logistics, and Supply Management nuclei.
        - Responsible for food quality and monitoring of stocks and supply logistics.
    - The School Feeding Management and Contracts Division (Dicae) is responsible for public procurement and the Leve Leite Program, which provides milk for children from families enrolled in the Cadastro Único (more info).
- Pedagogical Actions:

- The Food and Nutritional Education Division (Diedan) is responsible for training professionals for food and nutritional education in schools.
    - Planned actions include the implementation of school gardens; meeting the demands of school feeding in the municipal network; and monitoring the School Feeding Council (CAE).
    - The Sustainable Menu Project provides online training for food preparation teams through a registration form.

Key public authorities & food actors

- **School Feeding Coordination Office (CODAE)[153]:** linked to the Municipal Department of Education of São Paulo (more info), is responsible for the technical, administrative, and financial management of the Municipal School Feeding Program (PAE) (more info).
- **Food and Nutritional Security Coordination Office (COSAN)**: within the Department of Supply, linked to the Secretariat of Human Rights, is focused on developing actions for food and nutritional security and controlling the nutritional and sanitary quality of food. It coordinates and advises the Municipal System of Sustainable Food and Nutritional Security[154]. Associated with this coordination office there are:
    - **Municipal Food Policy Council (COMUSAN):** Within this council established in 2001, governmental bodies, civil society organizations, and various institutions engage in dialogue, monitoring, and oversight of actions pertaining to food and nutritional security. CAISAN and COMUSAN jointly developed the *1st Municipal Plan for Food and Nutritional Security (2016-2020)* (more info) as a guideline for the execution of public policies, including the National School Feeding Program (PNAE).
    - **Intersecretarial Chamber of Food and Nutritional Security (CAISAN)**: coordinates and executes policies and actions for food and nutritional security. It aims to allocate resources, monitor, evaluate, and disseminate reports and information to COMUSAN.
- **School Feeding Council (CAE):** established in 1995[155], it is responsible for overseeing and monitoring the resources from the National Fund for the Development of Education (FNDE) and the quality of meals offered by PNAE. In 2011[156], CAE expanded its number of representatives to 21 to ensure comprehensive coverage of the entire school network within the municipality.
- **Food and Nutritional Security Policy:** Recently launched[157], it aims to develop actions and programs for the acquisition of food that promote quality of life and health of people in social vulnerability.
- **Agriculture Coordination Office (CA)[158]:** implements actions for urban and peri-urban agriculture and sustainable rural development. It operates three Houses of Ecological Agriculture (CAEs), providing technical assistance and rural extension services to agricultural production units in the municipality.

[153] Municipal Decree No. 59,660, of Aug 4, 2020, regulates the organization and functioning of the Municipal Department of Education, along with its coordinatorships and respective divisions.
[154] CAISAN and COMUSAN were established by Municipal Law No. 15,920, of Dec 18, 2013, as part of the National Food and Nutritional Security System.
[155] Municipal Decree No. 35,412, of Aug 18, 1995
[156] Municipal Decree No. 52,089, of Jan 19, 2011
[157] Municipal Law No. 17,819, of Jun 29, 2022
[158] Municipal Decree No. 61,042, of Feb 9, 2022

- **Municipal Council for Sustainable and Solidarity Rural Development (CMDRSS)**[159]**:** monitors the development of actions and policies related to agriculture and sustainable rural development, including the implementation of the Municipal Plan for Agroecology and Sustainable Rural Development 2022-2023 (more info). The Plan includes strategic actions for school feeding, including the promotion of the acquisition of organic foods.

Detailed presentation of the innovative action: Ensuring healthy and sustainable food for over 1 million students

The city of São Paulo stands out for the scale of its school feeding program, benefiting more than 1 million students daily, equivalent to half the population of Paris. Actions related to school feeding in the Municipality date back to the 1950s. Among these actions, two recent milestones point towards ensuring healthy and sustainable food:

1. The progressive inclusion of fruits, vegetables, and greens in school menus alongside the exclusion of processed and ultra-processed foods, such as biscuits, sausages, and sugar, between 2005 and 2018. Two significant initiatives were introduced: the "Prato Aberto" tool in 2017 and the Sustainable School Menu Project in 2018.

    - The "Prato Aberto" tool is an initiative of active transparency by the Municipality of São Paulo, allowing daily consultation of menus for each educational unit. In addition to facilitating menu management by educational units and families, the platform enables the evaluation of meal quality and potential adjustments.

    - The Sustainable School Menu Project aims to diversify food options by introducing legumes in partnership with the Brazilian Vegetarian Society. It is aligned with the Climate Action Plan of the City of São Paulo[160], aiming to reduce the environmental impacts of school feeding. Key highlights of the project:
        - Introduction of vegetable-based dishes, expansion of purchases from family farming, reduction of food waste, and pedagogical activities with the school community.
        - The project includes training for the entire preparation team, as well as other professionals from the school community, such as managers, nutritionists, educators, and families. Seven modules present vegetarian recipes using ingredients adapted to Brazilian food culture and rich in proteins.
        - In 2022, the project received international recognition from the C40 Cities Bloomberg Philanthropies Awards and was presented at the 27th United Nations Climate Change Conference (COP27).

2. In 2015, a policy[161] was approved to progressively introduce organic and agroecological foods into the São Paulo School Feeding Program.

    - The inclusion of organic foods includes products from agroecological transition processes located in the Municipality of São Paulo and prioritizes family farming production.

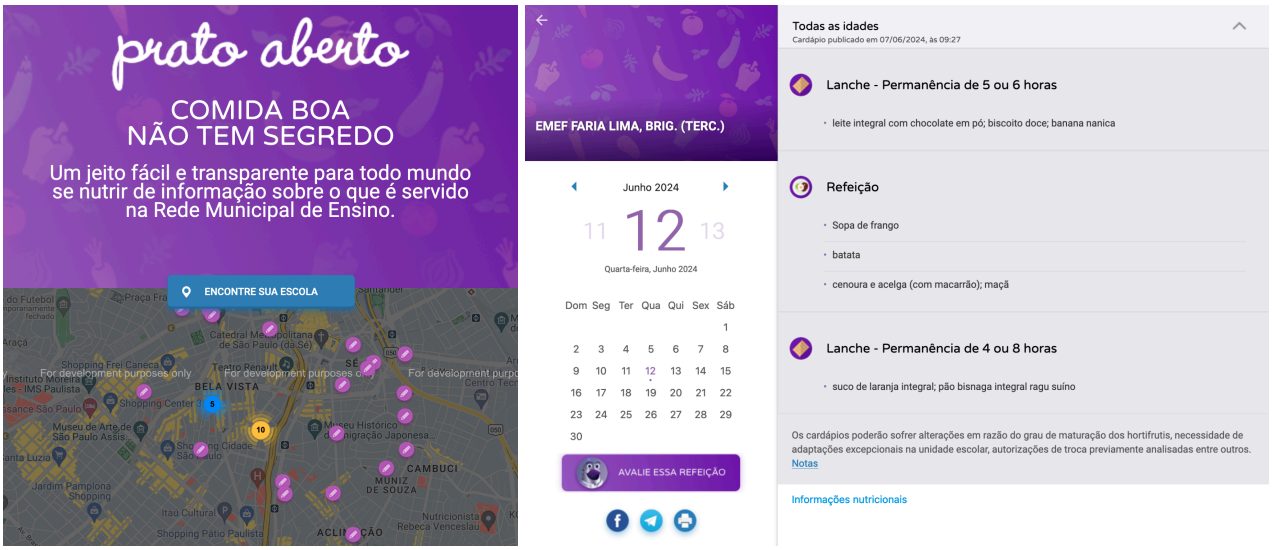
[159] Municipal Law No. 16,050, of Jul 31, 2014, which established the Strategic Master Plan (PDE), regulated by Municipal Decree No. 57,058, of Jul 14, 2016.
[160] Municipal Decree No. 60,289, of Jun 3, 2021.
[161] Municipal Law No. 16,140, of Mar 17, 2015; Municipal Decree No. 56,913, of Apr 5, 2016.

- The policy envisages a *Progressive Introduction Plan for Organic or Agroecological Foods in School Feeding*, with the goal of acquiring 100% organic or agroecological foods by 2026.
- An intersectoral Management Committee[162] was created to ensure plan execution, comprising City Hall Secretaries, CAE, COMUSAN, CDRSS, the Faculty of Public Health of the University of São Paulo, as well as representatives from civil society and family farming organizations in the Municipality
- Titled "More Organic School," the policy includes a pilot project implemented in partnership with the NGO Kairós at the Nutritional Recovery and Education Center.
    - Started in 2021 as a pilot, the project aims to identify strengths and difficulties in the procurement circuit, menu adaptation, and acceptance by the children served.
    - In addition to introducing healthier foods, the project has a pedagogical component through workshops where children come into contact with food before its preparation.
- In 2022, the First Municipal School and Agroecological Food Meeting was held in São Paulo, aiming to bring together maintainers from the partner network with family farmers in the Municipality, involving various municipal administration Secretariats and higher education institutions.

Challenges: There are numerous challenges in ensuring healthy and sustainable food for a municipality of São Paulo's size. Considering the acquisition of fresh foods from organic or agroecological family farming, the demand for production volume implies the need for associative or cooperative organization by agricultural producers. The inclusion of these foods primarily by the partner network allows greater flexibility in food procurement since it is decentralized by each maintainer. However, around 31.5% of educational units bypass the policy of acquiring organic foods and family farming because food procurement follows the purchasing policy of outsourced companies, despite the entire school network (partner and municipal) following the menu elaborated by the City Hall.

[162] Intersecretarial Ordinance No. 007, of 2016.

Visit to urban garden at the Center for Urban Agriculture and Nutrition Education (CREN). Picture by the research team.



Screenshots from the Prato Aberto platform, in which daily menus for every municipal school are publicly available.

Final considerations

In a country with such vast territorial and population dimensions, diverse territories, and social inequality like Brazil, broad public policies require immense institutional arrangements that regulate and standardize the joint action of all levels of government (federal, state, and municipal), but also need to be sensitive to the local specificities of each region, where the population effectively accesses their rights. In this sense, in recent decades, several exemplary national policies have been created, such as the Unified Health System (SUS), income transfer programs like Bolsa Família, and also the National School Feeding Program (PNAE).

In common, these policies stem from a federal government leadership, which orchestrates the interactions among different institutional actors and multiple public policies, establishes the rules of operation for the other federative entities, and commits federal funding and guidance for implementation. Moreover, these policies also share the creation of conditions and instruments so that, along with the central issue the action is aimed at, positive collateral additions are also produced, addressing other social issues through their execution. In the case of school feeding, some examples are the incorporation of parameters from the Brazilian National Dietary Guidelines to ensure high food and nutritional quality (rather than just serving any meals in schools), and the rules that include family farming as priority suppliers, ensuring a national strategy for food supply - and food sovereignty - and intending to promote short circuits and local income generation for smallholder farmers. The results of a study conducted in 2018[163] to monitor the food environment in Jundiaí reinforced the accumulation of evidence that the socially and economically most vulnerable areas have the fewest retail healthy food establishments but with a higher supply of ultra-processed foods[164]. If it is possible to consider the public school network as a food environment, the National School Feeding Program (PNAE) fulfills the role of providing islands of access to adequate food in food deserts.

However, there are still frontiers to be overcome - such as the climate perspective, that could be addressed with more incentives for organic and agroecological foods procurement. Although the legislation already encourages the purchase of these foods, such purchases are not compulsory because the program rules are sensitive to the differences in the supply of these foods in different regions, the challenges of funding[165], and the implementation capacity by states and municipalities of different sizes and with different financial and technical resources. However, municipal and state authorities and public agents (or "street-level bureaucrats"[166]) in many locations have already been adopting creative and innovative solutions, fully connected with the available resources and with local demands and opportunities, to meet (and, in some cases, exceed) the recommendations provided in the national code. Below, we present a comparative assessment of the five cases studied in this report.

Brief comparative analysis and lessons learned

Intersectionality and Resilience: The first aspect to be highlighted in a comparative analysis between municipalities is the importance of intersectoral arrangements (between different secretariats of public administration and with other partner institutions with public action). The best example is that of Belo Horizonte, where the food policy is carried out jointly between the Subsecretariat of Food and Nutritional Security and the Secretariat of Education, in addition to the involvement of strategic partners such as

[163] By the Supply Department of the Agribusiness, Supply, and Tourism Management Unit of Jundiaí, in partnership with the Faculty of Public Health of the University of São Paulo.
[164] Serafim, 2021
[165] The program rules that labeled organic food can be purchased for a 30% higher price but doesn't ensure federal funds to cover such premium.
[166] Lipsky, 1980

universities and technical assistance agencies. This not only ensures greater quality, coverage, and depth of actions but also establishes roots that make policies more long-lasting and less prone to variations throughout different municipal administrations. The production of guidelines, normative instructions, and other public instruments not only organize the execution of these policies but also create a shared sensitivity among many entities of the public service, making actions less dependent solely on the discretion and individual commitment of the managers of the occasion.

Civil Society participation: The mere formal existence of School Feeding Councils, Intersectoral Chambers, and Municipal Food Policy Councils does not guarantee that there will be active participation of civil society in monitoring and guiding policies in all municipalities. However, in those municipalities where these participatory bodies are strongly active, there may not only be intense pressure for the public administration to properly fulfill its functions but also strong collaboration between the government and the population to ensure that policies stand out. An example is the School Feeding Council (CAE) of Jundiaí, where from its inception in the early 1990s, there was already a prioritization of urban gardens and the agricultural vocation of the municipality - which would be implemented in the following decades. In São Paulo, there is a continuous effort towards transparency and dissemination of records and minutes of council meetings, and a strong permeability of public management concerning the deliberations and discussions of participatory bodies. As a result, entities like the Municipal Food Policy Council (Comusan) and the School Feeding Council (CAE), which are extremely active, have a direct influence on the expansion and improvement of school meals in the municipality - especially in imposing stricter restrictions on less healthy foods.

Local procurement: In large cities with high demand for food for school meals and low local agricultural production (such as São Paulo and Belo Horizonte), there are challenges in accessing family farming and coordinating nearby production bases - generally in metropolitan and peri-urban areas. However, there are experiences that enable the acquisition of local foods in a more localized manner. In Belo Horizonte, a share of the purchase of fresh vegetables is carried out by the schools themselves, allowing for greater adaptation to dietary preferences and special diets, and greater accessibility to small family producers. In São Paulo, there are studies to implement something similar for daycare centers, which are smaller units spread throughout the city's territory, and a successful experience of local agroecological food procurement in centers for nutrition care for children facing malnutrition (a specialized public equipment within the health system). In Jundiaí, the supply of vegetables for the entire network is provided by school gardens installed in the units themselves - which combines supply needs with pedagogical opportunities.

Development of the Production Base: In municipalities with a higher concentration of rural areas, the challenge is to associate the demands for school meals with the economic development of the production base - especially family farming. In Araripina, there is coordination by the Department of Rural Development to strengthen cooperativism, associativism, and entrepreneurship in family farming, together with civil society organizations - resulting in one of the highest rates of purchases from family farming among the municipalities studied (68% of PNAE federal resources in 2022). In Santarém, the need to articulate the local production base stemmed from the need to include foods that are part of the Amazonian food culture - leading the municipal government to seek mechanisms to include products from the local socio-biodiversity in purchases from family farming, mostly produced by traditional populations, such as quilombola communities, riverine people, and indigenous peoples. In Jundiaí, the organization of the production base does not occur due to PNAE demands but because the city is part of the Tourist Pole of the Fruit Circuit, which is very important for farmers in the region.

Agroecological and Organic Foods: Given the higher production costs of agroecological foods and organic certification (or at least for the transition period) Brazilian rules and policies allow a premium price to be paid for organic food as an economic incentive for the ecological transition but don't ensure additional

federal funds for that. Besides, due to strict rules regulating public procurement, this premium price is only allowed for certified organic food, leaving non-certified agroecological food (usually produced by smallholder farmers and traditional communities) with no economic incentive compared to conventional production. Therefore, in most of the cases studied, the presence of agroecological or organic foods results less from actions specifically aimed at their inclusion and more as a consequence of implementing innovative actions to improve the quality of the products included, often resulting in foods produced in an agroecological manner. This is the case in Jundiaí, where the educational character of school gardens and the choice to prioritize non-conventional food plants result in a local production that supplies the entire network, being pesticide-free and connected with the food culture of the biome. Since 2022, it is mandatory in Jundiaí to prioritize organic foods for school meals, but there are still no targets or mechanisms for this prioritization. In Santarém, the choice to buy food from the local socio-biodiversity of traditional populations ends up incorporating, in these foods, many of the knowledge and practices contemplated in agroecology. In Araripina, the presence of agroecological foods results from the fact that many of the associations and cooperatives fostered by the actions of the Department of Rural Development also organize around Social Control Organizations (OCSs) that attest, in a participatory manner, to the conformity of production. In Belo Horizonte, there is no purchase of certified organic foods for school feeding, due to the lack of resources to cover the additional price, although the municipality runs a program to support local urban agroecological producers to get organic certification by a community-led process. Among the observed cities, São Paulo is the only one that has established targets by decree[167] for school feeding, stating that by 2026, 100% of municipal school meals must be composed of organic foods, besides running a program that supports family farmers in the municipality's rural area with technical assistance for agroecological transition.

What needs to be done?

- Increase of PNAE federal funding specifically dedicated to enabling municipalities and states to pay the additional 30% for organic certified food and a clear regulation allowing the same premium to be paid for agroecological non-certified foods, thus generating demand for an agroecological transition of the local productive base.
- Creation of protocols and programs for agroecological transition at the federal level to encourage and support - with free technical assistance and ideally free agriculture inputs and machinery service -, family farmers who are not yet eligible for organic certification but wish to start producing food more sustainably - as this process may take several years and be costly to producers in the meantime.
- Strengthening technical assistance focused on associations and cooperatives to access ways of organic quality recognition, especially Social Control Organizations (OCSs).
- Establishment of partnerships with social movements and other structured and stable social mediators, such as cooperatives and agrarian reform settlements from the Landless Workers' Movement (MST), for the rapid large-scale public procurement of agroecological foods from settlements near bigger cities.
- Encouraging the creation of intersectoral programs, policies and protocols in municipalities that facilitate knowledge sharing, coordination of integrated actions, and increased resilience of initiatives.

[167] Municipal Decree No. 56,913, of Apr 5, 2016

- Creating legal instruments that ensure the continuity of successful adaptations of policy to the municipal context - at the federal level, to encourage municipal actions, and at the municipal level, to ensure the resilience of locally implemented policies.
- Developing coordinated action plans between the agricultural production base and school feeding policies, especially mapping this base, keeping continuous dialogue for food menu adaptation to seasonality and local supply, and improving production processes to meet public calls.
- Encouraging technical partnerships and cooperation with universities, government agencies, and civil society organizations for the experimentation and implementation of innovative initiatives.
- Strengthening participatory policy councils and civil society bodies to advocate for the creation and maintenance of consistent laws and policies to improve school feeding.
- Developing methodologies to enhance the publicity and reach of implemented policies, increasing school community ownership of successful experiences, and facilitating the exchange of experiences that are replicable or adaptable to other localities.
- Developing and implementing procurement protocols (at federal and local levels) that reinforce or mandate the prioritization of organic certified, agroecological and family farming foods in municipalities where school feeding is implemented (partially or totally) by outsourced providers or partner networks with autonomy to purchase food.
- Strengthening continuous food education programs in schools to raise awareness among students, teachers, technical staff, and families on topics such as nutrition, sustainability, conscious food choices, and food culture.
- Promoting public food procurement from urban or local agriculture by school units that have a decentralized system for acquiring fresh food.

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