



## OPEN ACCESS

## EDITED BY

Salma Loudiyi,  
VetAgro Sup, France

## REVIEWED BY

Mariam Ismail,  
Western University, Canada  
Salvatore Ammirato,  
University of Calabria, Italy

## \*CORRESPONDENCE

Morgane Retière  
✉ morgane.retiere@gmail.com

RECEIVED 01 July 2022

ACCEPTED 11 April 2023

PUBLISHED 05 May 2023

## CITATION

Retière M and Darly S (2023) School food policies and the transition of urban food systems in Brazil and France: insights from São Paulo and Greater Paris region case studies. *Front. Sustain. Food Syst.* 7:984207. doi: 10.3389/fsufs.2023.984207

## COPYRIGHT

© 2023 Retière and Darly. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

# School food policies and the transition of urban food systems in Brazil and France: insights from São Paulo and Greater Paris region case studies

Morgane Retière<sup>1,2\*</sup> and Ségolène Darly<sup>1</sup>

<sup>1</sup>Laboratoire Dynamiques sociales et recomposition des espaces (Ladys), Université Paris 8-Vincennes-Saint-Denis, Saint-Denis, France, <sup>2</sup>Grupo de pesquisa sobre Agriculturas Emergentes e Alternativas (Agremal), Escola Superior de Agricultura "Luiz de Queiroz"-Universidade de São Paulo (ESALQ-USP), Piracicaba, Brazil

**Introduction:** For many promoters of alternative food systems, scaling up local food provisioning holds the promise of mitigating the negative environmental impacts of the corporate food sector by stimulating regional agricultural diversification. Although these initiatives challenge the dominant model, the question remains of their transformative power and their place in the dynamics of change, at the meso and macro levels. Scholars as well as social and political movements often identify school catering as a sector where such doubts can be overcome. In this paper, we seek to explore the role of public policies encouraging sustainable school food procurement in framing the possibilities for scaling up alternatives' impacts on agricultural landscapes and possible diversification dynamics.

**Methods:** Our work is based on the analysis of the day-to-day governance of school food procurement in 21 case studies located in large cities, Greater Paris (France) and São Paulo (Brazil). In total, 33 semi-structured interviews were conducted with different types of actors (managers of school catering services, representatives of agricultural cooperatives and advisory organizations). The interviews transcriptions were processed using thematic analysis. The purpose was to examine whether these 21 cases shared common logics, regardless of their technical facilities, management methods and national contexts, in order to assess which of these commonalities could be interpreted as specific to metropolitan territories.

**Results:** In highly urbanized countries, larger cities' urban food strategies are expected to contribute significantly to bending the curve of landscape simplification. Such hope is mitigated by our findings: we show that most cases relate to the trend of a dominant alternative pattern that relies on a renewed agro-industrial system which does not challenge the regional specialization dynamics.

**Discussion:** Nevertheless, most of the cases that deviate significantly from this model are found in the São Paulo metropolitan area; this suggests—as Brazil is a pioneer in strong public policy promoting direct procurement of school meals from sustainable family farming—that national framework can still set the conditions for local innovations.

## KEYWORDS

school food public policies, ecological transition, Alternative Food Networks (AFN), territorialization of agri-food systems, Brazil, France

## 1. Introduction

The principles of agricultural modernization project (industrialization, standardization, globalization) have shaped the agri-food system in most parts of the world (McMichael, 1994; Lamine et al., 2012). This agro-industrial paradigm is under severe criticism. Despite the productivity gains associated with farm transformations and the significant development of supply systems, food security is not guaranteed in all regions of the world nor for all social groups (Roudart, 2002). Major environmental concerns relate to water pollution, soil degradation, and low resilience of productivist simplified farming systems to atypical or extreme climatic events (Buttel, 2006). Many scientists insist in particular on the high risks induced by the process of regional crop specialization that the corporate agri-food system triggers. In most developed countries, farming systems have followed a path of considerable specialization both at the scale of the farm unit (decline in mixed farming, simplification of field crop rotations) and at the scale of the regional landscape (a consequence of the influence of the food processing industry on farmers' decisions). This trend, which is parallel to farmland concentration, has become more pronounced since the 1980s in Europe, resulting in increased use of synthetic inputs to mitigate the effects of short rotations, as well as loss of agrobiodiversity and biological regulation within cultivated ecosystems. To mitigate the effects of these negative externalities, public authorities now recognize the need to support agricultural diversification (Meynard et al., 2013).

Seeking alternatives, farmers are encouraged to build counter-trajectories in which they diversify their production (Charrier et al., 2014; Magrini et al., 2016; Meynard et al., 2017). However, many barriers remain with regards to the market launch of their products throughout conventional channels, due in particular to technological constraints limiting the capacity of the processing industry (ibid.) to value a diversified and heterogeneous production. In the wake of these concerns, many scientists and social movement actors are calling for the development of the alternative food sector. Alternatives to the agro-industrial model persist (Goodman, 1997, 2017) and develop, gaining legitimacy: organic and agro-ecological products, short food supply chains, localized or territorialized food systems (Morgan et al., 2006; Deverre and Lamine, 2010), but also peasant family farming (Verhaegen, 2012). For many promoters of these alternative food systems, relocalization of urban food provisioning, by triggering new marketing channels, has the potential to enhance farm diversification. Scaling up local food provisioning therefore holds the promise of mitigating the negative impacts of the corporate food sector by stimulating regional agricultural diversification. As attractive as this assertion sounds, it still needs to be confronted with actually existing initiatives toward relocalization of urban food provisioning.

Most existing alternative systems present different degrees of structuring but mainly evolve at the margin of the dominant regime. They often remain confined to local levels or within circumscribed networks of actors. Although these initiatives challenge the model and propose alternatives, the question remains of their transformative power and their place in the dynamics of change, at the meso and macro levels. School catering is often seen as a sector where these doubts can be overcome (Morgan and Sonnino, 2010a).

School food procurement systems can be depicted as a subcategory of the global food system. It is composed of actors and resources that enable school catering services to offer a daily meal to all students. School catering accounts for considerable volumes and feeds a large proportion of school-age children; as such, it is often cited as a potential lever for transition toward a more sustainable food system, by increasing the share of alternative products in the menus, such as organic or locally produced items. The World Food Program, in its latest report, estimates that 388 million children worldwide benefit from school meals (WFP, 2023); 47 million in Brazil (whose school feeding program is the second largest in the world, after India) (WFP, 2023). In France, ~7 million students attend school meals at least once a week (WFP, 2023). In the literature devoted to the relationship between alternative systems and school catering, studies continue to point out the challenges faced by large cities (Morgan and Sonnino, 2010a; Siliprandi and Belik, 2012).

In this paper, we seek to explore the role of national political engagement encouraging school food sustainable procurement in framing the possibilities for regional agricultural diversification. For that, we have studied, at the metropolitan scale, the implementation of public policies in two large urban areas, the French Île-de-France region, surrounding Paris, and the Brazilian São Paulo metropolitan region (*Região Metropolitana de São Paulo*, RMSP). Both are among the world's 32 metropolitan areas with more than 10 million inhabitants and have similar demographics. When it comes to food supply, both face similar challenges, common to many big cities (Morgan and Sonnino, 2010b; Grisa et al., 2017): dense inner city and suburbs, congested transportation routes and distance from agricultural production areas (Figure 1). In both countries, laws issued in 2009 are using school catering as an instrument not only of food policy but also of agricultural policy: in Brazil, law n° 11.947 that reforms the national school food program and, in France, law "Grenelle 1" on the implementation of the 2007 eponymous Environment forum, as we develop in the following section. In these two national contexts, urban governments are legally bound to relocate (at least partially) school food provisioning.

## 2. Concepts, materials and methods

### 2.1. From legal requirements to day-to-day government: looking for local supply in practice

In the last decades, France and Brazil have formulated policies that promote sustainable school food procurement and which are similar in many aspects. In Brazil, law n° 11.947, enacted in 2009, reforms the National School Food Program (*Programa nacional de alimentação escolar*, PNAE) and compels municipalities to allocate 30% of the budget<sup>1</sup> to direct purchase from family farmers. In France, the law "Grenelle 1," also issued in 2009, requires public authorities to purchase at least 20% of products

<sup>1</sup> Municipalities and States receive federal funding to operate the school catering services. The federal funds can only be used for purchasing foodstuff. The 30% of direct purchases from family farmers obligation applies to this federal funding.

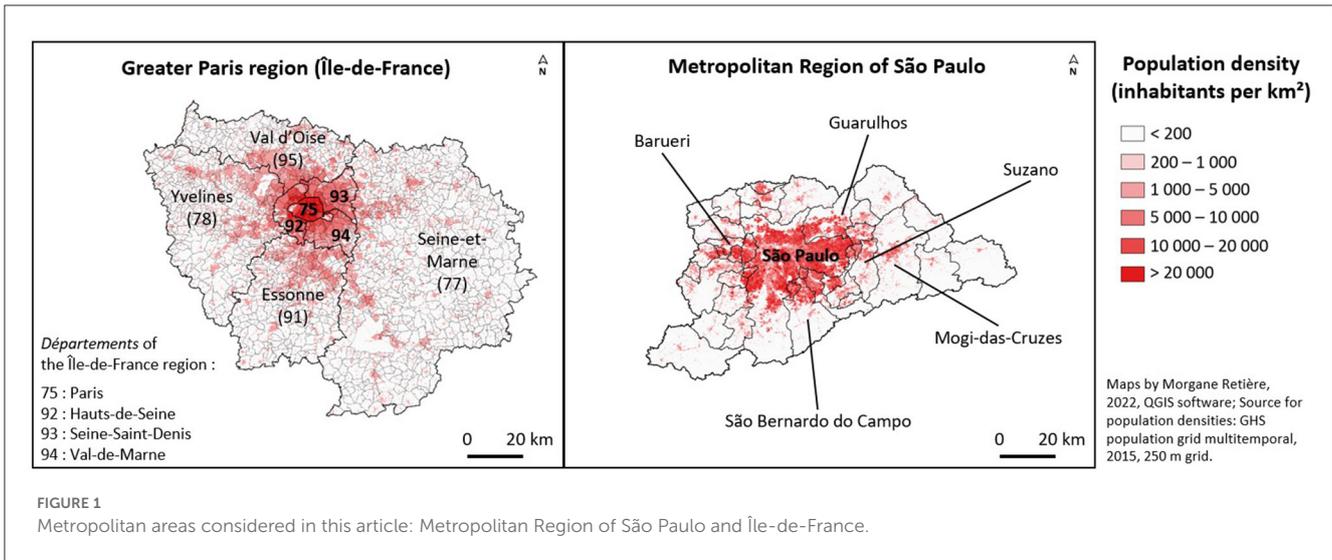


FIGURE 1 Metropolitan areas considered in this article: Metropolitan Region of São Paulo and Île-de-France.

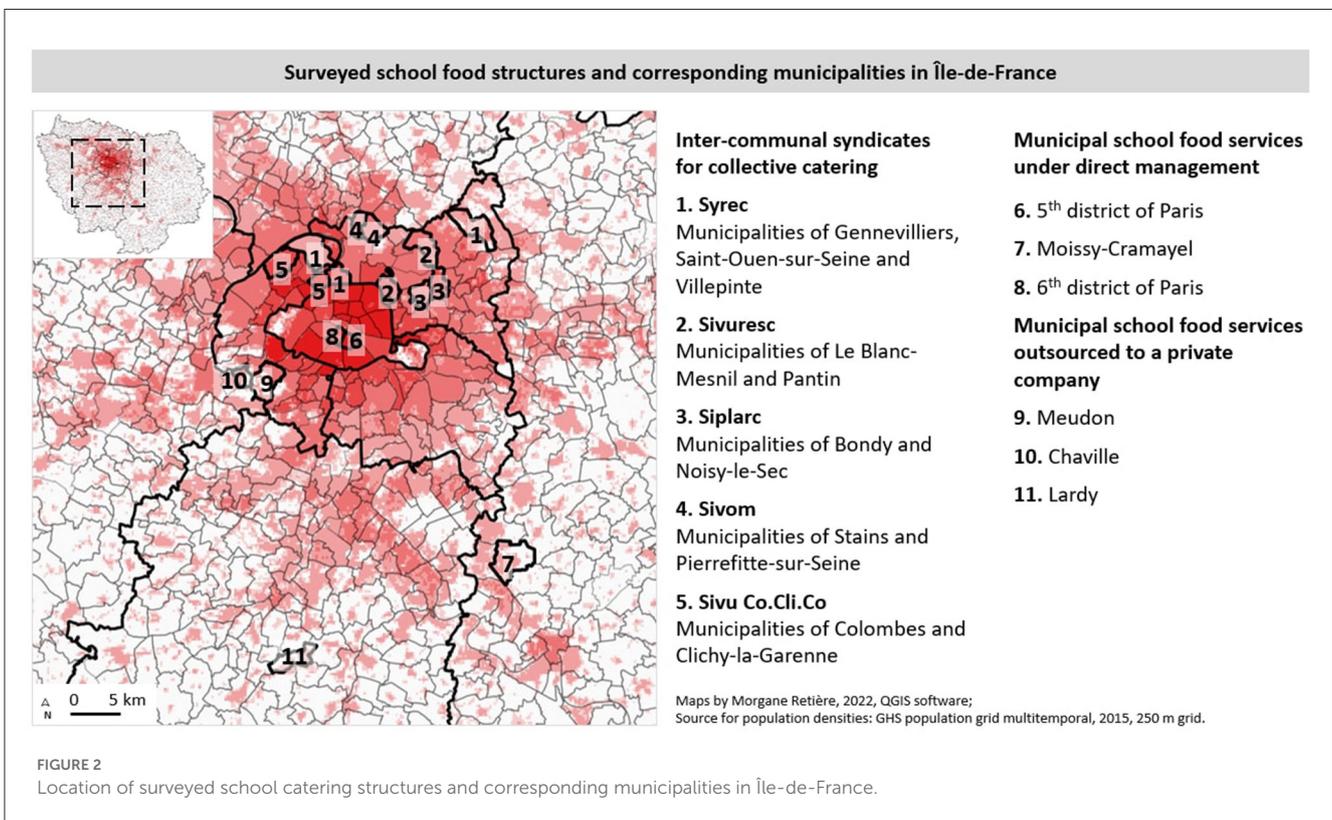
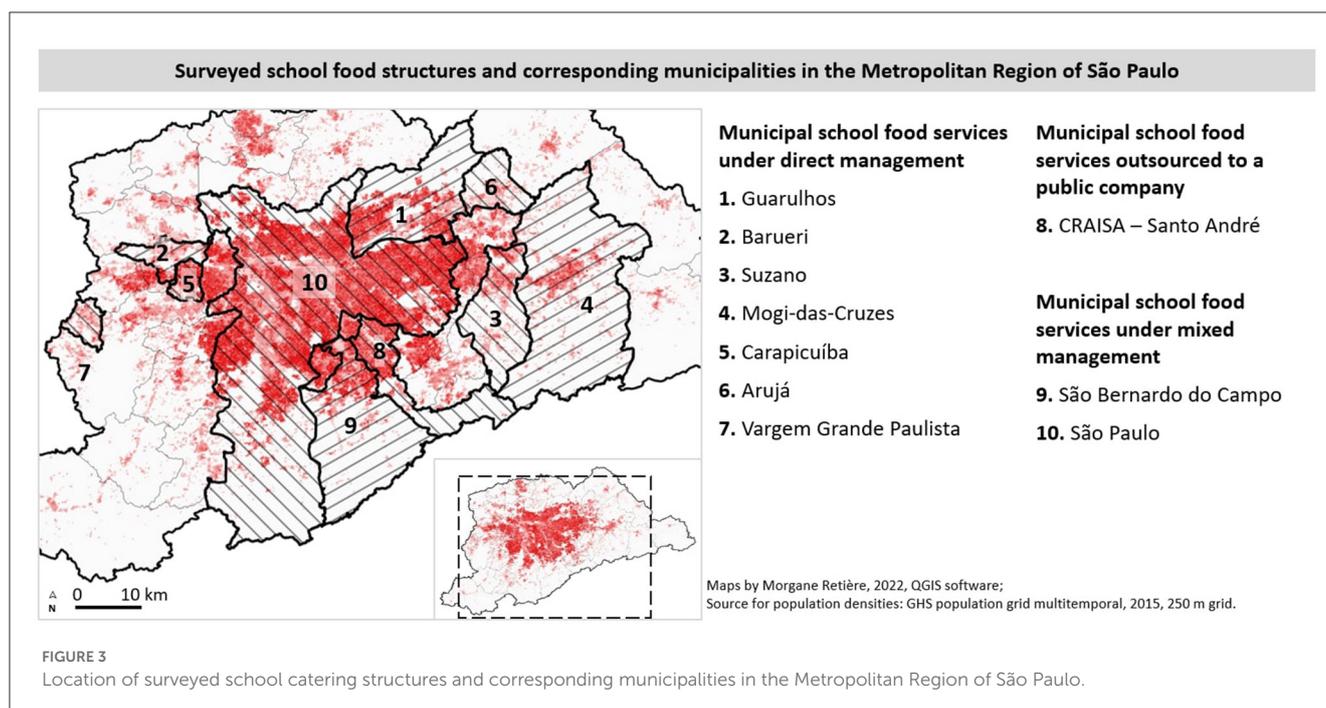


FIGURE 2 Location of surveyed school catering structures and corresponding municipalities in Île-de-France.

from organic sources. Organic supply has to be complemented by 20% of “seasonal products; products with a low environmental impact, considering conditions of production and distribution; products under quality and origin labels; or products from farms engaged in a process of environmental certification” (law “Grenelle 1”, 2009, Article 48). In 2010, the French law on the modernization of agriculture (Article 1) added incentives for school catering to use “short food supply chains” (direct sale processes or supply chains with only one intermediary).

Few years after the adoption of these legal requirements, first studies (Darly, 2012; Kebir, 2012) expressed concerns about the fact that the “pioneer spirit” of the Grenelle (support the development

of organic farming around urban areas through food catering) seems to be forsaken for the benefit of a more pragmatic shift toward local production. These seminal results already considered with caution the real impact of food catering supply on local production development. These studies also pointed out the gaps between the legally required objectives and the effects of the “actually existing” practices adopted by suppliers to meet these goals. Focusing only on the content of national law gives an incomplete understanding of its actual capacity to transform reality. As urban governments enter the 21<sup>st</sup> century with no public instruments dedicated to monitoring their food provisioning strategy (Morgan, 2013), urban food planning documents do not



provide much more details on how sustainable procurement is actually operated.

Therefore, we chose to study and assess the effects of legal requirements by analyzing the day-to-day implementation of sustainable procurement practices in municipal school catering services.

## 2.2. Conceptual framework: analytical tools to understand the reconfigurations of school food supply systems

Is sustainable school catering supply an instrument of public action capable of initiating the ecological transition of the dominant agro-industrial model? Seeking for analytical tools to answer this question, we turn to the scientific literature dedicated to initiatives that oppose the agro-industrial model. Alternative food systems expose the negative environmental, social and economic externalities of the industrialization and specialization of agriculture (Renting et al., 2003; Lamine, 2005; Darolt, 2012; Goodman, 2017; Michel-Villarreal et al., 2019). In response, these alternatives propose to redistribute added value, support more environmentally friendly and less productivist forms of agriculture, strengthen relationships between actors, and experiment new forms of political governance, while reconnecting agricultural and food issues.

Inspired by the rich Alternative Food Systems (or sometimes referred to as Alternative Food Networks) scientific literature, we build an analytical grid of food provisioning systems focused on two dimensions: networks of actors (Ilbery and Maye, 2006; Brunori, 2007; Ammirato et al., 2021) and territorial resources deployed (Campagne and Pecqueur, 2014). For these two dimensions, we forged a grid to describe the case studies using generic categories, in the perspective of inter-cases and

transnational comparisons. In this respect, we draw from the scientific literature the main factors that should be considered as differentiating drivers.

### 2.2.1. Networks and coordination between actors

New public policy injunctions toward sustainability, combined with demands emerging from social groups (parents of schoolchildren, organic or family farming representatives), reconfigure the networks of actors involved in school catering. A first line of differentiation between these adjusted networks is whether it is the traditional conventional stakeholders (food wholesalers, private catering companies) who adjust their practices to partially meet those new requirements or whether new actors are emerging (Naves, 2016).

Another aspect of the networks variety is the nature and the dynamics of the relationships between actors (Sonnino, 2016; Rossi et al., 2019), especially between the urban school catering services and the agricultural sectors (Marty, 2014). Two possibilities can be observed: weak or strong coordination.

A highly segmented organization characterizes the conventional agro-industrial system. Processing, distribution and marketing middlemen, operating on the private market, endorse the role of harmonizing (or, at least, making compatible) the opportunities and constraints of suppliers (farmers) and demanders (school catering services). The system relies on specialization (each actor is responsible for a limited set of skills) and results in weak coordination (Le Velly and Bréchet, 2011).

Conversely, when an alternative system emerges, the relationships can shift toward stronger coordination (Le Velly, 2017; Lamine et al., 2019). Previous case studies show that setting up a local supply system requires evolving toward a “joint regulation” (Le Velly and Bréchet, 2011, 15) between actors, made of stronger dialogue and more transversal skills.

### 2.2.2. Territorial resources deployed

The resources available in metropolitan territories, particularly the size of the urban market, are supposed to contribute to enhancing sustainable food procurement. However, metropolitan forces can also steer the supply system toward other configurations, thus moving away from criteria of sustainability.

These statements lead us to consider that the configuration of the procurement system is also highly dependent of material and immaterial territorial resources. To analyze this aspect, we chose to differentiate various types of resources depending on the type of capital that is activated: economic capital (financial and infrastructural resources), cultural capital (knowledge and know-how) and social capital (networks that can be mobilized) (Ansaloni and Allaire, 2016).

### 2.3. Study areas: two global cities with similar extraverted food supply systems

São Paulo and Paris, two global cities, share several characteristics. They both hold a central position in each country's urban network, due to their demographic weight (they are the most populous cities), as well as economic and logistic relevance. These urban areas are, thus, structuring centers in the national and international food market. They host large-scale logistics platforms, both publicly (the public wholesale markets) and privately operated (in particular by large group purchasing organizations). Food provisioning for millions of Paulistan and Parisian consumers largely depends on distant regions, as is the case for many large cities (Peters et al., 2009).

The markers of this metropolitan extraverted food supply system can be observed in the urban landscape. One of the emblematic infrastructures is the São Paulo Terminal Warehouse (*Entrepósito Terminal de São Paulo*, ETSP), commonly known as CEAGESP, an acronym for the Company of Warehouses and General Stores of São Paulo (*Companhia de Entrepósitos e Armazéns Gerais de São Paulo*), the public company that runs it. Spreading over more than 60 hectares in the western part of the municipality, this food logistics center is the largest wholesale market in Latin America (Proust, 2020). The annual volume marketed is around 800,000 tons (CEAGESP, 2019). The prices compiled daily serve as a benchmark for many other markets in Brazil and Latin America. Dozens of other logistics platforms are located in the outskirts of the metropolis, near the highways that connect with the southern region, or those oriented inland and north, toward Rio de Janeiro as well as the coast and the port of Santos.

In Île-de-France, the Rungis wholesale market (*Marché d'intérêt national*, MIN) represents, like the CEAGESP, an important marker of the food supply system, important not only for Paris but at a national and European scale. The historic wholesale market (*Grandes Halles*) moved out from the center of Paris in the 1960s, undersized in relation to the city's population growth. In addition, from the 1950s, large purchasing groups developed and, at the request of independent retailers, the French State tried to regain control of food logistics; to this end, it created a large logistical platform in the town of Rungis, located about 15 kilometers south

from the center of Paris, close to Orly airport (IAU Île-de-France, 2017). Its infrastructure extends over 234 hectares. Considered the world's leading wholesale food market, it sells ~2.7 million tons of foodstuffs per year, more than three times the volumes passing through CEAGESP.

Most of the wholesaler's food warehouses in Île-de-France are located in the Val-de-Marne department, around the Rungis wholesale market (DRIEA Île-de-France, 2019). In all, the Île-de-France region receives 11.6 million tons of food products from other French regions each year (IAU Île-de-France, 2017). Besides supplying local consumers, the purpose of the logistics and trade structures is to export Île-de-France's agricultural production outside the region and to serve as a transit hub for foodstuffs.

These cities' countrysides share similar characteristics. While the urbanized area represents 26% of the São Paulo Metropolitan Region (8,000 km<sup>2</sup>), urban and peri-urban agriculture still occupies 22% of the surface, with 5,083 farms. Fruits and vegetables represent, in value, 65% of agricultural production in the RMS (Escolhas and Urbem, 2020). The majority of farms are located east of the metropolitan region. The municipality of Mogi-das-Cruzes stands out, as it contributes for 35% of the local agricultural production (in value); 65% of farms are categorized as family farms, although representing only 12% of the surface (Escolhas and Urbem, 2020). This situation is similar to the national trends: 77% of farms for 23% of the country's agricultural area (DelGrossi et al., 2019).

As for Île-de-France, a region twice the size of the São Paulo Metropolitan Region, there are ~5,000 farms on 5,800 km<sup>2</sup> (48% of the regional area), with an average size of 112 hectares (1.12 km<sup>2</sup>). Around half of the agricultural land is located in the department of Seine-et-Marne (3,380 km<sup>2</sup>); this department extends on the east part of the region. Eighty-four percentage of the Île-de-France agricultural area is devoted to field crops (64% cereals, 13% rapeseed, 7% sugar beets); there is very little livestock farming (Delaporte and Brajon, 2017). The green belt has gradually moved away as the city expanded and is now fragmented; ~450 farms are dedicated to market gardening, arboriculture and horticulture (Billet, 2017; Institut Paris Région, 2020). Regional specialization is therefore more pronounced in IDF, compared to the RMS, where a green belt has more significant expression: 10 times more farms and more diversified systems (there are still little more than 1,000 livestock farms around São Paulo, for example). Farmers in both these regions, and especially those specializing in the production of fruits and vegetables, benefit from outlets that, due to the proximity of consumers, might guarantee fair prices; however, they also are in competition with the corporate food market which operates on large scales. As a result, the metropolitan food system has limited connections with local agriculture.

The metropolitan regions are not homogeneous and a density gradient ranges from the city center to the peri-urban fringes (Darly and Aubry, 2014). Thus, to identify possible geographical drivers, we chose 21 school catering facilities, 10 in Brazil and 11 in France, according to their location in the metropolitan area, as shown on the maps in Figures 2, 3: in the center (2 in France and 1 in Brazil), the suburbs (7 in France and 5 in Brazil), but also on the fringes, closer to agricultural production areas (2 in France and 4 in Brazil).

## 2.4. Investigation protocol

To answer our research questions, we deployed a multiscalar analysis: at national level, the legal frameworks that emerged at the end of the 2,000 decade and, at local level, the subsequent implementation of sustainable procurement systems in Paris and São Paulo. This investigation was carried out as part of a doctoral research (Retière, 2022).

### 2.4.1. Legal framework and public policy instruments

Our main research assumption is that decisions regarding the supply of school catering are a matter of local day-to-day government, whose room for maneuver is shaped by national legal frameworks. We thus analyzed the main frameworks (legal acts, regulations) in both countries. In Brazil, we considered the framework resulting from the adoption of the PNAE law n°11.947. In France, we focused on the outcomes of the Grenelle consultation<sup>2</sup>. We compared the types of public policy instruments (Lascoumes and Le Galès, 2012; Halpern et al., 2014) implemented.

We also studied where, when, for how long and by whom these innovative policies were designed and the way that national entities did (or did not) take into account feedback from the local level. For that purpose, we relied mainly on secondary sources: reports issued from concertation arenas (the Grenelle consultation in France; meetings and conferences organized by the National Council for Food Security, CONSEA<sup>3</sup>, in Brazil), minutes of parliamentary debates, ministerial reports, but also some particularly rich academic works (Peixinho, 2011; Schottz, 2017).

### 2.4.2. Semi-structured interviews with 21 school catering services

The fieldwork was carried out between April 2016 and October 2018 (Retière, 2022). To understand the day-to-day government of food procurement, we investigated 21 school catering services (as well as some of their suppliers) of the localities chosen within the metropolitan area (see Figures 2, 3). These services operate according to different modalities (direct public management by the municipality, outsourcing to public organizations or private companies). In total, 33 semi-structured interviews were conducted with different types of actors:

- 24<sup>4</sup> managers of school catering services, in charge of menu development and procurement choices, were interviewed.

<sup>2</sup> The scope of our fieldwork extends up to 2018; for this reason, the analysis of the national legal framework in France is focused on the law "Grenelle 1" and does not take into account the more recent law "Egalim", published in 2018. This new law is quite similar with "Grenelle 1" in the nature of the public policy instrument implemented, one major difference being that the thresholds are now mandatory and a little bit higher (the goal is to reach 20% of organic products and 50% of "sustainable" products in 2022). Future research could further explore the effects of this law on alternative procurement systems.

<sup>3</sup> Conselho Nacional de Segurança Alimentar e Nutricional.

- Two managers in two of the main French private catering companies, as some municipalities have opted for public service delegation.
- Five representatives of agricultural cooperatives were interviewed, in France and in Brazil, in order to understand how changes in public demand affect the agricultural community.
- Two members of agricultural advisory organizations in France (*Chambre d'agriculture* and *Groupement régional d'agriculture biologique*).

### 2.4.3. A qualitative approach through thematic content analysis

The purpose of this qualitative study is to examine whether these 21 cases shared common logics, regardless of their technical facilities, management methods and national contexts, in order to assess which of these commonalities could be interpreted as specific to metropolitan territories.

The interviews transcriptions were processed using thematic analysis. The first step was to list and categorize all the foodstuffs that the school food managers cited as alternative: types of products (raw or pre-processed fruits and vegetables; grocery products; dairy; cereals and legumes) and, when the information was available, geographical origin; types of certification or distinction (organic or local origin label, family farm grown); types of suppliers (individual farmers; cooperatives; wholesale retailers). Then, for each case, we traced back the process that led to introducing one type or another of alternative product, according to the explanation and arguments that our interviewees presented when asked "how did you manage to introduce alternative sustainable products in your menus?"

We then deepened the analysis by assessing each case according to the type of coordination between actors, ranking from weak to strong links, and to the territorial resources mobilized, according to the criteria of our conceptual framework (Section Conceptual framework: analytical tools to understand the reconfigurations of school food supply systems). In the results section (Section Insights from the school kitchen—a bumpy road to sustainable supply) of this paper, we chose to present in detail only four of the 21 cases, because of their emblematic characteristics that illustrate which factors explain the observed diversity or, on the contrary, the common patterns. The recurrent patterns in the procurement strategies that were identified comparing all 21 cases will be discussed in the final section (Section Discussion: the dominant trend behind local variety, the quiet logic of renewed agro-industrial system?).

<sup>4</sup> In 3 cases (São Bernardo do Campo, São Paulo, Co.Cli.Co.), two persons involved in the catering service were interviewed, hence a total of 24 interviews to investigate 21 cases.

### 3. Insights from the school kitchen—a bumpy road to sustainable supply

In this section, we focus on four of the 21 case studies, located at varying distance from the peri-urban farming areas. We aim to illustrate the concrete, day-to-day modalities of sustainable procurement systems and to highlight their relations with agricultural specialization or diversification dynamics. Each one was chosen for its capacity to illustrate notable local configurations and serves to test and validate the analytical grid we applied to scan all other case studies.

#### 3.1. A central kitchen in the northern suburbs of Paris: reproducing local specialization

The Inter-municipal syndicate for collective catering (*Syndicat intercommunal pour la restauration collective*, Syrec) (case n°1 on Figure 2) is a public structure launched in 2012 that prepares 12,000 school meals 5 days per week for three towns in the northern Parisian suburb. Gennevilliers, Saint-Ouen and Villepinte, the three founding municipalities, created the Syrec to address the political will of reducing the share of industrialized ready-to-use products. They managed to increase the share of raw produce by integrating a vegetable processing plant in the newly built central kitchen. Many pre-processing operations (cleaning, peeling, cutting) are carried out by machines in a semi-industrial way, which imposes homogeneous sizes and shapes for raw products. If the higher price of alternative produce limits the possibilities of cooking them more frequently, the irregular appearance of raw fruit and vegetables is therefore also seen as a problem.

According to our interviewee, the Syrec's purchasing policy gives priority to local products and short supply chains, whereas organic certification comes in second place. At the time of our fieldwork, wholesale food retailers played a key role in the procurement system—for both conventional and alternative products—. The relationship between the Syrec and its suppliers appeared rooted in conventional public market instruments: the municipality issues a call for tenders specifying technical and environmental criteria, one of which being a set proportion of local and organic products. After unsuccessful attempts to deal with wholesalers specializing in organic products, the Syrec decided to favor companies that offer, in addition to a conventional range, a guaranteed though limited array of organic or local products. Their ability to supply large volumes of standard products and to limit the risk of default justifies this choice. As for local products, they consist mainly of wheat and open field carrots, two productions already well incorporated in the specialized regional crop rotation system.

We therefore interpret this strategy to be fully embedded in a conventional food system, albeit showing some marginal adaptation to environmental demands. Here, direct relationships with the producers are seldom and not central to the purchasing policy. The coordination between the actors of the supply system is weak, relying mainly on the wholesalers and their own commercial interactions. Local products incorporated in school meals closely reflect the strong regional specialization of agricultural land.

#### 3.2. The 5th district of Paris: reproducing already-there diversity

The school catering service of the 5<sup>th</sup> district of Paris (case n°6 on Figure 2) stands out from the other structures in Île-de-France: it does not rely on a large central kitchen but on smaller kitchens located in each school (although none is equipped for raw vegetables processing). In addition, the purchasing policy successfully promotes organic food, as the ratio reaches 85% of all products, and our interviewees highlight their attachment to the territorial anchoring of the menus served to children. Detailed and strict tender specifications underpin this demanding purchasing policy. In addition, the selection procedure assigns a weight of 70% to environmental criteria against 30% to price—this ratio is reversed in many of the other 21 cases studied. In the case of organic meat and dairy products, the costliest foodstuff, in order to balance the costs, buyers reach lower prices per kilo by favoring larger packaging and purchasing whole carcasses. Under these rules, 50% of the foodstuffs come from Normandy and Picardie, both regions close to Paris, respectively to the West and to the North. However, the other half is purchased on the wholesale market, through the usual large retailing companies that offer a growing range of organic products.

This particular procurement system owes a great deal to one small company that covers half of the supply. Its manager finds and selects small, diversified, mostly organic farms, by activating her personal and professional networks. Such a case is emblematic of a system which values the relational proximity allowed by short food supply chains: to the supplier meets the farmers in person and interacts with them on a regular basis. The relational proximity with farmers and small-scale producers is showcased through the annual field trips organized for the school catering staff, town councilors, parents and teachers of the Paris 5<sup>th</sup> district schools.

Nevertheless, the sustainable short circuit component of the procurement system put in place in the 5<sup>th</sup> district mainly relies on farmers located in already-diversified areas. In Normandy, for example, the Perche area and the surroundings of the town of Caen stand out in the French scenery for their high level of diversification regarding respectively dairy products and vegetables. For the small dairy located in the Normandy region of Perche, the contract with the 5<sup>th</sup> district's school catering service was a turning point in structuring its activity of yogurts processing but it had little impact on the overall expansion of dairy cows extensive breeding systems. Hence, albeit relying on strong coordination between actors and demanding purchasing policy, this procurement system doesn't seem to affect regional specialization in Île-de-France.

#### 3.3. Vargem Grande Paulista: reproducing distant regional specialization

The municipality of Vargem Grande Paulista (case n°7 on Figure 3) is located to the west of the Paulistan metropolis, in what can be considered its green belt. However, to reach the 30% threshold of direct purchases from family farming, the school catering service resorts to long life fruit juices: mainly grape juice, produced 1,000 km to the south, in the State of Rio Grande do Sul,

and orange juice, produced in the State of São Paulo, in both cases by big family farmers cooperatives. These are precisely the main specialized production areas for each item.

According to the saying of our interviewee, there is no reliable family farmers within the municipality limits and resorting to fresh vegetable from small family farmers outside Vargem Grande would be costly and logistically complicated. As a result, the alternative segment of their procurement system is almost identical to their conventional strategies, with no coordination with agricultural sectors. The only change in purchasing procedures is the obligation, set by the 2009 PNAE law, to publish an annual “public call” (*chamada pública*) in order to acquire these specific products from family farming. The main difference with the usual tender procedure is that the price is set beforehand, through a market research carried out locally by municipal services. However, the school catering service must justify before the municipal School Food Council this choice to restrict sustainable procurement to fruit juice. Their diagnosis of the situation of local family farming is confirmed by an agronomist from the municipality, who vouches for them.

### 3.4. Mogi-das-Cruzes: supporting local diversification in the long run (when geographical proximity is not sufficient)

As Vargem Grande Paulista, Mogi-das-Cruzes (case n°4 on Figure 3) is also located at the outskirts of the metropolis, but on the East part. Thirty-seven percentage of its surface is covered by agricultural land, mainly fruit and vegetable production and is responsible for 35% of the agricultural production of the Metropolitan Region of São Paulo (Escolhas and Urbem, 2020). However, to comply with the 2009 PNAE law, the school catering service resorted, at first, to non-perishable products (rice, powder milk, long life juice) supplied by large, already-established family farming cooperatives from the Southern Region<sup>5</sup> and the State of São Paulo. This type of products did not require making any changes in the storing, transportation and cooking processes. However, the head nutritionist was not satisfied with this situation<sup>6</sup> and public calls for fresh vegetables were issued to complement the non-perishable products purchases with locally grown produce. However, for several years in a row, they remained unanswered.

In 2016, the school catering service's efforts started to unwind as the new director of the municipal department of agriculture, an agronomist with previous field experience as agricultural adviser, played an important part in strengthening the coordination among local actors. He and his team focused on one particular

group of farmers located on an *assentamento*, a rural settlement implemented by a land reform public program, that struggled to access markets. The department of agriculture's team acted as intermediaries, explaining the demands of the school catering service. Simultaneously, they helped mapping local production, allowing to adjust the menus and the public purchase process to local realities. One outcome of this coordination was the construction of a vegetable processing plant in the *assentamento*.

This case illustrates how mere geographical proximity is not sufficient. Creating a local procurement system requires, among other things, for the actors involved to adopt a transversal perspective, not limited to one sector only. Typically, the nutritionists need to discover the agricultural world; farmers and agronomists need to understand how school catering works, its leeway and constraints. In the case of Mogi-das-Cruzes, geographical proximity had to be activated by tight intersectoral networks in order to boost local procurement.

## 4. Discussion: the dominant trend behind local variety, the quiet logic of renewed agro-industrial system?

As for the four ones presented above, we analyzed each of our 21 cases following the same method: identifying the networks of actors and the types of coordination, taken as the main driver that can lead the alternative procurement system to have a significant environmental impact on regional crop diversification. The comparison of the 21 cases led us to identify recurring patterns behind the great variety of national and local configurations.

### 4.1. Evolution without conversion: a trans-national pattern

In both countries, school catering services are under many constraints (Filippini et al., 2018). They need to find a balance between flexibility—needed to integrate new alternative suppliers, often less structured—and the guarantee of stable supplies. They try to limit or at least control the extent of the changes induced by an alternative supply. This is why their alternative supply strategy often consists in combining supply chains considered as safer (controlled prices, guaranteed and standardized supply) with alternative, local procurement systems that present more risks and require adjustments on different time scales. In the short term, supply failures and caliber problems force unpredicted reorganization: changing the daily menu, reallocating the work force on one task (e.g., manual preparation of ripe fruits that are therefore not compatible with standardized machine processing). In the long term, introducing new products may require developing new recipes and new ways of cooking, as well as investing in new equipment.

To secure their procurement, the municipalities call on alternative products that demand minimal adaptation in the school catering service's routine. In the Brazilian cases, these types of alternative systems are shaped by large consolidated family farming cooperatives, as the 2009 PNAE law explicitly prohibits commercial

5 The following States compose the Southern Region (*Região Sul*): Paraná (that borders São Paulo to the south), Santa Catarina and Rio Grande do Sul (that borders Uruguay).

6 As did several of our interviewees expose, her understanding was also reinforced by the trainings offered by the Collaborating Centers for School Food and Nutrition (*Centro colaborador em alimentação e nutrição escolar*, CECANE), training centers dedicated to school food and nutrition financed by the National Fund for Educational Development (FNDE) in partnership with federal universities.

middlemen for this part of the purchases<sup>7</sup>. They provide either non-perishable everyday products (rice, powdered milk, dried beans, flour, oil) or high value-added products (fruit juice). Turning to these products allow to reach the 30% threshold of direct purchases from family farming without adding any real complexity to the procurement system already in place and anchored in the mainstream agro-industrial food system. These commodities generally come from specialized production regions: grape juice in the State of Rio Grande do Sul; orange juice in the north-western area of the São Paulo State; rice and powdered milk in the Southern Region as a whole. Large cooperatives, especially in Rio Grande do Sul, were already structured and well established in commercial circuits before the 2009 PNAE law. They were therefore precocious in providing products that met the criteria of direct purchase from family farms, without school catering services having to undertake major changes in their operating methods.

In the French case, contrary to what we observed in Brazil, private wholesalers and catering companies are adapting their offer in order to meet with the demand for alternative products in the public procurement market. In many cases, the suppliers for alternative products are the same wholesalers who provide conventional goods. These wholesalers offer not only certified organic products, but also local products, without indicating the exact origin but guaranteeing a supply radius limited to 200 or 300 km. Every once in a while, they make proposals for certain local produce, at the best quality-price ratio, often during the peak seasons for fruits (apple and pears in Île-de-France) and vegetables (mainly carrots). Since there is no official label, the “locally-grown” guarantee relies to the trust placed in the suppliers; the school catering managers depend on the information provided by the latter.

Therefore, we observed in both countries a predominant situation where the networks remain highly intermediated and coordination between school catering services and agricultural sectors is weak (typically, nutritionists develop menus without prior consultation with the agricultural sector). In addition, our results did not indicate that the rural/urban profile of the environment has significant influence on the school food services’ capacity to purchase from diversified local farmers. Cases like Vargem Grande Paulista (a green belt municipality reproducing distant regional specialization, see above) are exemplary of the fact that geographical proximity to farmers is not sufficient to insure their local products are present in the menus.

The similar patterns that we observed in the two countries led us to design an ideal type, based on stylized facts (Weber, 1965; Morange and Schmoll, 2016), i.e., empirical regularities (Helfat, 2007). An ideal type is a conceptual tool. It helps us to picture the common predominant logic of renewed agro-industrial system that is outcropping more or less completely in all cases and to assess to what degree each actually existing case deviates from it.

## 4.2. Characteristics of an ideal-typical procurement system: the renewed agro-industrial system

Within the ideal typical renewed agro-industrial system, the alternative supply system relies on the following network of actors: local town councilors or parents who request higher quality products; municipal school catering managers; and their suppliers, already-in-place stakeholders in the conventional food markets, whether it is food distribution companies (wholesalers), large cooperatives previously structured or private catering companies (when the service is outsourced).

Given these bases, the ideal-typical sequence of operations runs as follows. The municipal authorities elaborate the menus according to nutritional standards. The school food services’ procurement strategies favor certified organic or family farming produce. The latter are occasionally included in school meals in order to reach the percentage of sustainable products set by law. They then set down the tender specifications and launch the purchasing procedure, without prior consultation with the agricultural sector. Thus, it is those consolidated structures that respond to the calls for tenders (or public calls, in Brazil). As a consequence, coordination between the actors remains weak and each sector focuses on a limited scope of skills and tasks. Local authorities rely on previously structured agri-food networks, only adding the requirement for a share of alternative products.

The commercial intermediaries endorse the responsibility of certifying the products’ “alternative” characteristics: organic, family farming and other labels of quality. Wholesalers or representatives of large family farming cooperatives can vouch for the geographical origin of certain products to local school catering managers, these having no direct contact with producers, no direct knowledge of the production and transportation conditions. The municipal school catering service restricts its action to formulation of menus, preparation of tender specifications, purchasing procedures and monitoring of contracts.

The strength of this agro-industrial logic relies on the efficiency of the actors in the existing conventional supply chains, who guarantee regularity and standardized products. As pointed out by literature dedicated to the “mid-tier food supply chains” (Chazoule et al., 2022), the commercial intermediaries of the existing agro-industrial supply chain play a crucial role in strengthening regional procurement systems (Izumi et al., 2010; Brives et al., 2017; Chazoule et al., 2022). This concept, developed by a team of French researchers, mobilize the notion of “agriculture of the middle” that emerged in northern-American literature (Izumi et al., 2010) to assess how the growth of alternative food chains and the hybridization empirically observed between agro-industrial systems and short food supply chains impact its potential to transform the relationships between producers and consumers. In this framework, the transformative potential of “agriculture of the middle” relies on three main characteristics (Lev and Stevenson, 2011): “regional” middle size markets; differentiated products; and forms of organization based on values shared by all players, including consumers. Several aspects of the renewed agro-industrial system ideal-type indicate that the shift from conventional sector is not sufficient to match these requirements.

<sup>7</sup> That is what *direct* purchases implies; this disposition was source of debates when the law was examined by the Brazilian Federal Senate (Schottz, 2017; Retière, 2022).

This ideal type represents a supply reorganization at lower cost, since the share of differentiated products is a minor proportion. No structural changes are undertaken in the kitchens. Formal market-oriented mechanisms shape the relations between school catering and the agri-food sector. Tender (or public calls) specifications and contracts with suppliers are used to control their compliance to the public-school catering services' demands regarding the share of alternative products (applying penalties in cases when the contract is not honored). Relationships with suppliers remain similar as the conventional agro-industrial system, based mainly on commercial aspects. Resorting on wholesalers or large cooperatives offers the advantage of guaranteeing large volumes, standardization of products and regularity of deliveries. It also offers the possibility of rapid exchange of products in case of defective supply.

Given these characteristics, the renewed agro-industrial system strongly mitigates the transformative power of local procurement, especially its capacity to trigger crop diversification. The results of our case studies lead to the conclusion that this ideal type does not call into question the territorial dynamics of productive specialization. As shown, large Brazilian family farmers cooperatives, as well as French conventional wholesalers, well anchored in regional agricultural specialization, easily meet the criteria set by the school catering sector.

### 4.3. Hybridization between renewed agro-industrial logics and more locally anchored, diversified agri-food system

The fact that all 21 case studies relate in various degree to the renewed agro-industrial ideal type, confirms the role of regionally-based food distributors (Izumi et al., 2010) and figures of "food systems of the middle" (Chazoule et al., 2022; Mazin, 2022) in the reconfiguration of school food supply systems enhanced by social demands for sustainable procurement. However, we documented that 9 of our 10 Brazilian cases (Mogi-das-Cruzes for example) and 7 of our 11 French cases (the 5<sup>th</sup> district of Paris for example), deviate from the renewed agro-industrial ideal-type. They combine conventional supply logics with the emergence of new networks structured on a regional or municipal scale, indicating possible hybridizations with locally anchored agri-food system.

This trend can be observed, for instance, in our Île-de-France cases. From 2010 onwards, several large intermunicipal school catering structures<sup>8</sup> have been involved in the organization of meetings with local farmers and agricultural advisory actors in order to establish an inventory of regional production in Île-de-France. The consultation, which lasted several years, led to the creation, in 2014, of a regional organic farming cooperative (Coop Bio d'Île-de-France). Its mission is to market organic and local products to collective catering structures and specialized organic retail stores. This process reflects strong coordination with alternative agricultural structures in Île-de-France, at a regional

<sup>8</sup> For instance, the school food services of Le Blanc Mesnil and Pantin (Sivuresc, case n°2 of Figure 2) and of Colombes and Clichy (case n°5); for further details, see Retière (2022).

level. The Coop Bio d'Île-de-France is regularly pointed out as the main player in this field (Mazin, 2022).

In Brazil, similar configurations, i.e., emergence of new locally anchored actors in the alternative procurement system, are significantly more frequent in the Paulistan context of our study, compared with the Île-de-France cases. One example is that of the municipality of São Paulo (case n°10 in Figure 3), illustrating strategies that combine different scales. They started in 2013 by acquiring non-perishable products, from large cooperatives. A special team within the school catering department was formed *ad hoc*: two nutritionists and an agronomist are responsible for identifying family farming products, coordinating with the nutritionist who elaborates the menus, and harmonizing school catering requirements with the constraints and particularities of family farmers. Collaborations with public and para-agricultural organizations (trade unions, associations, public agricultural advisory structures) facilitate and increase contacts with family farming organizations at regional scale. This strategy is combined with efforts to include more fresh and local products. To this purpose, the municipality supports a group of producers in the south of the municipality (in a district called Parelheiros), for example, adapting the local urban plan so that they can be recognized as family farmers, provisioning them with a warehouse and a truck; supporting the formalization of the cooperative. Although slow and complicated (Santos and Moruzzi Marques, 2021), the process is in line with a more territorialized procurement strategy, at local scale.

## 5. Conclusion

Studies indicate that small to middle range cities "are particularly interesting for local food system transformation since they have the possibility of bringing together all relevant actors involved in the food system" (Baldy, 2019) but that the transformative impact can remain weak because of the low amount of land concerned by this kind of local food initiatives (Baysse-Lainé et al., 2018). In this article, we assessed the capacity of two major metropolitan school food providing systems to reach the expectations raised by larger cities commitment in urban food strategies (Morgan, 2009).

Given our main findings, we share only partially the enthusiasm that prevails in most discourses and in recent reviews (Filippini et al., 2018; Long et al., 2021; Molin et al., 2021; Galloway et al., 2022; Xie et al., 2022) which frequently omit to assess the links between school food relocalization and regional crop and farm diversification. Certainly, school food catering actors managed to channel a higher share of sustainable products to meet legal requirements, opening significant market opportunities. On the other hand, day-to-day procurement systems remain embedded in the agro-industrial patterns and have no systematic impacts on regional crop diversification. In the worst-case scenario, it can even reproduce and support already existing specialization.

Nevertheless, the many cases that deviate from the "dominant alternative" trend (i.e., the renewed agro-industrial ideal-type) in the Brazilian context prompts us to go beyond this assessment and investigate further how national frameworks can mitigate the power of agro-industrial driving forces by setting the operational

space within which actors unfold the day-to-day government of urban food provisioning.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

## Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

## Funding

The doctoral research benefited from a 3-years-grant from the Brazilian Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPQ) and fieldwork missions in 2017 and 2018 were funded by Université Paris 8's Doctoral School of Social Sciences.

## Acknowledgments

The authors wish to thank Nayla Almeida and Samuel de Mello Pinto, member of the Agremal research group of ESALQ/USP,

## References

- Ammirato, S., Felicetti, A. M., Ferrara, M., Raso, C., and Violi, A. (2021). Collaborative organization models for sustainable development in the agri-food sector. *Sustainability*. 13, 2301. doi: 10.3390/su13042301
- Ansaloni, M., and Allaire, G. (2016). La grande transformation des politiques agricoles anglaise et française : une sociologie de l'hégémonie économique. *Revue de la régulation. Capitalisme, institutions, pouvoirs*. 20. doi: 10.4000/regulation.12168
- Baldy, J. (2019). Framing a sustainable local food system—how smaller cities in Southern Germany are facing a new policy issue. *Sustainability*. 11, 1712. doi: 10.3390/su11061712
- Baysse-Lainé, A., Perrin, C., and Delfosse, C. (2018). Le nouvel intérêt des villes intermédiaires pour les terres agricoles : actions foncières et relocalisation alimentaire. *Géocarrefour*. 92. doi: 10.4000/geocarrefour.10417
- Billet, H. (2017). Les défis de l'agriculture francilienne. In *Une métropole à ma table. L'Île-de-France face aux défis alimentaires*, par IAU Île-de-France, 119-24. Les Cahiers de l'IAU Île-de-France 173.
- Brives, H., Chazoule, C., Fleury, P., and Vandenbroucke, P. (2017). La notion d'agriculture du milieu est-elle opérante pour l'analyse de l'agriculture de Rhône-Alpes Économie rurale. *Agricultures, alimentations, territoires*. 357-358, 41-56. doi: 10.4000/economierurale.5109
- Brunori, G. (2007). Local food and alternative food networks: a communication perspective. *Anthropology of Food*. doi: 10.4000/aof.430
- Buttel, F. (2006). "Sustaining the unsustainable: agro-food systems and environment in the modern world." in *Handbook of Rural Studies*, par Paul Cloke, Patrick Mooney, et Terry Marsden, 213-29. Thousand Oaks: Sage Publications Ltd. Available online at: <https://www.torrossa.com/en/resources/an/4912075>
- Campagne, P., and Pecqueur, B. (2014). *Le développement territorial. Une réponse émergente à la mondialisation*. Paris: C.L. Mayer.
- CEAGESP (2019). *CEAGESP comemora 50 anos como importante distribuidor de alimentos*. CEAGESP. Available online at: <https://ceagesp.gov.br/comunicacao/noticias/ceagesp-comemora-50-anos-como-importante-distribuidor-de-alimentos/>
- Charrier, F., Jean-Marc, M., Magrini, M.-B., Messean, A., Charlier, A., Fares, M., et al. (2014). *La diversification des cultures : lever les obstacles agronomiques et économiques, janvier*.
- Chazoule, C., Velly, R. L., Désolé, M., Fournier, S., Joyet, L., Molegnana, F., et al. (2022). PSDR4 SYAM-A la recherche des Systèmes alimentaires du milieu. *Innovations Agronomiques*. 86, 391.

who participated in the surveys in São Paulo, as well as Rafael Chiodi who shared the interviews carried out in Vale do Ribeira. The doctoral research behind this paper was carried out by MR under the joint supervision of Nathalie Lemarchand, SD (Université Paris 8, Vincennes-Saint-Denis, France), and Paulo Eduardo Moruzzi Marques (Universidade de São Paulo, Brazil). The thesis was defended on June, 10<sup>th</sup> 2022, under the title School feeding supply policies in Brazil and France: the transition of agri-food systems challenged by large cities. The doctoral research benefitted from the support of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPQ) which financed the first 3 years of the doctorate, as well as the Doctoral School in Social Sciences of the University of Paris 8 that granted fundings for fieldwork and participation to congresses. The authors are also grateful for the insightful comments offered by the peer reviewers at *Frontiers in Sustainable Food Systems*. The errors that inevitably remain are entirely the authors' own responsibility.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

- Darly, S. (2012). La reterritorialisation de l'agriculture, effet collatéral des conflits d'usage. Le cas francilien. *Économie rurale. Agricultures, alimentations, territoires*. 332, 31–46. doi: 10.4000/economierurale.3622
- Darly, S., and Aubry, C. (2014). La demande en produits locaux de la restauration collective: quels liens avec l'offre de proximité dans une région d'agriculture industrielle? Le cas de l'Île-de-France. *Géocarrefour*. 89, 145–157. doi: 10.3917/geoc.891.0145
- Darolt, M. (2012). *Conexão Ecológica: novas relações entre produtores e consumidores*. Londrina: IAPAR.
- Delaporte, C., and Brajon, D. (2017). Le système alimentaire francilien décrypté. In *Une métropole à ma table. L'Île-de-France face aux défis alimentaires.*, par IAU Île-de-France, 74–78. Les Cahiers de l'IAU Île-de-France 173.
- DelGrossi, M., Florido, A. C. S., and Rodrigues, L. F. P. (2019). *Agricultura familiar no censo agropecuario - Principais causas de exclusão da agricultura familiar nos algoritmos*.
- Deverre, C., and Lamine, C. (2010). Les systèmes agroalimentaires alternatifs. Une revue de travaux anglophones en sciences sociales. *Économie rurale. Agricultures, alimentations, territoires*. 317, 57–73. doi: 10.4000/economierurale.2676
- DRIEA Île-de-France (2019). Les établissements du commerce de gros alimentaire et agricole en Île-de-France. Le MIN de Rungis et le centre-ouest parisien, des localisations clés aux fonctions différentes. Direction Régionale et Interdépartementale de l'Équipement et de l'Aménagement. Available online at: <http://www.driea.ile-de-france.developpement-durable.gouv.fr/IMG/pdf/v3.pdf>
- Escolhas, I., and Urbeim (2020). *Mais perto do que se imagina: os desafios da produção de alimentos na metrópole de São Paulo*. São Paulo. Available online at: <https://agriculturametropole.escolhas.org/>
- Filippini, R., Noni, I. D., Corsi, S., Spigarolo, R., and Bocchi, S. (2018). Sustainable school food procurement: what factors do affect the introduction and the increase of organic food? *Food Policy*. 76, 109–119. doi: 10.1016/j.foodpol.2018.03.011
- Galloway, C., Devine, S., Parison, J., and Jones, H.-A. (2022). Procurement from local producers for food service in primary and secondary school settings: a scoping review. *Health Promot J Austr.* doi: 10.1002/hpja.618
- Goodman, D. (1997). World-scale processes and agro-food systems: critique and research needs. *Rev. Int. Polit. Econ.* 4, 663–687. doi: 10.1080/09672299708565787
- Goodman, D. (2017). *Agro-Food Studies in the 'Age of Ecology': Nature, Corporeality, Bio-Politics*. In *The Rural*.
- Grisa, C., Kato, K., and Zimmermann, S. A. (2017). Capítulo III – O rural nas políticas públicas do Brasil contemporâneo. In *Tipologia Regionalizada dos Espaços Rurais Brasileiros: Implicações no Marco Jurídico e nas Políticas Públicas*, par Carlos Miranda, 22:339–483. Desenvolvimento Rural Sustentável. Brasília: Instituto Interamericano de Cooperação para a Agricultura (IICA). Available online at: [https://repositorio.iica.int/bitstream/handle/11324/3042/BVE17068993p.pdf?sessionid=\\$3B31A2DC8F9A80B059FCC46272B321F9?sequence=\\$3](https://repositorio.iica.int/bitstream/handle/11324/3042/BVE17068993p.pdf?sessionid=$3B31A2DC8F9A80B059FCC46272B321F9?sequence=$3)
- Halpern, C., Lascoumes, P., and Galès, P. L. (2014). Introduction / L'instrumentation et ses effets débats et mises en perspective théoriques. In *L'instrumentation de l'action publique*, 15–62. Académique. Paris: Presses de Sciences Po. Available online at: [https://www.cairn.info/l-il-instrumentation-de-l-action-publique/\\$-9782724614565-p-15.htm](https://www.cairn.info/l-il-instrumentation-de-l-action-publique/$-9782724614565-p-15.htm)
- Helfat, C. E. (2007). Stylized facts, empirical research and theory development in management. *Strateg. Organ.* 5, 185–192. doi: 10.1177/1476127007077559
- IAU Île-de-France (2017). *Une métropole à ma table. L'Île-de-France face aux défis alimentaires*. Les Cahiers de l'IAU Île-de-France, 173.
- Ilbery, B., and Maye, D. (2006). Retailing local food in the scottish–english borders: a supply chain perspective. *Geoforum*. 37, 352–367. doi: 10.1016/j.geoforum.2005.09.003
- Institut Paris Région (2020). La grande histoire des légumes et de leurs terroirs en Île-de-France. Note rapide de l'Institut Paris Région.
- Izumi, B., Wright, D., and Hamm, M. W. (2010). Farm to school programs: exploring the role of regionally-based food distributors in alternative agrifood networks. *Agric. Hum. Values*. 27, 335–350. doi: 10.1007/s10460-009-9221-x
- Kebir, L. (2012). *Les cantines bio : que reste-t-il de l'esprit pionnier Métropolitiques, février*. Available online at: <http://www.metropolitiques.eu/Les-cantines-bio-que-reste-t-il-de.html>
- Lamine, C. (2005). Settling shared uncertainties: local partnerships between producers and consumers. *Sociologia ruralis*. 45, 324–345. doi: 10.1111/j.1467-9523.2005.00308.x
- Lamine, C., Darolt, M., and Brandenburg, A. (2012). The civic and social dimensions of food production and distribution in alternative food networks in France and Southern Brazil. *Int. J. Sociol. Agric. Food*. 19, 3, 383–401. doi: 10.48416/ijfaf.v19i3.211
- Lamine, C., Garçon, L., and Brunori, G. (2019). Territorial agrifood systems: a Franco-Italian contribution to the debates over alternative food networks in rural areas. *J. Rural Stud*. 68, 159–170. doi: 10.1016/j.jrurstud.2018.11.007
- Lascoumes, P., and Le Galès, P. (2012). *Sociologie de l'action publique : Domaines et approches*. 2ème. Paris: Armand Colin.
- Le Velly, R. (2017). *Sociologie des systèmes alimentaires alternatifs: Une promesse de différence*. Presses des Mines.
- Le Velly, R., and Bréchet, J.-P. (2011). Le marché comme rencontre d'activités de régulation: initiatives et innovations dans l'approvisionnement bio et local de la restauration collective. *Sociologie du Travail*. 53, 478–492. doi: 10.1016/j.socotra.2011.08.009
- Lev, L., and Stevenson, G. W. (2011). Acting collectively to develop midscale food value chains. *Journal of Agriculture, Food Systems, and Community Development*. 1, 119–128. doi: 10.5304/jafscd.2011.014.014
- Long, A. B., Jablonski, B. B. R., Costanigro, M., and Frasier, W. M. (2021). The impact of state farm to school procurement incentives on school purchasing decisions. *J. Sch. Health*. 91, 418–427. doi: 10.1111/josh.13013
- Magrini, M.-B., Anton, M., Cholez, C., Corre-Hellou, G., Duc, G., Jeuffroy, M.-H., et al. (2016). Why are grain-legumes rarely present in cropping systems despite their environmental and nutritional benefits? analyzing lock-in in the French agrifood system. *Ecol. Econ*. 126, 152–162. doi: 10.1016/j.ecolecon.2016.03.024
- Marty, P. (2014). De la restauration scolaire à l'intégration de l'agriculture dans le projet de territoire: vers une ville acteur normatif de la question agricole?. *Géocarrefour*. 89, 135–143. doi: 10.3917/geoc.891.0135
- Mazin, A. (2022). *Commande publique responsable en restauration scolaire : facteur de transition écologique du territoire* Thèse de doctorat en architecture, aménagement de l'espace, Université Paris-Saclay. Available online at: <https://theses.hal.science/tel-03884842>
- McMichael, P. (1994). "Global restructuring: some lines of inquiry." in: *The Global Restructuring of Agro-Food Systems*. Ithaca and London: Cornell University Press, 277–300. doi: 10.7591/9781501736032-015
- Meynard, J.-M., Jeuffroy, M.-H., Bail, M. L., Lefèvre, A., Magrini, M.-B., and Michon, C. (2017). Designing coupled innovations for the sustainability transition of agrifood systems. *Agricultural Systems*. 157, 330–339. doi: 10.1016/j.agsy.2016.08.002
- Meynard, J.-M., Messéan, A., Charlier, A., Charrier, F., Fares, M., Bail, M. L., et al. (2013). Freins et leviers à la diversification des cultures. Etude au niveau des exploitations agricoles et des filières. INRA. Available online at: [https://www6.inrae.fr/basc/content/download/3661/36382/version/1/file/6.Diversification\\_cultures\\_J-M.Meynard\\_231115.pdf](https://www6.inrae.fr/basc/content/download/3661/36382/version/1/file/6.Diversification_cultures_J-M.Meynard_231115.pdf)
- Michel-Villarreal, R., Hingley, M., Canavari, M., and Bregoli, I. (2019). Sustainability in alternative food networks: a systematic literature review. *Sustainability*. 11, 859. doi: 10.3390/su11030859
- Molin, E., Martin, M., and Björklund, A. (2021). Addressing sustainability within public procurement of food: a systematic literature review. *Sustainability*. 13, 13395. doi: 10.3390/su132313395
- Morange, M., and Schmoll, C. (2016). *Les outils qualitatifs en géographie. Méthodes et applications*. Coursus. Paris: Armand Colin.
- Morgan, K. (2009). Feeding the city: the challenge of urban food planning. *Int. Plan. Stud.* 14, 341–348. doi: 10.1080/13563471003642852
- Morgan, K. (2013). The rise of urban food planning. *Int. Plan. Stud.* 18, 1–4. doi: 10.1080/13563475.2012.752189
- Morgan, K., Marsden, T., and Murdoch, J. (2006). "3. Geographies of agri-food." in: *Worlds of food. Place, Power, and Provenance in the food chain*, par Kevin Morgan, Terry Marsden, et Jonathan Murdoch. Oxford Geographical and Environmental studies. Oxford: Oxford University Press, 53–88.
- Morgan, K., and Sonnino, R. (2010a). *The School Food Revolution*.
- Morgan, K., and Sonnino, R. (2010b). The urban foodscape: world cities and the new food equation. *Camb. J. Reg. Econ. Soc.* 3, 209–224. doi: 10.1093/cjres/rsq007
- Naves, P. (2016). L'encadrement des circuits courts. Du secteur agricole aux territoires?. *Économie rurale*. 5, 3–19. doi: 10.4000/economierurale.4978
- Peixinho, A. M. L. (2011). *Um resgate histórico do Programa Nacional de Alimentação Escolar-PNAE*. Dissertação de Mestrado Profissional em Ensino em Ciências da Saúde, São Paulo: Universidade Federal de São Paulo.
- Peters, C. J., Bills, N. L., Wilkins, J. L., and Fick, G. W. (2009). Foodshed analysis and its relevance to sustainability. *Renew. Agric. Food Syst.* 24, 1–7. doi: 10.1017/S1742170508002433
- Proust, A. (2020). Se nourrir par l'agriculture périurbaine à São Paulo. *EchoGéo*. 54, 54. doi: 10.4000/echogeo.20585
- Renting, H., Marsden, T. K., and Banks, J. (2003). Understanding alternative food networks: exploring the role of short food supply chains in rural development. *Environ. Plan. A*. 35, 393–411. doi: 10.1068/a3510
- Retière, M. (2022). *Politiques d'approvisionnement de La Restauration Scolaire Au Brésil et En France: La Transition Écologique à l'épreuve Des Métropoles*. Thèse de doctorat en géographie et en écologie appliquée (co-tutelle), Saint Denis: Université Paris 8 / Universidade de São Paulo.
- Rossi, A., Bui, S., and Marsden, T. (2019). Redefining power relations in agrifood systems. *J. Rural Stud*. 68, 147–158. doi: 10.1016/j.jrurstud.2019.01.002
- Roudart, L. (2002). L'alimentation dans le monde et les politiques publiques de lutte contre la faim. *Mondes en développement*. 117, 9. doi: 10.3917/med.117.0009

- Santos, M. M., and Moruzzi Marques, P. E. (2021). Locavorismo: uma análise de suas contradições à luz de experiências de agricultura urbana em São Paulo. *Estudos Avançados*. 35, 257–268. doi: 10.1590/s0103-4014.2021.35101.016
- Schottz, V. (2017). *Programa nacional de alimentação escolar (PNAE): controvérsias sobre os instrumentos de compra de alimentos produzidos pela agricultura familiar*. Tese (Doutorado de Ciências Sociais em Desenvolvimento, Agricultura e Sociedade), Rio de Janeiro: Universidade Federal Rural do Rio de Janeiro.
- Siliprandi, E., and Belik, W. (2012). “A agricultura familiar e o atendimento a demanda institucional das grandes cidades.” in *Projeto Nutre SP: análise da inclusão da agricultura familiar na alimentação escolar no estado de São Paulo*, par Maria Amélia Jundurian Cora et Walter Belik, Instituto Via Pública. São Paulo, 61-76.
- Sonnino, R. (2016). The new geography of food security: exploring the potential of urban food strategies. *Geogr. J* 0.182, 190–200. doi: 10.1111/geoj.12129
- Verhaegen, E. (2012). *Les paysanneries et territoires ruraux face à la globalisation*. Thèse en Sciences sociales et politiques, Louvain-la-Neuve: Université catholique de Louvain.
- Weber, M. (1965). *Essais sur la théorie de la science*. Recherche en sciences humaines 19. Paris: Plon.
- WFP (2023). *State of School Feeding Worldwide 2022*. Rome: World Food Programme.
- Xie, J. Z., Demmler, K. M., Trevenen-Jones, A., and Brownell, K. D. (2022). Urban public food procurement in kiambu and machakos counties as a driver of food and nutrition security and sustainability: a literature review and case studies. *Sustainability*. 14, 3341. doi: 10.3390/su14063341