CHAPTER ONE

PLANNING THE URBAN FOOD SYSTEM OF THE LISBON METROPOLITAN AREA IN PORTUGAL: A CONCEPTUAL FRAMEWORK

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Abstract

The current global crisis and the acknowledgment that in coming decades the world population will be predominantly urban brings about new necessities and demands for innovative approaches to the planning of food systems. An urgent need arises to identify the most efficient and consistent ways of dealing with problems concerning economic and energy efficiency, environmental quality, food security, job creation, and urban development.

In the past few years, international political and scientific agendas and strategies for food security in metropolitan areas highlight the need to re-localize production–consumption systems through shorter, more efficient supply chains, as a means of promoting sustainable urban development via place-based approaches. The provision of efficient responses to environmental, economic, and social concerns, emerging in a context of complex global change, needs to be tackled at a local and regional level.

The study of urban food systems becomes fundamental for an integrated approach to these internationally set priorities. However, this issue has yet to enter on either of the Portuguese political or academic agendas. In Portugal, the structural changes that occurred in the food system in the last decades reflect an increased socioeconomic

impoverishment of the countryside vis-à-vis urban areas. Consequently, there are deeper inequalities in terms of territorial cohesion.

Moreover, in the Lisbon Metropolitan Area (LMA), where a third of the Portuguese population lives, utilized agricultural area represents 37 percent of the territory, a figure which by itself justifies the need to adopt a strategic vision for the LMA's food system planning.

This paper will give insight into the conceptual definition of the functional region as the area where the LMA's food system might operate, providing orientation to land-use management and strategic planning that should be able to promote the re-localization of the food system in a sustainable way. The characterization of the current LMA food system is seen as a starting point for understanding how to develop a resilient urban food system based on adequate spatial planning concepts and tools. This paper seeks to discuss a feasible conceptual framework for the design of a sustainable solution to feed the Lisbon metropolis, while simultaneously promoting its economic vitality, environmental quality, spatial justice, and cultural identity.

Keywords: Urban food system, Urban food planning, Functional Region, Lisbon Metropolitan Area, Portugal.

Introduction

The current global crisis and the acknowledgment that, in coming decades, the world population will keep growing and will be predominantly urban, brings about new necessities and demands for innovative approaches to the planning of food systems. Furthermore, changes in food diets, increasing food consumption, and recent rises in food prices are putting food security at the center of the political agenda and, at the same time, highlighting the inefficiency of how we handle food production, distribution, and consumption (Godfray et al. 2010). An urgent need arises to identify the most efficient and consistent ways of dealing with problems concerning economic and energy efficiency, environmental quality, job creation, and urban development. Of even greater concern is the incidence of food-related chronic diseases such as obesity and diabetes; they are leading causes of death in Europe, and there is evidence that economic vulnerability and problems of obesity and malnutrition both coexist with food insecurity, seen as difficult access to food or to some types of food. These specific characteristics of food-related disease

emphasize the need for inter-sectoral thought and strategy in the medium to long term (Moragues et al. 2013).

Even if Europe does not face an immediate or pressing endangerment of food security compared to other regions in the world, the development of European food policy has been inextricably linked with the food production aspects of the European Union's Common Agricultural Policy (CAP), and more recently with health policies and social aid programs. The coming CAP (2014–2020) (European Commission 2013b) is thus a crucial opportunity to establish a holistic vision for the three main challenges that have been identified—economic, environmental, and territorial. Economic problems include food security and globalization, a declining rate of growth in productivity, price volatility, pressures on production costs due to high input prices, and the deteriorating position of farmers in the food supply chain; environmental concerns relate to energy efficiency, soil and water quality, threats to habitats and biodiversity, and climate change (UNCCD 2012); territorial issues arise where rural areas are faced with demographic, economic, and social risks, including the depopulation and relocation of businesses that co-occur with worldwide mega-urbanization trends (UNFPA 2007). Due to the nature of territorial cohesion, policy should also include agro-food provisions (Forster and Getz-Escudero 2014).

In the past few years, according to international political and scientific agendas, strategies for food security in metropolitan areas highlight the need to re-localize production–consumption systems through shorter, more efficient supply chains, as a means of promoting sustainable urban development via place-based approaches. The provision of efficient responses to environmental, economic, and social concerns, emerging in a context of complex global change, needs to be tackled at a local and regional level.

The study of urban food systems becomes fundamental for an integrated approach to these internationally set priorities. However, this issue has yet to enter on either of the Portuguese political or academic agendas. The Lisbon Metropolitan Area (LMA), where a third of the Portuguese population lives and 37 percent of whose territory is represented by utilized agricultural area, is considered as a case study for relating the results of the analysis and diagnosis of its urban food system and the conceptual framework for furthering the strategic planning process.

General Conceptual Framework

Over the last decades, radical change in the global food market, supported by long-distance transportation systems, refrigeration technology, and industrial food processing, has shifted the ways in which urbanites relate with food. They either take it for granted or relegate the production and transformation of food to an abstract rural landscape, forgetting that it is one of the basic essentials for life, along with air, water and shelter—key issues for planners and urban designers (Morgan 2009).

Nowadays, with global changes resulting from mega-urbanization trends, world population growth, decrease in natural resources, and land degradation, along with the severe environmental and socioeconomic impacts of climate change, urban food is a fundamental topic to be taken into consideration in theory, policy, and practice toward agro-food policies and strategies of cities around the world (Marsden and Franklin 2013). The food system relates to urban planning and territorial development at multiple levels, such as food and nutrition security, environmental sustainability, social justice, democracy, participation, and human welfare. Food is also central to resilience thinking (Sonnino 2009; Walker and Salt 2012) and sustainable place making. All phases and stages of the urban food system (production, processing, distribution, and consumption) may have a direct translation in spatial terms within the city and are thus factors in the creation of potentially sustainable places, with interrelationships between productive urban and peri-urban allotments, urban green systems, green infrastructures, pedestrian and bike networks, food distribution and consumption circuits, farmers markets, new building typologies, and so on.

Integrating the food system into urban planning implies that some urban land must be devoted to food production, taking advantage of all the eco-services that this component of the system, when properly located, could provide. This is especially relevant at a time of economic crisis and urban sprawl containment. Indeed, urban regeneration is a main European focus in urban planning after a decade of uncontrolled urban growth, especially in Southern Europe, and it is an important policy of the European Union (EU). Within this framework, urban agriculture, although perhaps secondary in economic terms, appears as a relevant tool, since it is synergistically related to urban sustainability principles such as diversity of uses, density, proximity, water and waste cycles, greening, and livability (Council of the European Union 2010).

In addition to production functions, the urban food system offers a wide range of ecological functions such as biodiversity, nutrient cycling, and climate regulation, and cultural functions such as recreation, cultural heritage, and visual quality, all of which benefit the nearby community and society as a whole (Wascher et al. 2010).

Food production inside and around urban areas is able to foster sustainable social and economic development and at the same time promote environmentally sustainable strategies, becoming the single most important urban enterprise engaging directly with the concept of "urban metabolism" (Girardet 1999). It can help to close the waste–resource loop through the recycling of domestic waste and water (reintegrated into the soil as compost, or as food for animals), by producing fuel, and by supplying local markets and reconnecting producers to consumers, reducing significantly the ecological footprint of food consumed in cities (Jarosz 2008). Opting for an urban food system based mainly on ecological and organic production and the use of renewable energies, along with the potential of agriculture to regulate climate by sinking and storing carbon dioxide and reducing the urban heat island effect, may be greatly reinforced if the proposal is directly linked to the global strategies, goals, and established commitments of the fight against climate change and related policies of the EU (European Commission 2007).

A consideration of the scale, nature, and purpose of different food production operations (from micro-scale backyard kitchen gardens inside the city to medium- and large-scale operations located in its hinterland) will provide a thorough image of an urban food system in all its complex socioeconomic and environmental dynamics. On the other hand, understanding urban and rural landscapes as a continuum will allow for a holistic understanding of the different factors and actors that shape landscapes and improve policies designed to connect the ecological structures of cities with their regional settings.

Based on this conceptual framework, we assume that a sustainable food system is one in which the chain of food production (production, processing, distribution, and trade) to final consumption and waste management ensures, now and in the future, food and nutrition security in terms of quantity, quality, and access to food for all, while promoting a healthy environment, economic dynamism, social cohesion, and public health. Emerging evidence shows that the planning of an urban food system is a complex issue with multiple environmental, social, political, and economic determinants. It encompasses components of availability,

access, and utilization. A comprehensive and holistic analysis of the current organization of food production, processing, distribution, and consumption in a metropolitan area requires a broader concept of a food system beyond specific activities, and includes other economic, social, and environmental drivers as well as the interactions among these drivers, activities, and outcomes (Ericksen 2008).

Clearly, this complexity of an urban food system brings to bear a substantial pressure on existing tools for planning public policy. First, urban food systems do not geographically comply with administrative boundaries. This non-coincidence may have high direct and indirect costs in terms of the inefficiency of institutional organization and logistics, use of resources, and other factors. Secondly, the urban food system raises an ongoing and unsolved challenge in spatial development policies—the management of the urban–rural relationship (OECD 2011). When considering existing interactions between urban areas and their hinterland, it is important to recognize that

> The interactions between urban centres and their surrounding—as well as more distant—rural regions often include 'spatial' linkages such as flows of people and goods, money and information, and other social transactions that are central to socio-economic and cultural change. (Tacoli 2006, p. 4)

Geographic socioeconomic divides that persist to this day, seeing rural and urban environments as isolated systems, have persistently resulted in ill-conceived policy and planning tools that hinder their potential roles in regional and rural economic growth.

The Urban Food System of the Lisbon Metropolitan Area

The Lisbon Metropolitan Area takes up a central place in the Portuguese mainland territory; at the second level of the European Union's Nomenclature of Territorial Units for Statistics (NUTS II) hierarchy, it consists of two different areas, Greater Lisbon and the Península of Setúbal, separated by the Tagus estuary. With a total surface of 2,994 square kilometers, the LMA includes eighteen municipalities (NUTS III) (Fig. 1-1). These municipalities correspond to about 3.3 percent of the national territory, and their population of about 2.75 million residents comprises close to 30 percent of the Portuguese population.

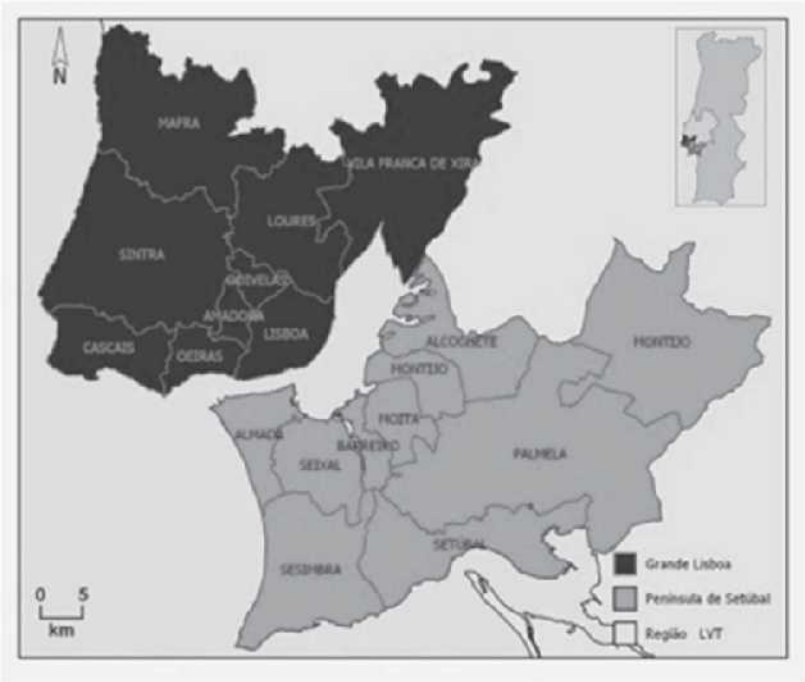

Fig. 1-1. The Lisbon Metropolitan Area, including Greater Lisbon and the Peninsula of Setúbal, with their 18 municipalities.

Concerning its main biophysical characteristics, this metropolitan area is quite diverse, with a moderate relief dominated by plan morphology, and low-altitude areas that constitute the extensive plain of the sedimentary basins of the Tagus and Sado rivers.

The Tagus estuary is the major wetland in Portugal and one of the most important ones on the European Atlantic Coast, with an area of 325 square kilometers and a high conservation status due to its habitats for important species of fauna and flora.

To the south of the LMA, the Sado estuary also presents itself as a quite rich wetland because of its biodiversity as well as its landscape diversity, including vast agriculture and forestry fields, fisheries, extensive aquaculture and salt production fields, situated side-by-side with urban occupation and sites of high natural and cultural value.

Statistics on land use in the LMA in 2009 indicate that one of the most relevant territorial components for the urban food system is the built-up area, the most dominant type of land use. The compact built-up areas (consolidated, organized, and hierarchical urban structure) represent about 33.5 percent of the LMA's territory, and the fragmented built-up areas (unplanned urban sprawl territories) correspond to nearly 18 percent, being related to urban uses and functions of the territory. These areas are located along the main urban axis of the north riverbank and close to the main urban centers on the south riverbank. Dispersed built-up areas represent 9 percent of the territory and are mainly located in areas where agricultural land use dominates. Empty spaces (no specific use) comprise 4.5 percent, roughly the same as the industrial areas. Public infrastructures and equipment represent only about 1 percent of the total area.

The identified forest areas (areas where forestry constitutes the main land use) correspond to about 22 percent of the territory. Agricultural areas are the second most expressed land-use pattern in the metropolitan territory, taking up to 27 percent of the LMA. The wilderness areas include wetlands, marshes, bushes, and dunes and, as a whole, they occupy 9.4 percent of the territory (CCDR LVT 2016).

Since land use is a fundamental topic to the LMA food system characterization, another study has been developed based on 2006 Corine Land Cover (CLC) data collected by the European Union's European Environment Agency (EEA 2011) (Fig. 1-2). Looking at the percentage occupied by the main land use classes, it is relevant to observe that the total productive agricultural and forest areas, in the sense of producing products and goods, are about 60 percent, contrasting with urban areas with a total of 22 percent. Despite the generic cartographic scale used (1:100,000), when related to statistical data, it becomes clear that food production and environmental services take up significant room in the urban food system of the LMA, which likely emphasizes the rural character of certain areas within the metropolitan context, and at the same time highlights the need for strategic planning toward sustainable urban–rural development (Oliveira 2014).

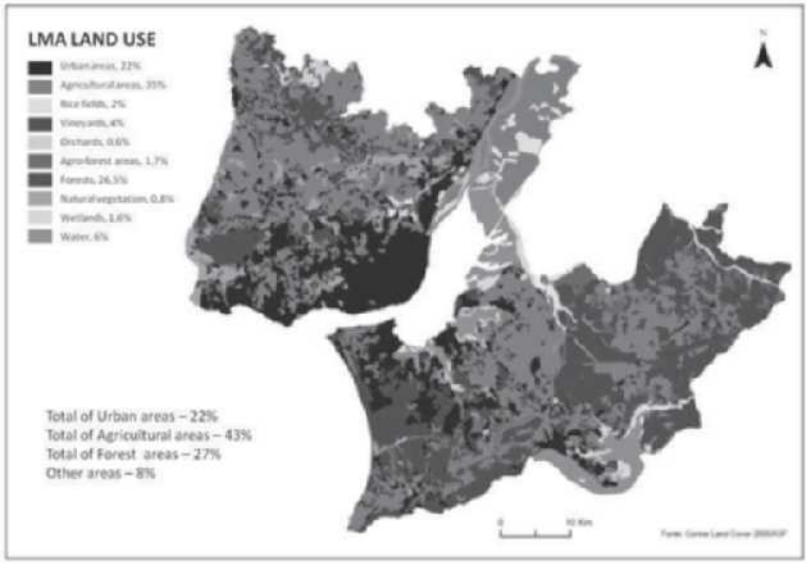

Fig. 1-2. Land use of the LMA based on Corine Land Cover 2006 data (EEA 2011) and the total area (percentage) occupied by its main classes.

Analyzing the structure of the LMA food system for other kinds of indicators, we can identify some features that demonstrate the existence of an established functioning urban food system:

- The LMA has a relatively dense network of 7,524 agricultural holdings, representing a utilized agricultural area of 87,588 hectares; the average utilized agricultural area is 11.6 hectares, and there are 7,571 sole producers and societies;

- The distribution network is also quite dense, taking into account not only marketplaces and wholesale markets, but also food retailers, restaurants, catering, and food processing industries. (Activities related to the food systems can represent more than 13 percent of all LMA activities.)

- With 2,821,876 residents (not even considering the floating population such as tourists, students, workers, and so on), the potential market share is relevant.

These data point out that there is an urban food system in place that has the potential to increase the final and intermediate consumption of local produce, with impacts on local economies and positive spill-overs to rural areas, thus contributing to increased territorial cohesion (Morgado and Oliveira 2013).

The project has been addressed basically through a literature review, a conceptual framework, and a preliminary analysis and diagnosis of the urban food system in the LMA. Interviews with key stakeholders have already been conducted. In the next phase, it will undertake statistical and modulation quantitative analysis and GIS-based spatial analysis, integrating socioeconomic and biophysical models, reflecting prevailing factors that drive supply and demand at different geographic scales, and including a broad scope of agricultural products. As output, a set of indicators and analytical tools will be created, in order to integrate a strategic perspective for the urban food system of the LMA in the regional and local spatial planning systems, not necessarily as a formal spatial plan but rather as a set of orientations that might be adopted by different stakeholders from a governance point of view. The project's conceptual framework is mostly based on four concepts that have been considered to be relevant.

Relevant Concepts for LMA Food System Planning

Food and nutrition security and sustainability are core societal challenges for the twenty-first century, but have yet to gain the necessary centrality in political, policy, and academic agendas worldwide (Lundqvist 2010). Consequently, the debate on how to deliver resilient urban food systems is of paramount importance, through the design of adequate spatial planning and governance instruments. Our research uses four concepts as the basis for the development of a new conceptual framework (ESPON 2007; OECD 2002):

1. Functional Regions (FR),
2. Functional Economic Market Areas (FEMA),
3. Short Food Supply Chains (SFSC), and
4. Green Infrastructure (GI).

Functional Regions

Functional regions are sub-regional spatial units that are delineated by social or economic activities such as labor markets or travel-to-work distances rather than by political–administrative boundaries, and have their own relevant levels of internal interdependence. Functional regions are ideal units for implementing and managing urban food systems, but their use as policy tools brings several challenges. Some are quite tangible, such as those related to policy integration processes (establishing links with existing planning and development instruments); others are deeply rooted in national institutional structures and political cultures. Our challenge is to explore the scope for achieving an enhanced level of territorial coordination, cooperation, and partnership as well as flexible and multilevel forms of territorial governance (Born and Purcell 2006).

Functional Economic Market Area

Following a functionalist perspective, we propose to consider the urban food system in a context of an urban functional economic market area (FEMA), characterized on the basis of a set of markets or catchment areas, with relevant levels of internal interdependency, and which best reflect the drivers of a local food economy. FEMAs are not easily defined: economic flows are often not coincident, with administrative boundaries surpassing them or forming sub-regions or city regions instead.

By studying the FEMA in the LMA, we will identify the main economic drivers of food system activities, gather data on the supply and the demand sides that accurately reflect the economic flows and internal interdependencies that clearly define a food system as a FEMA, and identify the policy implications of the main drivers. This information will be useful in determining orientations for future policy design, responding to calls for increased cooperation and policy coordination to maximize policy impact and efficiency (Gerritsen et al. 2013). On the other hand, since the LMA is a peripheral metropolitan area in Europe, it is relevant to consider economic resilience at a regional scale.

Regional economic resilience might be conceptualized as the ability of a region (defined roughly as a metropolitan area) to recover successfully from shocks to its economy that throw it off its growth path, or that have the potential to do so.

A region might respond to such shocks either by returning to its previous equilibrium situation in terms of growth rate of production, employment, and/or population, by resisting the shock altogether, or by restructuring its economy in order to generate a new state of equilibrium (Pendall, Foster, and Cowell 2010). The aforementioned shocks might result from one or a combination of factors:

- structural change resulting from global or domestic competition, from changes in the region's competitive advantage for various products, and/or from changes in consumer demand for products that the region produces, or

- other external shocks, such as a natural disaster, closure of a military base, movement of an important firm out of the area, and so on (Hill, Wial, and Wolman 2008).

According to Pendall, Foster, and Cowell (2010), regional resilience might also be seen as a region's ability to avoid getting locked into a status of sub-optimal structural equilibrium resulting from a set of historically based decisions, as in path-dependency processes.

The approach of resilience in terms of systems and long-term processes becomes even more important when speaking about urban food systems and food-based functional regions. A long-term systemic perspective of regional resilience would emphasize the structure of relationships among the variables in the system, a structure that persists over a long period of time and is conditioned by economic, political, and social institutions. Economists usually refer to these long-term (50 years or more) sets of relationships among variables and institutions as "social structures of accumulation"—combinations of mutually reinforcing economic, political, and social institutions that persist over long periods of time, create the conditions for long-term economic growth, and explain the evolution of macroeconomic performance. These structural arrangements tend to go through a process of thriving, stabilizing, and decaying over time. Resilience would therefore reflect the ability of a region to adapt and rearrange its combinations of economic, political, and social institutions in order to avoid the decay process that might jeopardize growth, development and cohesion. Thus, the urban food system's plan is a powerful instrument to increase regional resilience, guaranteeing food security to urban populations, even under stressful conditions, as well as economic, environmental, and social sustainability.

Short Food Supply Chains

While the FEMA relies on an economy of proximity approach, the concept of short food supply chains (SFSC) might play an important social role in enhancing the vitality and quality of life in both urban and rural areas, given its focus on inclusive social change through education and ethical issues. However, there are a few examples that seem to associate SFSCs with social exclusion, such as when an emphasis on localism appears to focus on wealthy consumers (Morgan and Sonnino 2010).

Economically, there is evidence that local farming systems and short chains have a higher multiplier effect on local economies than long chains, and also contribute to local employment, particularly in rural areas. At the producer and farm level, they seem to allow a higher share of added value to be retained locally, although quantitative evidence of such impacts is poorly documented. There are many examples of farmers using a mix of SFSCs, or combining them with longer chains, in order to build resilient routes to market and reduce risks from market volatility. To better understand the economic relevance of food systems' activities, it is important to consider that the subject is usually approached on trade value of the related goods and services, with weight given to regional wealth creation, production, employment, and competitiveness. Nevertheless, a food system's economic relevance goes far beyond this.

Green Infrastructure

Based on the widely perceived need to combine economic efficiency and environmental quality, the importance of green infrastructures (GI) in urban planning and development is being recognized by the European Commission. In the 2013 Communication of the European Commission, *Green Infrastructure (GI)—Enhancing Europe's Natural Capital*, there is an explicit call for the inclusion of GI, "a strategically planned network of natural and semi-natural areas", in spatial planning and territorial development policies (European Commission 2013a). Green infrastructure and the urban food system are closely related, through the necessity to maintain productive agricultural land on the urban fringe and to integrate food production in urban areas. GI promotes the multifunctionality of landscape, performing various related functions that may not be located in the same space, at the same time, or at alternating periods of time, and which provide a high number of beneficial services for human well-being.

Landscape functions and services become an important concept in policy making because they help to decide the best land uses for a particular location, according to the needs of different stakeholders. Thus, for the definition of an urban food system in the LMA, we consider it essential to analyze the green infrastructure of this area, based on the concept of landscape multifunctionality and ecosystem services (Millenium Ecosystem Assessment 2003). Ecosystem services can be defined as the ecological functions that provide human benefits (direct or indirect, including food, water, flood and disease control, and so on), and that consist of a number of interrelated biotic and abiotic processes. They are important for human well-being, sociocultural cohesion, and economic activities. If the urban food system is efficiently planned and managed, it can support different ecosystem services, such as production of food and fiber, biodiversity conservation, soil conservation, water regulation, and recreation, among others (Wascher et al. 2010).

The identification and characterization of the services and their valuation are among the points that we want to address in this research. For the valuation of eco-services provided by the urban food system, we will take into account the ecological, economic, and sociocultural aspects.

Social Inequalities: The Weight of Food Expenditures on Family Income

Urban populations in the United States spend 10–40 percent of their income on food depending on their economic status, and in developing countries, food consumption might even take up to 85 percent of total income (Pothukuchi and Kaufman 1999; Redwood 2009; Sonnino 2009).

In the Lisbon Metropolitan Area, food consumption represented, in 2010/11, an average of 12.5 percent of a household's total expenditures and 9.3 percent of its income; hotels, restaurants, catering, and similar services represent an additional 10.8 percent of families' total expenditures, 8.8 percent of income (INE 2012). However, these average numbers may hide the existence of deep inequalities between low-income and high-income families. The occurrence of external shocks with relevant impacts on food prices reflects immediately on the expenditure structure of families, with greater impact on food security among low-income families that have no disposable income for adjustments.

Most studies demonstrate that urban agriculture contributes to sustaining food security levels, ensuring a more regular supply of food for low-income urbanites, who are mostly ignored by long food chains (Sonnino 2009). Nevertheless, not only low-income urbanites are affected. Considering that consumption trends are shifting more and more toward high-value-added foodstuffs from the food processing industry, in a context of few or no rural connections or direct access to food production, urban residents are highly dependent on global food systems and global markets; they are strongly affected in situations of food shortage, and rapidly find themselves in positions of unsustainable food insecurity and even hunger. Even the smallest decrease in urban dependence on global food systems contributes to regional resilience, ensuring a greater proportion of products with locally added value, less vulnerable to external shocks.

Economic Sustainability of Food Systems Activities

The urban food system contributes to activity diversification and multifunctionality, and increases its resilience to external shocks if its organization promotes an increase of activities with just a few percent of locally added value in response to challenges such as shifts in consumption trends, consumer concerns (ethical considerations about environmental responsibility, fair trade, or support for local producers, for example), the availability of food-related services such as online shopping and door-to-door delivery, the development of innovative distribution channels and market niches (such as gourmet or bio), branding and innovation, and even the association of food production activities with other ecosystem services such as landscape preservation, biodiversity, or leisure.

Urban–Rural Partnerships and Territorial Cohesion

The potential of a local food system's activities to increase its local market share depends largely on the system's capacity to respond to local demand, ensuring stability of supply and diversity of products offered. Urban agriculture might represent an important contribution toward guaranteeing food security for low-income urbanites, but still not provide a sufficient relevant increase in the dynamics of the local economy. Nevertheless, some things are common to every urban center—though the concept of proximity might need to be individually adjusted to the spatial context of urban centers with fast-growing populations.

Land availability for use by agricultural or industrial food-processing units is scarce within urban centers, which pushes these activities toward peri-urban areas. This spatial reconfiguration of the food systems' activities may determine the configuration of eventual urban–rural partnerships, established under the assumption that food trade is an important source of money transfer between urban centers (food consumers, high demand scale) and peri-urban rural areas (food producers and processers, high supply scale). Territorialized food systems, while increasing money transfer among rural and urban areas within the metropolitan area, also have the potential to decisively contribute to territorial cohesion (Albergaria et al. 2012).

Usually functional regions and functional economic market areas are defined through labor market flows, and boundaries are established by the commuting area or distances traveled to work, shopping, or cultural activities (OECD 2011). The identification of such functional areas is based on a sequence of three steps (Brezzi et al. 2012):

1. Identifying one or more urban cores according to population density in built-up areas (densely inhabited areas).

2. Aggregating the non-contiguous cores belonging to the same polycentric functional area on the basis of the strength of commuting flows.

3. Identifying the hinterland or "worker catchment area" of the urban labor market outside the densely inhabited core.

Conclusion

The worldwide rise in urban food planning strategies place this subject on both the European and international urban policy agendas. Since 2009, numerous examples of urban food strategies have become important tools for urban development in New York, Toronto, Vancouver, Paris, Amsterdam, Tokyo, Belo Horizonte, London, and a wide network of cities in the United Kingdom, amongst many others.

In Portugal, although there is no agro-food planning strategy, we can identify in the most recent few years the advent of various initiatives that highlight rising interest and entrepreneurship on behalf of public and private institutions, aiming to increase the dynamics of production, distribution, and consumption sectors, with special emphasis on initiatives

in the LMA's region of influence. These trends indicate that we are reaching the necessary level of information availability, critical mass, and technical abilities that allow for the establishment of urban development processes that are intrinsically linked to urban planning processes, incorporating the food system as an object of urban planning and spatial management.

The need for this kind of process assumes particular relevance when we take into consideration that the national food balance exhibits a strong and growing foreign dependence, due to the gradual decline in gross value added from agriculture, animal husbandry, hunting, forestry, and fishing. As well, when analyzing the territorial dynamic, mainly based on the 2011 Census, we can see that in almost 78 percent of the Portuguese mainland's territory, the dynamic is low or even very low, despite favorable physical conditions for agricultural production and the accessibility of grids that ensure food distribution (Oliveira et al. 2012).

This scenario at the national level is reflected, in a way, at the Lisbon metropolitan scale, where close to a third of the national population resides—a utilized agricultural area that accounts for about 37 percent of the territory, and a combined agriculture/forestry use area that represents more than 50 percent of the total. Despite those conditions, in 2012, the contribution of agriculture, animal husbandry, hunting, forestry, and fishing to the gross value added of the LMA was quite low (0.4 percent) according to the values verified in the NUTS level III of Greater Lisbon (0.2 percent) and Setúbal Peninsula (1.6 percent—slightly higher, but still under the mainland's average).

Therefore, we think there is a high potential that justifies urban food system planning in the LMA, notwithstanding the interest and urgency of performing this same exercise for other metropolitan areas and middle-sized urban centers, and even assuming a national scope approach. A challenge such as this should be considered as an applied research program, involving a network of active partnerships including academic, governmental, and non-governmental organizations, and other institutions where the role of the LMA and of the municipalities stands out as crucial.

This research has been carried out under a project that allowed the analysis of the main characteristics of the urban food system in the LMA, and the conceptual framework for its strategic planning. Another research project is now being set up that seeks to:

1. Contribute to a key issue of the emergent international and EU scientific agendas;

2. Contribute to the objectives of the Europe 2020 strategy and related policies established for 2014–2020;

3. Raise awareness in the Portuguese political agenda of the relevance of food sustainability through the concept of the urban food system as a factor in territorial cohesion, thus informing policy making at national, regional, and local levels;

4. Tap into different disciplinary and analytical domains with few linkages so far in a common thematic, interdisciplinary issue;

5. Enlarge the mainstream concept of food systems through a more comprehensive approach: a local production system that, besides being an important economic system, is also a social, cultural, and environmental system that takes place in specific political and strategic frames, both nationally and internationally;

6. Collect, systematize, and make available relevant information for the definition of a functional, resilient food region in the LMA and for the design of an urban food strategy for this city-region;

7. Set up and mobilize a panel of international experts to support not only the current proposed research but also a follow-up application for EU-wide funding, in order to complete the objectives that fall outside the narrower focus of the current proposal.

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