Teresa Marat-Mendes
Sara Silva Lopes
João Cunha Borges
Patrícia Bento d'Almeida

Atlas of the Food System

Challenges for a Sustainable Transition of the Lisbon Region

Springer

Teresa Marat-Mendes •
Sara Silva Lopes • João Cunha Borges •
Patrícia Bento d'Almeida

Atlas of the Food System

Challenges for a Sustainable Transition of the Lisbon Region

Springer

Teresa Marat-Mendes
Iscte-Instituto Universitário de Lisboa
Lisbon, Portugal

Sara Silva Lopes
Iscte-Instituto Universitário de Lisboa
Lisbon, Portugal

João Cunha Borges
Iscte-Instituto Universitário de Lisboa
Lisbon, Portugal

Patrícia Bento d'Almeida
Iscte-Instituto Universitário de Lisboa
Lisbon, Portugal

ISBN 978-3-030-94832-0 ISBN 978-3-030-94833-7 (eBook)
https://doi.org/10.1007/978-3-030-94833-7

Foreword by Peter J. Larkham

Mapping, Cities and Food

It seems relatively unusual for academic works to have Foreword, and some seem to function merely as introductions to the structure and content of the volume. This volume does not need that: it is, simply, an atlas relating to food in one city-region. Instead, I wish to emphasize the importance of the ideas of food, cities and mapping. How we think about them, and the use we make of that knowledge, will be vital for our future.

Food is one of the most critical issues faced by people today. Many readers of this volume will live comfortable urban lives in westernized industrial societies and might question this assertion. Yet there are many in the world not in such fortunate positions. Many who do live in those favoured societies are themselves not in fortunate positions: poverty, homelessness and poor environmental quality are more common than we might wish or even recognize. So, worldwide, there are many who do not get enough to eat; and many others whose diets are inappropriate—obesogenic or otherwise unhealthy, or deficient in various components. These concerns lead to the issue of 'food security'. As defined by the United Nations Committee on World Food Security, this is the expectation that all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their food preferences and dietary needs for an active and healthy life.

This ventures into the territory of human rights. Whose responsibility is it to ensure that this right is delivered; that everyone benefits from food security? Roles and responsibilities are mixed, from the individual to communities; municipal, regional and local governance; corporations; and even international organizations such as the UN. There are tools to guide activity, including the Sustainable Development Goals, and organizations such as the UN World Food Programme and the International Food Policy Research Institute. But activities are inevitably affected by political values and concerns at all scales, consideration of economic costs and benefits, the inevitability of some form of climate change, and a global population that continues to grow—according to the Population Division of the UN Department of Economic and Social Affairs forecasts, from a current population of 7.8 billion to some 10.9 billion at the end of this century: that is a growth of approximately 81 million people per year. How can we provide the right food at the right time and the right place to this population? We can't do it for everyone at the present, so clearly things will need to change.

If food is a problem, how about cities? Many of them are growing too, and again the Population Division forecasts make sobering reading. Some 55% of the current world population lives in urban areas, and this is likely to increase to 68% by 2050. That could add a further 2.5 billion urban dwellers, and nearly 90% of that increase is taking place in Asia and Africa. Yet, in some areas including Japan, the Republic of Korea and Eastern Europe, we are seeing deurbanization: cities shrinking as a result of economic contraction, natural disaster, low fertility and emigration. In some 'comfortable' countries, there is population movement out of crowded cities to even more comfortable rural areas: yet such migrants usually remain socially and economically dependent on urban areas, and very rarely produce significant amounts of food. The urban size/population problem is clearly diverse, sizeable and growing.

Urban agriculture has been suggested, and in some locations actively promoted, as part of the solution to food insecurity in cities. It can exist at many scales and intensities, from individuals using their gardens, allotments or waste/under-used spaces, to intensive industrial-scale production underground, on rooftops, in purpose-built multistorey farms using smart technology, controlled climates, hydroponics and other technologies. It exists in city centres, suburban sprawls and extends out into peri-urban areas. However, its productivity is currently relatively low, especially in the more individual endeavours, which seem to have produced most publicity. The more industrial enterprises are more productive but usually focus on specific crops such as salads. Overall, it is suggested that urban agriculture could meet 15–20% of global food demand. While this is undoubtedly a useful contribution to food security, it is only part of the solution, and its products often do not reach disadvantaged urban communities.

Even at its best, urban agriculture is hardly a solution to some of the 'food deserts' that are evident in many cities even in prosperous countries. The problem may not be an absolute lack of food, but lack of access to a healthy diet and/or preference for unhealthy foods, leading for example to land-use planning policies restricting hot-food takeaways in some UK cities, especially close to schools.

Such food deserts can be readily demonstrated by mapping, and this brings us to my third issue. Maps provide an extremely valuable, and quickly perceived, presentation of potentially large and complex data sets with a spatial dimension. They can be a key tool in promoting understanding and can inform evidence-driven policy development and implementation. Recent examples using the benefits of IT for the production and dissemination of maps can be extremely effective, such as with Amsterdam's Energy Atlas produced through the EU-funded TRANSFORM programme. Yet there are still benefits to paper maps and atlases. Although static and not continuously updatable, they form a permanent record, not susceptible to IT hardware problems or software updates. Many readers still appreciate the tangible artefact, which can convey a perception of physicality, certainty and reliability. And a well-designed map, accurately and effectively portraying appropriate data, often has many of the qualities of a work of art.

This *Atlas of the Food System* provides a constructive and informative response to these issues. It presents clear mapping of the city-region's various food systems in a range of ways —highlighting, for example, the diversity and spread, but very small extent, or urban agriculture spaces in some of the municipalities. Adding photography to the cartography allows consideration of the physical contribution of growing spaces to urban form and design, and hence our perception and use of spaces. This is timely as our current global crisis reminds us of the health and well-being contributions of such spaces, and proximity to nature, for urban dwellers. But Part IV shows that this is more than a mere representational Atlas. It goes far beyond this, in seeking to make sense of the cartographic data and present proposals for better integrating urban agriculture into a sustainable urban planning system.

While this Atlas focuses on just one city-region, albeit with a wealth of detail and constructive proposals, we need more such initiatives to even begin to address the large-scale problems mentioned here. The scale of problems, and range of potential solutions, needs to be higher in the consciousness of everyone, from those renting or owning small urban plots, to global corporations active in food systems, and to governance at all scales. The physical artefact of an Atlas can help here: it forms a permanent reminder. But we also need real-time data collection, analysis and display, to better understand how, and indeed how fast, the situation can change; and we need policy-makers to design *and implement* suitable policies. The future will not be the same as today, and today is not the same as the past. This Atlas pushes us to learn, think and plan. "Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning" (Einstein).

Peter J. Larkham
Birmingham City University
Birmingham, UK

Foreword by June Komisar and Joe Nasr

Food Systems at the Intersection of Place-Based Design and Spatial Planning

The spatial history of an urban landscape can help to envision the future and understand the past from a visual and spatial perspective. This atlas of Lisbon's regional food system can help students, scholars, and practitioners understand the agricultural history of locations that now feature dense urban developments and conurbations of smaller towns at the city's periphery, the connectivity of food spaces and structures to the city and its hinterland, and the way in which such spaces and structures can be strengthened as assets or infrastructure for the resilience of human settlements.

This atlas illustrates the materiality/physicality of food and its systemic nature—in the sense of being a fundamental urban system, on par with transportation, gas supply or sewerage. These dual dimensions are receiving increasing attention as aspects of an understanding of food-related problems and solutions. The materiality of food—its presence in specific spaces and its shaping of places—and its systemic nature (as seen in the emergence of the 'city-region food system' concept)—mean that the production and improvement of urban areas must be founded on as deep an understanding of food systems as that of the relation between transportation systems and urban form, for example.

This book is a welcome addition to recent literature about urban agriculture and food systems as it shows in a compelling, visual way how deeply the food system is entrenched into our landscapes, and indeed how much food systems profoundly shape urban form. The powerful visual picture of the variety of forms agricultural land takes in different regions illuminates what relationships between food systems and design exist, as well as how planning for food growing, processing, and distribution is vital to considerations about the future of any city or region. The mapping and historical analysis of food systems are crucial components of understanding how agriculture, trade routes, markets and dense urban developments have worked together in the past, and how they have shaped the environments we live in now. Creating a sustainable and resilient future depends on a robust understanding of the relationships between the population, the built form that shelters them, and the food system that sustains them.

The design and planning components of our teaching and research initiatives are aided by the new literature that is beginning to enrich the field (this atlas being a good example)—a literature that intersects the analysis of space and place with that of urban and regional food systems. For some time, we have been undertaking research, teaching, advocacy and service work about the role of design and planning in the shaping of localized food systems. Notably through our Carrot City initiative, we have documented how the functioning of such systems goes hand in hand with sustainable aspects of architectural and planning proposals and projects that range from building design that integrates community food hubs to productive urban landscapes that act as green infrastructure. We will briefly illustrate these connections through some activities in which each of us has been involved.

Beginning with a strong interest from students in the role design plays in many aspects of the food system, June has been teaching architecture with a focus on projects that incorporate aspects of urban agriculture, food preparation, food literacy and/or distribution. Students have demonstrated remarkable ingenuity in finding opportunities to incorporate urban agriculture and other food system components within the confines of existing or proposed built form. They have proposed urban agricultural education hubs, farms above arterial roads, markets under elevated highways, and growing spaces on existing and new rooftops, combining the mitigation of urban heat island effects with the provision of growing spaces. They have designed markets, food halls, and food production facilities, enhancing traditional food-centred districts. A crucial component of such proposals is an understanding of the big picture, from the presence—and at times the disappearance—of traditional agricultural lands to locations that lack access to healthy food.

In Joe's case, two experiences with participatory localized food mapping in Toronto connect with the effort underlying this atlas. He participated in an effort to map and inventory 'Food by Ward', seeking to document the 'food assets' located in each ward of the City. This started as a collectively constructed tool to inform candidates running for municipal office about the presence of food infrastructure across the city, while highlighting gaps and needs that these candidates can be pressed to address. After the election, the existence of such documentation remained useful to show the richness of and the deficiencies in the food-system landscape. In parallel, Joe helped Toronto Urban Growers, the city's urban agriculture, to map and describe urban agriculture across the city. Through this effort, individual actors in this landscape started to see themselves as part of a broad landscape and movement. These two different efforts show that mapping urban and regional food systems is multifunctional—beyond painting a picture and telling a story of food systems, such mapping can serve to educate, politicize and give shape to a collective, systemic identity, as well as to highlight gaps and deficiencies in such systems.

This atlas can help us understand how food systems, from agricultural lands to spaces for trading, shape the world we live in. It provides a powerful message about how food is a part of the most basic aspect of our culture and environment. Although centred on one region, Lisbon, this book can spark a trend of spatial and visual studies of the food systems in major cities across the planet, a vital resource for designers and planners of our infrastructure at many scales.

June Komisar
Joe Nasr
Ryerson University
Toronto, CA, Canada

Acknowledgements

Producing a book with this magnitude depends on the support of many people and institutions to whom we are extremely grateful. Thus, the authors would like to thank the following persons and entities (organized alphabetically) who have kindly supported this work, while granting:

i. the permission to use and publish original archived sources, included in this Atlas;
ii. the provision of cartographic elements and information on urban agriculture, included in this Atlas;
iii. the permission to use and publish photographs taken by the authors, included in this Atlas;
iv. the offer of personal photographs and respective permissions, included in this Atlas;
v. the supportive discussions and observations to specific topics included in this Atlas;
vi. the financial and work conditions that supported the research work conducted for this Atlas.

Águas do Tejo Atlântico (Grupo Águas de Portugal); ALDI Portugal; Ana Mélice Dias; Arquivo Municipal de Almada; Arquivo Municipal de Lisboa; Arquivo Municipal de Loures (Técnicas Catarina Bernardo and Dora Marques); Arquivo Municipal de Palmela; Arquivo Municipal de Vila Franca de Xira (Técnico Superior José Rocha); Arquivo Municipal de Cascais (Técnica Superior Sandra Santos); Barbara Koole; Biblioteca Francisco Keil do Amaral (Ordem dos Arquitetos Secção Regional Sul); Câmara Municipal de Alcochete (Geógrafo Carlos Aniceto); Câmara Municipal de Almada (Divisão de Inovação, Clima e Energia—Dr.ª Sara Dionísio e Dr. Nuno Lopes; Departamento de Cultura—Dr. Paulo Reis e Dr.ª Otília Rosado); Câmara Municipal da Amadora (Divisão de Informação Geográfica—Técnico Superior Fernando Ferreira); Câmara Municipal de Cascais; Câmara Municipal de Lisboa (Divisão de Gestão de Informação Georreferenciada—Geografa Margarida Coelho da Silva); Câmara Municipal de Loures (Gabinete de Planeamento—Coordenadora Paula Vidal Pereira); Câmara Municipal de Mafra (Departamento de Urbanismo, Obras Municipais e Ambiente—Dirigente Carla Romana); Câmara Municipal da Moita (Gabinete de Desenvolvimento Urbanístico—Engenheira Rita Costa Barros); Câmara Municipal do Montijo (Gabinete de Informação Geográfica—Coordenador Francisco Silva Cardoso); Câmara Municipal de Odivelas (Divisão de planeamento urbanístico—Chefe de Divisão Florinda Lixa); Câmara Municipal de Oeiras (Gabinete de Inteligência Territorial—Geografo Miguel Jeremias); Câmara Municipal de Palmela (Departamento de Administração e Desenvolvimento Organizacional—Técnica superior Patrícia Franco); Câmara Municipal de Seixal (Divisão de Desenvolvimento Estratégico—Eng.º Geógrafo Francisco Figueiredo); Câmara Municipal de Sesimbra (Unidade Técnica de Sistemas de Informação Geográfica—Técnica superior Rute Ferreira); Câmara Municipal de Setúbal (Departamento de Urbanismo—Chefe da Divisão de Planeamento Urbanístico Vasco Raminhas da Silva); Câmara Municipal de Vila Franca de Xira; Casa dos Frangos de Moscavide; DINÂMIA'CET; Direcção-Geral do Território (Divisão de Informação e Gestão Territorial (DIGT) e Direção de Serviços de Ordenamento do Território (DSOT)—

Eng.º Geógrafo Francisco M. Sequeira); DOCAPESCA Lota de Setúbal; Fabiano Lemes; Filipa de Castro Guerreiro; F.I.T.- Fomento da Indústria do Tomate SA; Fundação para a Ciência e a Tecnologia; Iscte—Instituto Universitário de Lisboa; Ivor Samuels; Joana Benedito; Joana Ramanauskaitė; José Manuel Henriques; Laboratório Nacional de Engenharia Civil (LNEC); Małgorzata Hanzl; Maltibérica—Sociedade Produtora de Malte S.A.; Mercado Abastecedor da Região de Lisboa (MARL); Michael Hebbert; Ordem dos Arquitectos (OA), Portugal; RAPORAL STEC; Raul Lopes; RIBERALVES; SCC Sociedade Central de Cervejas e Bebidas, S.A.; Robert Fincham; Sistema de Informação para o Património Arquitectónico (SIPA)—Forte de Sacavém (Técnica Superior Cátia Taveira Martins); SIMARSUL (Grupo Águas de Portugal); Stephen Stead; Time Out; Thomas Weith; Tropical Vanity.

The authors wish to acknowledge the support of Iscte-Instituto Universitário de Lisboa and DINÂMIA-CET, where the research for this Atlas was developed, as well as the Institutions and the research teams involved in Project SPLACH, in particular his coordinator, Paulo Pinho, for the stimulating research environment. Our acknowledgement extends to the Portuguese Science Foundation (FCT) for funding the research produced over Grant POCI-01–0145-FEDER-01643 (together with Fundo Europeu de Desenvolvimento Regional, FEDER, and PORTUGAL PAC2020), Grant DFA/BPD/117167/2016 (together with European Social Fund, ESF), Grant SFRH/BD/148556/2019, Grant DFA/BD/5568/2021 and Grant PTDC/EMS-ENE/2197/2012. This research has fed into this book.

The authors are also grateful to Peter J. Larkham, June Komisar and Joe Nasr who have enthusiastically contributed with their forewords to this Atlas. The authors also wish to acknowledge all the support and best guidance provided by Springer.

To our families, with our endless gratitude!

Teresa Marat-Mendes
Sara Silva Lopes
João Cunha Borges
Patrícia Bento d'Almeida

Introduction

> Food Systems (FS) encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded. The food system is composed of sub-systems (e.g. farming system, waste management system, input supply system, etc.) and interacts with other key systems (e.g. energy system, trade system, health system, etc.).
>
> Therefore, a structural change in the food system might originate from a change in another system; for example, a policy promoting more biofuel in the energy system will have a significant impact on the food system.
>
> A Sustainable Food System (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. This means that:
>
> —It is profitable throughout (economic sustainability);
> —It has broad-based benefits for society (social sustainability); and
> —It has a positive or neutral impact on the natural environment (environmental sustainability).
>
> **Food and Agriculture Organization of the United Nations (FAO)**
> in *Sustainable Food Systems—Concept and Framework* Brief

Cities and the Problem of Resources

The work presented in this Atlas is rooted on the ambition to disclose the relationships between territory, urban form and basic resources taking an evolutionary perspective. It stems from a research journey aimed to examine both the morphological and the socio-metabolic aspects of the territory, towards a more sustainable urbanism (Marat-Mendes 2002, 2020). A first moment implied establishing a methodological approach to assess processes of physical change, interlinking them with those occurred in the historic-political, economic and environmental realms, and connecting their different outcomes (Marat-Mendes 2002, 2004). Afterwards, socio-metabolic changes were inferred through an observation of the key transitions verified in the built and the natural environments, understood as consequences of social needs, aspirations and activities. As key resources, food and water allow a particularly clear vision of how these realities intertwine.

Relationships of this complexity are highly localized and can hardly be understood generally—a degree of specificity must be sought (Marat-Mendes et al. 2015, 2016, 2021). Two research projects, financed by the Portuguese Foundation for Science and Technology, proved fundamental to apply our morphological and socio-metabolic concerns to the study of a particular territory—the Lisbon Metropolitan Region. These were Project MEMO—Evolution

of the Lisbon Metropolitan Area Metabolism[1] and Project SPLACH—Spatial Planning for Change.[2] These have allowed our engagement with the study of the historical processes of territorial transformation, through the spatial analysis of its operating systems. Here, we highlight the articulation of habitat forms of the Lisbon Region and its food system. While the metropolitan food system has been observed before (Oliveira et al. 2014), the spatial component may be analyzed further, while its historical formation has often remained scarcely explored. Moreover, the recent publication of the Portuguese Agricultural Census of 2019 (INE 2021) adds new information of the dynamics of food production in the country. This Atlas is motivated by the conviction that surveying the current reality of food-related activities in their territorial aspect is paramount to enable architects, planners, decision-makers and ultimately civic society to fully acknowledge how food can contribute to transform our current habitats into more sustainable ones.

The spatial implications of the food system are, to an extent, obvious. Fields, crops, farms and livestock occupy large areas, usually in the countryside, while markets and other food-access facilities are a familiar part of most neighbourhoods. No house is built—at least today—without a kitchen. And yet, we seem oddly oblivious to the origin of our food, or to all the space, labour and organization necessary for it to get to us (Steel 2008; Parham 2015). The food system – the pattern across which food is produced, transformed, distributed, traded, consumed, and disposed of (Pothukuchi and Kaufman 2000; Steel 2008)—is a basic and vital need for human societies. Thus, if a society cannot feed itself in a sustainable manner, it can hardly aspire to be sustainable at all. Despite this obvious importance, the food system is hardly a key concern for those dealing with the spaces we inhabit, from planners to urban designers to architects.

The links between food systems and urban morphology are gaining new scholarly attention and if, despite all their differences, the leading schools of urban morphology (English, Italian and French) have focused unanimously on open spaces, street systems and buildings, these can be identified with the phases of the food system: production in open spaces, distribution in roads and streets and buildings for retail activities (Salvador 2019)—to which we may also add industrial transformation and consumption spaces.

Cities shelter immense populations that need to be fed. Currently, this is ensured by a global food system, which, while profitable for the companies operating in it, are highly harmful to the environment. Food supply chains have extended physically over such huge time-space distances, that new (and incontrollable) power relations necessarily emerged between local and global, as well as between producers, retailers and consumers, with additional problems arising from the food miles, i.e. the distance food travels from farm to fork, and resulting CO_2 emissions (Spaargaren et al. 2014; Hardman and Larkham 2016). In its spatial dimension, beyond its specific phases, the food system also includes a set of activities, actors and institutions (Pothukuchi and Kaufman 2000) and power relations (Moorcroft 1972; Spaargaren et al. 2014; Wekerle and Classens 2015). Indicators such as employment, sales, values, wages, food expenditure and consumption in activities of industries, retail, wholesale and agriculture are important components of the food system as well (Pothukuchi and Kaufman 2000). This explains why studies of the food system often take a holistic and multi-scale approach, extending for issues of political economy, public health, environmental impacts and cultural capital (Pothukuchi and Kaufman 2000; Steel 2008; Brinkley 2013; Parham 2015). Among the labyrinthine complexity of scales, institutions, practices and values implied in the food system, food access has become conspicuously taken for granted, to the point that we have unlearned how to assess it properly (Steel 2008). Yet, it is obvious that between an urban allotment garden and an intensive monocultural exploration, or between a small grocery shop and a franchise supermarket, or between cooking a meal at home or

[1]Grant PTDC/EMS-ENE/2197/2012.
[2]Grant POCI/-01-0145-FEDER-016431.

ordering it from an online delivery platform, differences are not only in economic scales, practices, social status or values. There are important spatial consequences and contexts whose understanding is fundamental. Indeed, the Food and Agriculture Organization of the United Nations (FAO 2019) has called for a transformation of metropolitan and urban food systems, but without this spatial reach, it is impossible to conceive how or towards which this system can change.

In face of acute problems arising in our exploration of natural systems and the organization of social activities and needs, according to globalized circuits, our cavalier indifference towards the way our basic needs are ensured must end. Social relations and links between social activities and nature cannot be amended, improved or changed without acknowledging just how deeply food is implied in all aspects of these relations and links (Steel 2020). During 1960s, when concerns for the environmental impact of urbanization started to be problematized, the engineer Abel Wolman (1892–1989) proposed a methodology for quantifying stocks and flows of materials and energy necessary for the functioning of specific environments (Wolman 1965). To this heuristic understanding of the city as a functioning organism Wolman called urban metabolism. This concept was later retrieved by the Vienna School of Social Ecology, which articulated metabolic functioning with the social activities which co-determine them, constructing ideal types of socio-ecological systems (Fischer-Kowalski 1998; Fischer-Kowalski and Weisz 2016). According to this school, human and natural systems interact and coevolve over time, having substantial impacts upon one another, with causality working in both directions. Socio-metabolism, thus, proposes a historical approach to society–nature relations (Fischer-Kowalski and Weisz 2016).

To understand how our current food system has come to be, one must look back into how it formed. The city has long been distinct from the countryside insofar as its key activity is trade, not agriculture (Weber 1966). Nevertheless, the relationship between city and countryside was for long one of interdependence. Lack of transportation systems able to withstand long distances and of sophisticated techniques for food preservation meant that production and consumption had to be relatively close by (Costa et al. 2016). All of this started to change with modernity. The Industrial Revolution implied dramatic changes in modes of production, nature exploration, social organization and cultural values, all of which were to impact food systems forever. If the discovery of agriculture slowly had taken place everywhere in the world, granting a gradual transition from hunter-gatherer societies to agrarian societies, the transition or discontinuity from these to industrial societies happened abruptly and took only a few decades to generalize, at least in the Western world, "[s]upported by a unique combination of a land-use system with a high surplus rate, specific patterns of natural resource endowment, technological breakthroughs in coal extraction and metallurgy, institutional change and population growth" (Krausmann et al. 2016).

The 'founding fathers' of modern sociology have studied modernity from different perspectives, namely, the importance of capitalism by Karl Marx (1818–1893), industrialism by Émile Durkheim (1858–1917) and rationalization by Max Weber (1864–1920) (Giddens 1990). To these, one may add another decisive transformation, namely, the emergence of a new metabolism, dependent on fossil fuels and the associated high-density energy demand (Fischer-Kowalski and Haberl 1997; Krausmann et al. 2016). Such increase allows for production systems—and also of distribution and commerce—to grow larger and larger, contributing (however disparately) to the economic growth of enterprises and nation states. One such example is the shift from water base transportation (river and seas) to train transportation, which triggered a great expansion of provision hinterlands of cities, allowing for resources to be brought from greater distances (Niza et al. 2016). If the twentieth century saw the fruition of many changes envisioned from the eighteenth century onwards, the transformation of food systems is certainly among the most drastic.

The (Silent) Role of Food in Architecture and Urban Design

A recent upsurge of research exploring the relations between space, architecture and food has been verified in the past two decades (for example Steel 2008, 2021; Parham 2015; Hardman and Larkham 2016; Marot 2019) and has rightly been hailed for shedding light upon a subject that seldom finds its way to architectural theory. Yet, such a detachment between food and architectural or urban design is a historically contingent phenomenon. Food growing has always been an important land-use at the borderlines of cities around the world, with boundaries often being marked by ploughed land and crops as well as grazing areas and clusters of houses, farms, cattle stalls, fields and gardens (Kostof 1991; Parham 2015). These spaces formed a foodshed, a surrounding territory from which the city brought a key part of its food supply (Getz 1989; Parham 2015; Salvador 2019), but such organization was to change paradigmatically throughout modernity. Within the indictment of North American regional planning scholar Clyde Weaver (1945–2015) that urban planning ended up translating the capitalist organization to space (Weaver 1984), architectural culture has often played an abiding role, which is not to say that architects, urban planners and urban designers have not shown a concern with these problems. In reality, such concerns have been verified throughout modernity, and one of the most immediate merits of recently published research is precisely that it retrieves such proposals from historiographical obscurity.

While the Industrial Revolution spawns rapid transformations from 1760 onwards, it also boosted urban growth to an unprecedented rate. With cities and industries physically expanding over territories previously used for food production, a certain 'tradition' of seeking solutions to minimize the growing contrast between city and countryside also emerged. François Cointeraux (1740–1830), a French bricklayer and Professor of Rural Architecture, promoted adobe and mud-brick construction, seeking innovative approaches to new rural houses (which he hypothesized could apply to cities too), alongside techniques for improving agriculture produce. To this hand-in-hand consideration of architecture and agriculture, Cointeraux called 'Agritecture', suggesting a planned incorporation of agriculture in metropolitan space (Marot 2019).

The utopian Socialist writer Charles Fourier (1772–1837) envisioned a new habitat model, the Phalanstére—a large collective housing estate—surrounded by an agroforestry area, which supplied inhabitants with food (Beecher and Bienvenu 1972). Fourier's utopian plan also detailed dietary prescriptions, made to increase pleasure and intellectual stimulus (Barthes 1971).

Ildefons Cerdà's (1815–1876) Eixample plan for Barcelona (1860) envisioned a new possible society, as an outcome of new industrialized modes of production. This new city was predicated upon a new General Theory for Urbanization, adopting new infrastructures to accommodate both people and the mobility of goods, as well as the flows of water and sewers, and an urban design that conceived the city as whole with several units articulated with the existing territory (Marat-Mendes 2002). The blocks were conceived to accommodate buildings and vegetable gardens, aiming towards an urban–rural city (Marat-Mendes 2002).

Ebenezer Howard's (1850–1920) Garden City model consisted of a network of urban cores, linked by trainways, and separated by rural buffers, whose agriculture exploration fed the regional community (Howard 1902). At more or less the same time, when industrial transformation and transportation by train were changing the landscape and forms of settlement, Scottish social geographer Patrick Geddes (1854–1932) surveyed regional territories and proposed alternatives to continuous urbanizations or conurbations. In his view, territories were to be organized according to the production and maintenance of basic needs, while social and labour groups should manage the territory accordingly, in specific territorial formations (Geddes 1915).

A somewhat underappreciated figure of German Modernism, landscape architect Leberecht Migge (1881–1935) sought to condense elements from the Garden City with the

Fig. 1 View of a Phalanstére by H. Fugére, inspired by Charles Fourier—no date, nineteenth century. Public domain

internationalist design of *Siedlungen* (affordable housing), also being a pioneer in the acknowledgement of the links between urban planning and the metabolic cycle (Marot 2019). He proposed the productive garden as a set of open-air rooms integrally belonging to the housing unit, and using domestic waste as compost (Marot 2019). The Horseshoe Estate in Berlin (1925–33) he planned with Bruno Taut (1880–1938), Matin Wagner (1885–1957) and Ottokar Wagler (1881–1954) remains one of his most emblematic achievements, which predicted a fusion of urban and rural that many cities, we shall see, only sought to promote at the dawn of the twenty-first century.

Prior to World War Two (WW2), Howard's influence can hardly be overestimated in several European countries, but his vision was seldom fully materialized, and are instead was assimilated through the interpretations of architects such as Barry Parker (1867–1947), Raymond Unwin (1863–1940) or Louis de Soissons (1890–1962), who designed Garden Suburbs, lacking the agricultural belts and the circular food system.

In most Western countries, planning structures merely handle these productive transformations by organizing space according to the schemes most convenient for capitalist organization, creating a spatial segregation between production and consumption. Soon, such segregation produced a hierarchy where the urban, as consumer, controls the rural, as producer (Weaver 1984). Meanwhile, proposals for modern cities were discussed and formulated in the *Congrés Internacionaux d'Architecture Moderne* (CIAM), especially those prior to WW2, whose urban principles are epitomized by the 'Chartre d'Athénes', produced in CIAM 4 (1934) and published 10 years later by Le Corbusier (1887–1965) as his own work. The need to produce or access food was never directly mentioned in these, tacitly assumed to be a problem for industrial organization. Interestingly, in his manifesto book 'Vers une

architecture' (Le Corbusier 1923), Le Corbusier collected several images of grain silos,[3] which he discussed in purely formal terms, ironically omitting the important *function* they had in modern food systems.

In the paradigmatic visions of CIAM modernism, the city became independent from its productive hinterland. The previous models—from Fourier to Howard—which incorporated food provision did not become dominant, as the influence of the urban paradigms of Le Corbusier and the 'Chartre d'Athénes' started to generalize. However, in the USA, the situation is somewhat different. The leading figure of architectural modernity, Frank Lloyd Wright (1867–1959), proposed an ideal vision of settlement, the 'Broadacre City' (1934–35). This was developed throughout the depression time, advancing an organic urbanism as a critique of the industrial city. It consisted of an indigenous organic settlement across a seemingly boundless cultivated plain with a transportation and communication network infrastructure, organized through a grid, with a county government administering a population of landowning citizen-farmers (Waldheim 2010). In order to be functioning and productive, this city, which Wright later rebaptized as 'Usonia' proposed that each inhabitant was to be granted a child-birth right to one acre of land, and modern houses were placed among kitchen gardens and small farms, interspersed with light industry, commercial centres, markets, civic buildings and infrastructure (Waldheim 2010).

With the physical destruction that followed WW2 in many of the belligerent countries, the physical structure of human habitat had to be extensively reconstructed or even built entirely anew, prompting architects to advance critical approaches to the relationship between habitats and communities, at several scales. The rationalist principles of pre-WW2 CIAM meetings come to be questioned and often repealed (Smithson 1974). This does not translate into a greater sensibility towards food-production, although an intensified consciousness of the importance of the local scale and of local conditions—environmental, physical, communitarian—is generally used as a tool for critiquing the excessive rationalism of the 'Chartre d'Athénes'.

Ludwig Hilberseimer (1885–1967) is an important example of an architect whose pre-WW2 work reflected the key aesthetic and functional principles inherent to the 'Chartre d'Athénes', as testified by his iconic drawings for the *Hochhausstadt* (High-Rise City) from 1924. Yet after WW2, his attention shifted from such abstract urban proposals towards the studies he had been developing since the late 1920s on European precedents to the Garden City. This led him to give greater emphasis to lower housing densities and to study the relations between transportation systems and different settlement units within a region (Waldheim 2010). In 1949, he published a book where he posits his key ideas for a 'New Regional Pattern', a horizontal network of suburban settlements with housing, farms, light industry, commerce and civic buildings, whose physical structure was dependent upon topography, hydrology, vegetation, wind patterns and other natural phenomena (Waldheim 2010). While the influence of the Broadacre City is explicit, Hilberseimer refrains from using the abstract grid and instead accepted territorial conditions as a predetermined landscape feature and a physical structuring element.

From 1959 to 1964, Dutch visual artist Constant Nieuwenhuis (1920–2005) proposed several images for a new form of human habitat, which he called New Babylon—a mosaic collage of urban settlements on elevated corridors spreading over agricultural land. This utopian vision was embedded in Constant's political ideas, namely his proximity to the International Situationist, a leftist group of intellectuals who sought to combine Marxist thought with the artistic avant-garde. Accordingly, Constant envisioned a city where labour was fully automated and the people's lives were nomadic and leisure-based—however, even in such context, the agrarian aspect of New Babylon was still somewhat of a backdrop for the urban element (Marot 2019).

[3]In the chapter titled 'TROIS RAPPELS A MM. LES ARCHITECTES' [sic].

A similar problem can be observed in the Agricultural City project (1960) by Japanese architect Kisho Kurukawa's (1934–2007) with its urban mat raised above stilts over agricultural land (Marot 2019). Kurokawa designed this proposal in response to a typhoon in Ise Bay, and it demonstrated the architect's involvement with Japanese Metabolism. The Metabolist Manifesto of 1960 advanced future designs for a coming world, envisioning solutions for problems different and extreme territorial situations, where design and technology—applied to architecture, urbanism and beyond—were understood as "a denotation of human vitality", and therefore, a metabolism (Noboru Kawazoe, quoted in Koolhaas and Obrist 2011).

The obsession with commercial culture inherent in 1960s Pop Art placed great emphasis on the ways food was publicized and commercialized. Suffice to think of the emblematic images by Andy Warhol (1928–1987) of Campbell's soup cans, Coca-Cola bottles or the banana on the cover of the Velvet Underground and Nico album (1967), all of which had a lasting effect on art. But these are not all. The oversized sculptures of Claes Oldenburg (b.1929) often represented popular food items of North American society. The aesthetics of food advertisement were often a source of materials for the early collages of Eduardo Paolozzi (1924–2005), like 'Refreshing and delicious' (1972) with its Coca-Cola ads. When realist painting gained a new breadth in North American art, some of its most important examples were images of food, including the gumball machines of Charles Bell (1935–1995) or the diners and restaurants in the urban landscapes of Richard Estes (b.1932). Such imagery testifies to the taste of the new consumer society in the 1960s, somewhat echoing the still life paintings with food and flowers, which popularized in art of late Mannerism, the Baroque and the Rococo, from the marked scenes of Pieter Aertsen (1508–1575) to the bourgeois meals of Jean Simeon Chardin (1699–1779) and Frans Snyders (1579–1657). In Portugal, Baroque painter Josefa de Óbidos (1630–1684) often painted this type of scene, constructing a sense of abundance through the lush details of fruits, bread and sweet pastries.

By the time, Pop Art and this new consumer society were emerging in the West, Portugal was still living under a dictatorship, which among other serious restrictions, limited the access of the Portuguese to the cultural developments in foreign countries. However, a kind of 'post-pop' emerged later in the country, where the visual strategies of pop aesthetics were matched with a self-conscious political stance (Vasconcelos and Rosas 2018). Food and food advertising also had a role in this national 'post-pop', from the drawings made from chocolate wrappers by Lourdes Castro (b.1930), to the colourful paintings of Teresa Magalhães (b.1944), Eduardo Batarda (b.1943) or Carlos Carreiro (b.1946) where food items were often the central motifs.

In Portugal, by the 1960s and 1970s, balconies in city homes were still often used for cultivations, mostly among inhabitants whose origins were on the countryside but had migrated to cities. Home cultivation—now carried in the context of urban housing—was a way to face the expensiveness of urban life by spearing money through food cultivation for self-sustenance. Such practices are testified by surveys on housing habits, conducted at the National Laboratory for Civil Engineering (*Laboratório Nacional de Engenharia Civil*—LNEC) in a research team led by architect Nuno Portas (b.1934) (Portas and Gomes 1963; Pereira and Portas 1967; Pereira and Gago 1974; d'Almeida et al. 2020; Marat-Mendes et al. 2021a). This practice seems to have slowly withered as these populations increasingly aspired to the common practices of the modern bourgeois home.

When British architect Colin Moorcroft (b.1947) organized the small anthology 'Designing for survival' (Moorcroft 1972), invited by the *Architectural Design* journal, he highlighted water, agriculture and food access as key concerns for territorial organization, architecture and urban design. Moorcroft collected studies, projects and articles from architects, engineers and architecture students, some of which unknown to the public, but all sharing an interest in the contribution that architectural and urban design can give towards countering the evident environmental dangers of the epoch. Concerns over agrarian territories are directly understood for their productive aspect, and their relationship with cities is in all senses more than a mere

landscape problem. It is interesting to notice the materials Moorcroft collects to present this idea, some of which stand out to the contemporary reader for anticipating many problems (and solutions) of current literature on these subjects.

From Nick Roberts, an architecture student at the London Architectural Association, Moorcroft presented a set of proposals for spatial, productive and community organization resulting from a study on the Welsh village of Peterchurch. Such proposals were meant to reverse urban decay by improving the self-sufficiency of small communities through the collective development of a network of farm communes and village cooperatives. The article, titled 'Alternative rural development' focused on creating and growing small-scale production of clothing, furniture, food and biotechnic equipment, part for local consumption and part for trade, to ensure links with similar communities. Food was the priority production, with distribution centres and cooperative markets integrated in the village fabrics, since, as the author states, "For neighbourhood groups to have true political autonomy it is essential that they should have a measure of control over their basic resources, food and energy" (Nick Roberts, quoted in Moorcroft 1972: 425). Communal store provisions and sharing-based economy were the touchstones of this organization. The territory was reconceived for its potential for food production, articulating horticulture, semi-intensive agriculture, agroforestry and grazing areas, as well as ponds for fish, ducks, algae, reeds and grass on riverbanks.

A study by Dave Harrison, titled 'Food and cities: levels of manipulation', also presented by Moorcroft (1972), submitted that both city and countryside are fundamentally transformed with the growth of the agrifood industry, with two interrelated possibilities arising: individual or communal food production and independent systems for buying and distributing, both resulting in changes of diet. Another article, by Malcom B. Wells (1926–2009), was provocatively titled 'An ecologically sound architecture is possible'. The author enlists 15 things that wild land does

> (1) creates pure air; (2) creates pure water; (3) stores rain water; (4) produces its own food; (5) creates rich soil; (6) uses solar energy; (7) stores solar energy; (8) creates silence; (9) consumes its own wastes; (10) maintains itself; (11) matches nature's pace; (12) provides wildlife habitat; (13) provides human habitat; (14) moderates climate and weather and (15) is beautiful (Malcom B. Wells, quoted in Moorcroft 1972: 434).

Following a sensibility inspired by US Libertarian writer Henry David Thoreau (1817–1862), Wells submits that architecture can only match number 13 (providing human habitat) and does so at any cost, failing to see "the miracle in everything around us" and thus constituting an "ecological failure" (Malcom B. Wells quoted in Moorcroft 1972: 434).

'Agronica', the 1993 utopian project of Italian architect and former Archizoom member Andrea Branzi (b.1938), also proposed a settlement model that made use of food supply as a key activity, with the architect reanimating "the long tradition of using the urban project as a social and cultural critique" (Waldheim 2010). The name of the city derived from the junction between 'agriculture' and 'electronics', and the urban proposal sought to hybridize urban buildings, making them partly fluid, nomad and changeable according to seasonality and to the porosity of agricultural fields and activities, with agricultural posts as structuring landscape elements (Marot 2019). The frailty of buildings and their linear development emphasized the permanence of agrarian land, the key to the whole urban model, emphasizing the importance of the environmental aspect of urbanism (Waldheim 2010).

Throughout most of modernity, and in spite of the original ideas prompted by several architects, the conception of the city as a non-productive territory became unquestionably dominant in the West and consistently ensured an estrangement of urbanites from the origin of their food (Steel 2008). This is concomitant with the estrangement of the food system from most spatial planning policies, identified nearly two decades ago by Pothukuchi and Kaufman (2000) in the US context, but which might as well apply to other realities in the Global North (Marat-Mendes et al. 2021).

Some positive signs started to emerge from the growing research and policies on sustainability, prompted by the publication of the Brundtland Report (UN 1987) and, less conspicuously, by the report of the Club of Rome (Meadows et al. 1972), which advocated for the displacement of economic growth as the chief societal goal.

In the late 1990s, when Richard Rogers was commissioned to conduct studies on sustainable urban form, the concept of metabolism acquired great importance. Rogers (1998) proposed the compact city theory, explaining its potential to approach a desirable circular metabolism, i.e. where outputs such as waste and materials could be recycled and reused within the production system. Yet while Rogers' use of metabolic notions inspired a new breadth of interest on this subject, one fundamental aspect was left out of both the compact city model and many of its critiques: the food supply.

The growing detachment between these concerns and urbanism is surprising, considering that the importance of food in relations between societies and nature has been acknowledged in other areas consistently. This includes the natural sciences (for instance, Darwin 1871; Odum 1975; Alier 1977; Fischer-Kowalski 1998) but also social anthropology, which has noted the role of food in symbolic cultural values and even in the organization of non-Western societies into clans and phratries (Frazer 1910, 1911; Lévi-Strauss 1962, 1964; Douglas 1966; Descola 2001). A key work regarding these issues is Colin Turnbull's (1924–1994) powerful ethnography with the Iks of North Uganda, a people devastated by hunger (Turnbull 1972).

Indeed, behaviours and values have a fundamental impact on food systems (Timmer 2010), which extends to concerns on sustainability and sustainable use of cities (Tibbs 2011; Lo 2016; Marat-Mendes and Borges 2019). It is not by chance that in the several articles collected by Moorcroft (1972), habits and lifestyle were often mentioned and observed as the keys to achieving more sustainable habitats and construction technologies. Sustainability transitions are often dependent upon domestic and community behaviours (Lo 2016), and the generalized conditions of material wellbeing in the West seem to have given rise to a growing concern for non-material values, favourable to ecological preservation (Tibbs 2011).

Two examples that are particularly relevant to understand contemporary food systems are the works of German photographer Andreas Gursky (b.1955) and Canadian photographer Edward Burtynsky (b.1955). Among Gursky's uncanny photographs are included images of the food system economies of scale, like the depressing livestock facilities of the American prairie, or the colourful but crushing commercial stands of mass-produced food items, like his iconic photograph '99 Cents' (1999). Also focusing on industrial production, Burtynsky often depicts the Chinese context, the great competitor of the USA in the capitalist West. In his photographs, the limit between aesthetics and documentation is blurred, as in 'Manufacturing #17: Deda Chicken Processing Plant, Dehui City, China' (2005), where we see an endless sea of factory workers packing chickens. These people seem reduced to mere objects, no humanity about them, smashed by the gigantic assembly line they integrate.

In contemporary culture, food has a very significative place (Marat-Mendes and Borges 2019). Suffice to think of highly popular cooking contests like 'Chopped' and 'Masterchef', to entire TV networks like 'Food Network' and countless YouTube channels, from recipe repositories like 'Tasty' to food tourism to successful cooking shows like 'Babish Culinary Universe' and 'How to cook that', some with incredible audience reach, and with its protagonists publishing successful cookbooks.

The book and film series about psychiatrist/cannibal Hannibal Lecter, created by writer Thomas Harris (b.1940), spawned the popular and highly-acclaimed films 'Manhunter' (1986) by Michael Mann (b.1943), 'The silence of the lambs' (1991) by Jonathan Demme (1944–2017), 'Hannibal' (2001) by Ridley Scott (b.1937) and 'Red Dragon' (2002) by Brett Ratner (b.1969). This was revamped in 2013–2015 in a NBC series developed by Bryan Fuller (b.1969), which displays detailed (and highly meaningful) accounts of food preparation. Julia Ducournau's (b.1983) film 'Raw' (2016) focuses on the life of a vegetarian girl who accidentally eats meat and starts feeling uncontrollable urges, which radically shift her eating habits, turning her into a cannibal. 'Butcher's Block' (2017), the third season of Scy-Fy horror

anthology series 'Channel Zero', created by Nick Antosca (b.1983) tells the story of a once-prosperous meat factory, which functioned as a cover-up for a cannibal family. 'Swallow' (2019) by Carlo Mirabella-Davis (b.1981) focuses on the anxiety-eating habits of its protagonist, who often eats pins, thumbtacks and batteries, eventually diagnosed with pica (a disease that leads to the eating of inedible objects). The series 'Servant' (2019-ongoing) created by Tony Basgallop (b.1968) for AppleTV has a chef as its co-protagonist, and the scenes of sophisticated food preparation lead to a lugubrious climax at the end of season 1, where a special declicacy is prepared with an umbilical chord. Yet the most striking example of food being assimilated into the themes of recent film or television is perhaps the film 'Upstream color' (2013) by Shane Carruth (b.1972) an enigmatic and powerful example of art reflecting upon the 'invisible' role of food in our lives, as the film tells a wild love story derived from an intricate poisoning scheme to which the nearly-complete food system is instrumental.

Hunger also has great symbolic charge in contemporary culture. We highlight recent novels by Portuguese writers, namely 'Estuário' (Estuary) by Lídia Jorge (b.1946), and 'Um bailarino na batalha' (A Male Dancer in the Battle) by Hélia Correia (b.1949), both of which take the dystopian aspects of the present and (more directly or less) anticipate a future marked by depletion and deprivation, in Correia's (2018) case announced already by the very contemporary tragedy of refugees crossing the seas to reach Europe, in Jorge's (2018) by the deprivation that remains in a significative part of the African continent.

Another aspect of great relevance is the increased attention placed upon dietary regimes, with a growth of vegetarianism and veganism, calling for a reconsideration of animal welfare and rights, as well as the environmental pitfalls of industrial livestock. A particularly compelling observation of this problem can be (prophetically) found in an essay by American fiction writer and essayist David Foster Wallace (1962–2008) titled 'Consider the Lobster. In this now iconic literary essay, Wallace chronicles his own attendance to the Maine Lobster Festival, followed by a meditation on how lobster was once a disgusting food served to prison inmates but evolved to be "posh, a delicacy, only a step or two down from caviar" (Wallace 2004: 238) as soon as it was discovered that if the animal was boiled alive, its meat would taste good. By describing the cooking process in painstaking detail, Wallace challenges the reader to consider this meal ethically.

At a time when such concerns have moved to the forefront of food debates, alongside a recognition of the importance of eating vegetables, the way food is produced and distributed deserves reconsideration, especially in cities, where food tends to arrive from the outside.

Being entangled with the city and its organization, the problems that are prone to public debate must return to the architectural agenda, if we consider architecture from a sociologically rooted perspective (Almeida 1964). Responding to particular social challenges, creating an ethically charged urban space that is formally relevant from the perspective of aesthetics was once key for architectural creation, at a time when architects actively participated in planning and design (Almeida 1964; Marat-Mendes et al. 2021b).

Indeed, the imbrication of ethic and aesthetic phenomena—central to architecture and urban design—is not a frivolous problem. Quite the contrary: it is a historically contingent interplay involving deliberation, infrastructuring and forms of governance (Gandy 2004). It is in this relationship that, we submit, creative solutions will arise to make urban food systems more sustainable. It is the design-led approach to everyday life that produces the most innovative answers (Ballantyne-Brodie and Telalbasic 2017). In such framework, design responds to the constant balance between supply and demand, using already existing decision-making channels. Collaborative approaches to design can galvanize service systems, with designers helping to empower citizens and institutions in creating new food services effectively define new cultural meanings with potential to influence policies and new practices for local decision-making (Ballantyne-Brodie and Telalbasic 2017).

One fundamental example of how the food system, considered from a local perspective, can inspire architectural and urban design can be found in the model of Continuous Productive

Urban Landscapes (CPUL), which proposes corridors of different types of agriculture, making urban ecological structures more productive, and linking them with the countryside (Viljoen et al. 2005; Viljoen and Bohn 2014). This paradigmatic vision, brought forward by architects, is one of the most interesting examples of a disruption with the modern partition between the city and the hinterland. The ability of urban agriculture to tap into resource and waste streams, reducing the costs and requirements with infrastructure is also highlighted in this territorial strategy (Viljoen and Bohn 2012). The proponents of the CPUL concept also acknowledge the barriers posed by planning instruments, as thus suggest its development may depend upon the creation of an 'action plan' to articulate general planning solutions with particular design solutions, allowing an adequate transition from the larger scale of a collective vision to the particular places and contexts where particular proposals are developed by smaller groups (Viljoen and Bohn 2012).

An international project titled CitAgra, gathering researchers from several universities, and coordinated by Tomasz Jelenski from the Krakow University of Technology, which started in 2017, focused on studying the potential of urban cultivation as a catalyst for socio-economic sustainability, harnessing urban forestry and agriculture towards the organization of Nature-Based Solutions for regenerating neighbourhoods and enhancing urban environmental services (Jelenski 2019). Among its chief, concerns were increasing intensity of underused urbanized land, regeneration, adaptive reuse of industrial estates, enhancing green areas and creation of biologically active surfaces of different types. Importantly, CitAgra was meant to counteract the existing trends towards sprawl, fragmentation and gentrification, thus its proposed agro-urban solutions were meant to be economically profitable from a social perspective as well as self-sustained, based on local public–private partnerships, with public participation, seeking sustainable regeneration through small-scale initiatives (Jelenski 2019). Blue–green networks were conceived to balance urban cores and green belts were extruded from river valleys, industrial buffers and agrarian wastelands (Jelenski 2019).

These more recent proposals may have a relevant follow-up in future territorial strategies, since urban trends such as guerrilla gardening, small-scale food producing and processing (Reynolds 2008), rooftop food production (Rodriguez 2016; Marat-Mendes 2017; Orsini et al. 2017), family urban farms (Olufemi 2016) and edible districts (Ghosh 2016) have emerged in scholarly research—and beyond it—as design solutions and as forms of urban activism towards sustainability.

A Transition of Metropolitan Food Systems?

Current international agenda, including the '2030 Agenda for Sustainable Development' (UN 2015), the 'New Urban Agenda—Habitat III' (UN 2016) and the 'Urban Food Agenda' (FAO 2019) all urge planners and policymakers to tackle unsustainable patterns of spatial organization, reconsidering the real potential of green spaces and seeking to link the city with the countryside, while accepting food-production as a valid element within urban areas. Thus, the estrangement of urbanites from their food must no longer stand. This represents a formal recognition of the dangers inherent to the estrangement of urbanites towards the food system.

Food-related problems are rising all around the world, over land conflicts, food riots, price surges and human rights (Sonnino 2013), owing to the globalized reliance on cheap crops from third world countries, which erase biodiversity and traditional agricultural methods, while inflicting tremendous misery and poverty upon workers—all of which are problems already clear for decades (Castro 1946; Moorcroft 1972). Some cities are thus accepting a role as actors in their food systems (Sonnino 2013) and international agenda are increasingly emphasizing the need for local provision supply chains (FAO 2019). The Milan Urban Food Policy Pact is the most notable example of this situation, with impact at the municipal scale since its implementation in 2015.

Planning for a sustainable environment requires balance between social, economic and physical systems, which we must learn how to consider at several scales. Currently, 55% of the world population lives in urban areas, and this is expected to increase to 68% by 2050 (UN 2016). This growth rate and the resulting unbalance between urban and rural populations challenge us to revise and critique how cities are managed, planned, and how spatial planning —from land-uses to architecture—may contribute to a desirable sustainable transition.

Yet, as has been abundantly clear at least since Rogers' (1998) book 'Cities for a small planet', in order for spatial planning to positively contribute to this sustainable transition, it will not be enough to consider the socio-metabolic aspect of cities. The morphological dimension will also need to be considered (Baccini and Oswald 2003).

Marat-Mendes' (2002) comparative study of neoclassical urbanism proposes four 'ground-rules' of sustainable urban form: adaptability, continuity, flexibility and resilience. Each of these entails different types of urban transformation, including in design, form and materiality, but also in use or function, each having specific sustainability impacts. As cities and metropolitan regions continue to change in the twenty-first century, these 'ground-rules', as well as the historical and disciplinary analysis they encapsulate, may find application in the wider context of land-use and unbuilt elements of human habitats.

However, a sustainable transition through circular socio-metabolisms has gotten irregular acceptance within key instruments and policies of spatial planning in many countries. Most often, sectoral policies regarding energy consumption or transportation systems have been promoted, downplaying the fact that sustainability pitfalls exceed the problems of any specific sector. In some cases, this also exposes the limitations of planning structures based on 'management' rather than actual 'planning', ensuring relative liberty for urban development by the private sector, while delaying necessary integral transformations towards sustainability and resilience that require coordination and planning. Beyond the agenda established by the UN, other initiatives keep prompting this change, as is the case with the Green New Deal for Europe,[4] which proposes policies for transition, overturning austerity capitalism and the intensification of socio-economic inequalities.

One way we may kickstart this transition would be to go 'back to basics', rethinking cities and their systems from the very roots: housing, water, electricity, transportation, internet and food. While some of these are widely acknowledged in planning instruments, others, particularly water and food, are strangely absent (Marat-Mendes 2016). Yet all are susceptible of being changed towards new models, which promote balance and quality for environments and for people.

When Pothukuchi and Kaufman (2000) surveyed the relevance of the food system in American planning agencies, they concluded that food-related activities were usually understood as a responsibility of the private sector, from which public institutions must refrain. Such perspective lingers today, in spite of the fact we live in a world where one in eight people go hungry daily (Olufemi 2016), with States rushing to bail-out private companies and banks at the expense of public sector services, prompting new forms of poverty, including at the nutritional level (Morgan 2013).

In the transition from an industrial to a post-industrial context, the city, once a material processor, becomes an information processor (Ravetz 2000). This post-industrial transition, which many cities are still undergoing, does not however change its need for food—nor for industrialized goods. Regardless of the dominant economic structure, urbanites always need to eat. Thus, all aspects relating to the origin and production of food, nutritional behaviours, economic exploration systems, labour, domestic activities and even leisure have to be considered when envisioning new habitats (Reisch et al. 2013). Moreover, one still needs to question how, in a world that produces such immense wealth, is it possible that food is not yet

[4] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en.

acknowledged as a basic and fundamental human right—which it is not, considering that hunger has still not been mitigated.

Food geographer Roberta Sonnino (b.1968) has proposed that relationality is the most important feature of the recently emerging foodscape, since cities are starting to articulate their food system with wider sets of public goods and accepting a role as actors in food access. This author also points out the critical importance of the food system in fuelling local resilience, including through sustained food security and short supply chains (Sonnino 2013, 2016). This vision is in continuance with long-standing debates about strengthening strategies for local development through municipal empowerment (Lopes 1991) or otherwise, and Sonnino (2016) clearly frames in cultural and political terms the inclusion of the food system in urban planning, particularly at the municipal scale.

However, in most countries at least, official public policies on the food system are scant, fragmentary and seldom move beyond the local scale. The prevalence of the private sector remains unchallenged, and scholarly research seems to have moved quicker than political change. Since the agri-food industry is highly fragmented and presents great resistance to change (Brinkley 2013), it passes its fragmentation to other realms, including the spatial, and specifically the urban.

Achieving a more sustainable system raises a wide array of problems (spatial, social, political, economic, institutional and environmental), confirming how fundamental to our lives it really is. Thus, it is entangled in the paradigmatic problems of our time, including the rise of neoliberal politics, social inequality and the power of increasingly unregulated markets (Lipovetsky 2004), all of which have very significative impacts upon cities and their surroundings (Drago 2017). Any desirable change in spatial planning and food policies must, therefore, encompass a larger rethinking of institutional structures and power distribution underlying urban systems (Cohen and Ilieva 2015; Purcell and Tyman 2015).

Our time seems marked by the sensation that while we have outgrown the institutions that regulate our lives, we are still struggling to figure out what new institutions can be envisioned, making creativity (and even radicalism) more important than ever (Bartlett 2017). Urban systems—deeply implicated in the division of society in space—and food systems—ensuring a human basic need—provide important points of view to envision new conceptual frameworks and corresponding institutions, responding more closely to the demands of populations across several scales of space and of governance (Marat-Mendes et al. 2015; Oswald and Baccini 2003).

Planning for Change

The planning situation in many European countries has changed from a rationalist perspective, in which the institutions of the State define planning and its implementation, towards more open-ended processes where government is replaced by governance and the State acts as a facilitator and mediator between actors (Ferrão 2011). Yet, if the perspective of governance is in principle meant to allow for everyone to participate or partake in planning decisions and processes, in practice governance has mostly been a decision-making process, through which the private sector more easily imposes its needs and interests upon space (Ives 2015). A tension has long been felt in the practices of urban design and architecture, namely between bottom-up flexible policies allowing for diffuse local change, and a centralized planning system uncomfortable with informal change, a tension which the spatial fragmentation of food systems illustrates perfectly (Brinkley 2013).

Recent studies conducted on South Africa demonstrate how the imposition of these interests is particularly harmful to traditional and emerging economies and informal food systems, as small shops and productions are increasingly replaced by shopping malls and economies of scale, with important impacts upon employment and livelihood for locals

(Frayne et al. 2009; Battersby 2017). As such, informal and emergent practices within the food system may be threatened by a planning system where the lead role is, in practice, in the hands of the private market.

Weaver (1984) argued that the very basis of most planning structures amount to a spatial translation of the capitalist system, thus it is little surprising that such informal or emerging practices are difficult to integrate in regulatory planning. For instance, a study on urban agriculture in the Lisbon hinterland suggests that an economic upscaling should be a part of its future development (Delgado 2018). However, this could also translate into a normalization or transformation of urban agriculture into a form of agri-food business uncapable of competing with contemporary economies of scale or, in a more depressing alternative, it could lose its popular character in order to be able to compete.

The problem of economic scale is often a central theme for food system studies. In general, there have been three major lines of scholarly approach: (i) the continuation of dominant agri-food business models; (ii) the call for alternative food systems and (iii) a 'third way' that moderately accommodates elements from the two previous models (Viljoen and Bohn 2012). Most planners tend to think in terms of large scale, which is typically not very welcoming to more 'localized' initiatives for the urban food system (Viljoen and Bohn 2012). With regards to agriculture, although its practice could still be verified in worldwide cities throughout the twentieth century and particularly at times of crisis (Iaquita and Drescher 2010), only recently has it been acknowledged by international institutions as a legitimate part of urban food systems or as a key practice to be promoted and protected in the context sustainable transitions in both the territory and the layout of food access (FAO 2019). If the modern dynamic of spatial organization divided production and consumption between countryside and city (Weaver 1984), we currently witness the unsustainable consequences of such severance. The ever-growing food industry has been for decades pushing production facilities further and further away from consuming cities—thus creating a need for long-distance transportation, air pollution, poverty and land conflict in third world countries where food production physically takes place (Castro 1946; Moorcroft 1972; Spaargaren et al. 2014).

Other than consumption and production spaces, an important part of urban planning for better food systems is waste disposal. British geographer Matthew Gandy (b.1965) has pointed out how modern technology and modern society brought about a new emphasis on infrastructure, constructing a 'hidden city' of sewages and hydraulic systems running underground and allowing for sanitary conditions to be attained (Gandy 2004, 2014). Other forms of infrastructure—roads, highways, reservoirs, garners, waste management stations, etc—remain visible and fundamental for the functioning of cities. In the food system, visible and 'hidden' structures and infrastructures interplay. Access to water is a key aspect of agriculture, whose soils are regulated by municipal plans, often without considering such important aspects for sustainability as land-use intensification (Erb et al. 2016). Factories and logistics centres mediate between produce and its public availability in all different kinds of selling points. But such factories are treated, in most spatial planning instruments—and often on popular perception—as generic elements of the industrial fabric. Planners stipulate industrial areas without tackling the eventual importance of food transformation within a regional scope, with the destination of produce depending upon the will and the interests of owners.

A similar situation applies to food commerce, although this is arguably the most visible aspect of the food system. Planning regulations do not usually establish any fundamental difference between the commerce of food and of other items. Restaurants, neighbourhood shops, supermarkets, hypermarkets, taverns, wholesalers, delis, bakeries, quick-service restaurants and coffeeshops (Pothukuchi and Kaufman 2000; Moudon et al. 2013) are essential parts of any city's economy, but their high-potential role for resilience policies, by forming a network of food access and thus preventing the formation of food deserts, is unacknowledged in most planning structures.

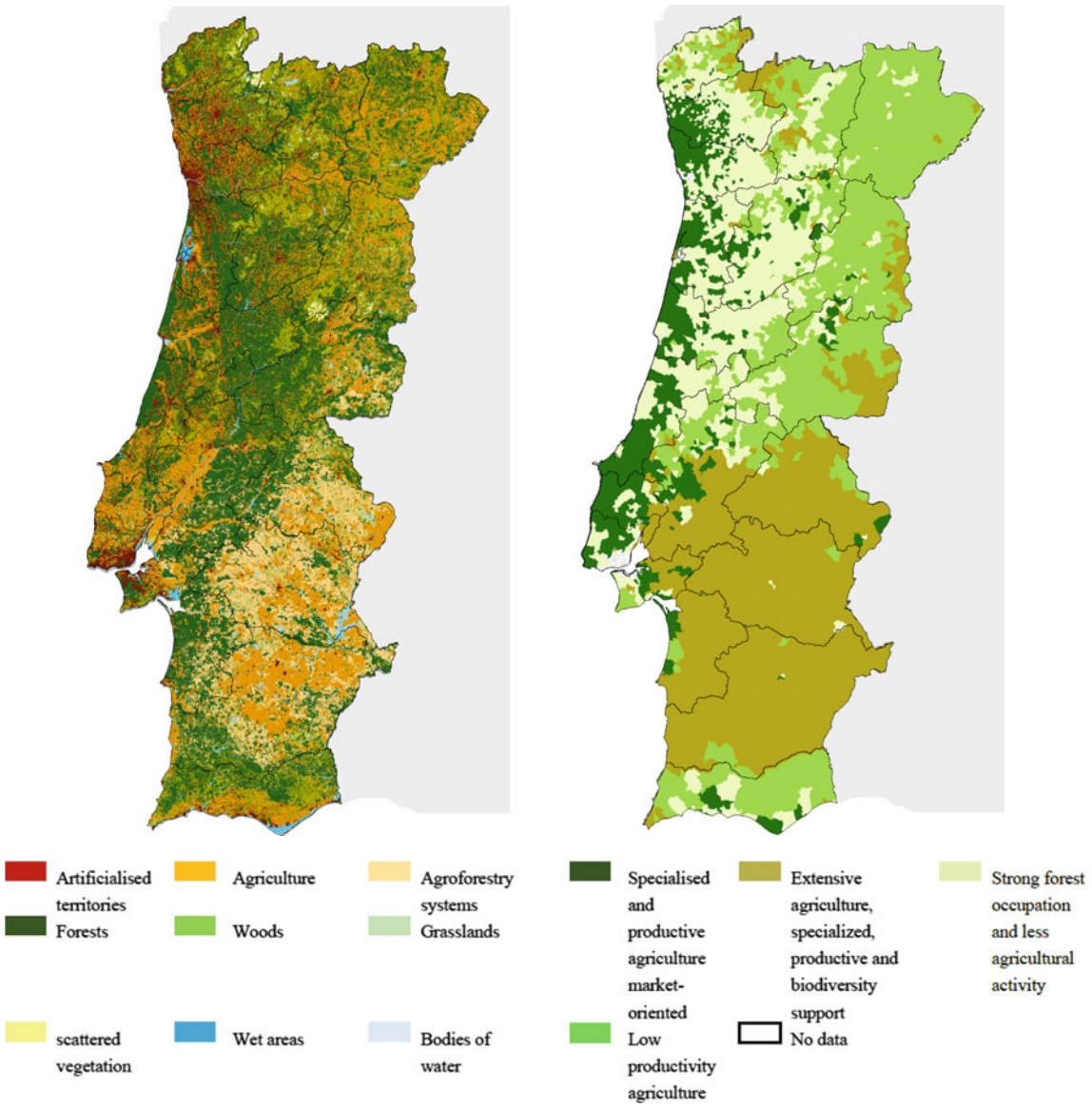

Fig. 2 Land Use and Occupancy Chart Mainland Portugal—Megaclasses (left) and Territorial profiles for agriculture (right). Source: PNPOT—Programa Nacional de Ordenamento do Território, 2019

Urban planning, urban design and architecture, as practices that interpret and define (at several scales) forms of spatial organization may reinvent themselves by emphasizing the importance of civic engagement and social movements, some of which already advanced (unprofessional) design solutions for existing problems (Ballantyne-Brodie and Telalbasic 2017). In some cases, the pathway to sustainability implies taking these actions seriously, learning from 'niches' and popular activities, understanding how they may be scaled-up and, even more importantly, how they may be articulated, so that different phases of the food system are integrated within urban territories, instead of segregated (Crowley et al. 2021).

As such, designing solutions for a more sustainable food system must start from an understanding of specific territories and a study of the activities already taking place in them. Creativity, willingness and adequate use of available resources—including space itself—are paramount for sustainable transitions. But so is knowledge on the conditions of the territory, past and present, from which new pathways can be derived.

In this Atlas, we propose that the food system offers a sustainable alternative for urbanism, one that promotes self-reliance and increased resilience, while reclaiming many of the positive principles inherent to architectural solutions across modern history which have included a concern for food. Following the recommendation of the FAO in their 'Urban Food Agenda' (FAO 2019), we must re-learn how to observe (and design) cities, not contained within their administrative limits, but as elements within a city-region. An assessment at the city-region scale is key to imagine a re-localization of food supplies, with a particular impact on the possibility of decreasing food miles, i.e. the distance run by foodstuffs from production to consumption (Brinkley 2013) and to decrease the detachment of urbanites from the origin of their food. This demands not only a reconsideration of metropolitan rural spaces but also more creative approaches to green spaces within urban settlements themselves, which may prove important to cover part of familiar consumption (Viljoen et al. 2005). In order for a sustainable transition of urban food systems, what is necessary is innovative policies, which acknowledge and correct systemic problems in food-consumption patterns (Reisch et al. 2013).

The Lisbon Region

In this Atlas, we will focus on the food-related activities of one specific area, the Lisbon Region. Its limits were established for the first time in 1959,[5] precisely when the dictatorship wished to order a Regional Spatial Plan—which would eventually be finished in 1964 but not approved, as will be seen in Chap. 2. In 1991, the same territory would form the basis of the Lisbon Metropolitan Area (*Área Metropolitana de Lisboa*—AML), an intermunicipal association meant to promote integrated policies regarding the development of the region. In the 1950s, this territory comprised 16 municipalities, distributed around the Tagus River: Lisboa, Loures, Vila Franca de Xira, Oeiras, Cascais, Sintra and Mafra on the Northern Bank, and Almada, Seixal, Barreiro, Moita, Montijo, Alcochete, Sesimbra, Palmela and Setúbal on the Southern Bank. Since then, however, two processes of administrative autonomation gave rise to two additional municipalities: Amadora became independent from Oeiras in 1979 and Odivelas from Loures in 1998. However, either the role of regions and of intermunicipal associations is unclear in the Portuguese political and administrative context.

In February 2019, the Portuguese Parliament welcomed the 'Forum for Public Policies', an event that gathered politicians (mostly from municipalities) and scholars to discuss, among other political problems, the need for regionalization in Portugal. One of the key moments of the Forum was the speech from Prime Minister António Costa (b.1961),[6] who saluted the discussion on regional governance, but noticed the need to safeguard it from political manoeuvres in the campaign for the upcoming election (to be held in October 2019). Costa was re-elected as Prime Minister, but 4 months later already hinted that regionalization is a subject after the next election (Almeida 2021).

To be sure, this debate is everything but new. And the same is true for the postponement of the debate itself. As architect Nuno Teotónio Pereira (1922–2016) noticed when regionalization failed in the first attempt, there is a strong tradition of regional identity, that is cultural, economic, and social (Pereira 1994). Teotónio Pereira dedicated several chronicles to the problem of the Portuguese regions back in 1994–1995, when this discussion was happening under the government led by then Prime Minister Aníbal Cavaco Silva (b.1939),[7] who opposed regionalization. Although this process was met with a change in political power, with

[5]Law 2099, published in Diário do Govêrno, 186/1959, Série I, 14-8-1959.

[6]Became Prime minister from 2015, re-elected in 2019.

[7]Elected Prime minister from 1985 to 1995.

António Guterres (b.1949)[8] being elected Prime Minister in 1995, regionalization never came to pass in Portugal. The 1998 referendum had the participation of less than half the population of a country that was not used to voting in referendums, and there was a clear lack of political will to change a system in which power was always strongly centralized in Lisbon (Pereira 1994). In the end, over 62% of voters refused regionalization, with some attributing the responsibility to the proposed regional organization. The debate was dead for more than a decade. The refusal crosses partisan lines, and regions seem to have been avoided by the two centrist parties who have traditionally governed the country since the 1976 Constitution. Arguments against regionalization often are based on the fact that Portugal is a relatively small country, or in the need to not enlarge the political class with more institutions and more titles being created. However, these arguments leave out the striking fact that, however small, Portugal is a territory with historically and geographically self-evident regional differences, but also with very marked contrasts between city and countryside, as well as between inland and coast.

Moreover, the argument that territorial extension is too small for regions ignores that, while these do not exist, power is highly centralized in Lisbon, and there is no intermediary scale between national and local political power. Some have defended that strengthening the powers of municipalities—a process which has begun with the 1974 Revolution itself—is enough to decentralize power, but this idea ignores the fact that, particularly in small municipalities, local power is extremely exposed to corruption: for instance in 2004–2008, the majority of legal processes for corruption was moved against local power (Lima 2011). In 2018, 48% of corruption processes were also brought against local power, the highest percentage ever (Marcelino 2019). So, it would seem that an intermediary scale of power, between the central State and the municipalities, would be a way to balance inequalities, increase political accountability, and create policies that make sense within the specificities of each region. Moreover, as Teotónio Pereira already had noticed, many problems extend beyond municipal borderlines, and therefore cannot be solved by municipalities themselves, as is specially the case with the territory (Pereira 1994). This indictment is abundantly confirmed by the study of the food system, especially in metropolitan regions.

The problem of the territory is the touchstone of regionalization, for while there are indeed social, cultural and economic differences between Portuguese territories, these differences are also expressed in terms of geography and of the corresponding settlement types.

Portuguese geographer Orlando Ribeiro (1911–1997) has noticed that the division of the Portuguese territory has been a constant aspect of its political formation and administration, finding traces of it back to the thirteenth century. He, furthermore, identifies in the fifteenth century historical chronicles of Fernão Lopes (1385–1460), the first Portuguese historian, a list of the then called Portuguese comarcas (counties): "antre Doiro [sic] e Minho, Trás-os-Montes, Beira, Estremadura, antre Tejo e Odiana [sic], leaving out the Kingdom of Algarve" (Ribeiro 1987: 102). The names of these counties were deeply descriptive of territorial elements like rivers and mountains. Across history, the particularities of these regions became ingrained in several cultural aspects, but the Portuguese democracy has not granted them political autonomy, instead distributing power at the municipal scale alone. In terms of spatial planning, and despite the fact that regional planning has existed in the Portuguese legislation since 1988, few plans have actually been created and thoroughly implemented. However, regional planning and regional communities have long been hailed as the keys to political autonomy and self-sufficiency. Looking back to the roots of regional spatial planning, Weaver (1984) highlights five key ideas that can be found from early thinkers like Charles Fourier to Paul Vidal de la Blanche (1845–1918), Frederic Le Play (1806–1882) and Patrick Geddes, namely: a) a revulsion with the industrial city; b) negative reaction to economic and political centralization; c) a belief in restoration of regional life; d) defence of mixed territories

[8]Elected Prime minister from 1995 to 2002.

Fig. 3 Lisbon Metropolitan Area (LMA) and its location in Portugal. Source: Authors

to avoid hierarchies between city and countryside and e) combination of manual and intellectual labour.

Also noteworthy in this context is the Survey on Regional Architecture in Portugal (which will be discussed in Chap. 4 of this Atlas), published in 1961 with the title 'Arquitectura Popular em Portugal' (Popular Architecture in Portugal). This survey, which focused on

popular, traditional and vernacular architecture mostly on the Portuguese countryside, depicted a considerable variety of construction techniques and forms (AAVV 1961).

As recalled by architect Francisco Silva Dias (b.1930), who participated in the survey, collected materials demonstrated the variation and diversity of vernacular construction within the country, varying from region to region, and disproving the belief in a national style of architecture, held by the Government and, in a different way, by architects of a more 'aristocratic' taste such as Raul Lino (1879–1974) and Fernando Távora (1923–2005) (Esteves and Mestre 1987).

While regions are highly recognizable in the territory and in its traditions, there seems to be a lack of political will to address the decentralization of Portuguese power. In November 2019, the current government decided to relocate its 'State Secretariat for Inland Development' to the municipality of Bragança in Trás-os-Montes, to take it closer to the rural population. However, this effort is hardly capable of handling the problems of highly centralized power and the concomitant hierarchy between city and countryside. Without creating conditions for local communities to have a deciding voice over the territory they inhabit, this decentralization falls short of its political purpose.

To a certain extent, the Lisbon Region integrates the region called Estremadura, although the official formation of a Metropolitan Region around the capital city has somewhat effaced this integration. However, Orlando Ribeiro has noticed the specificity of this region and its internal differences in the following way:

> Traditional provinces, as is known, do not correspond today to administrative divisions, but they are clearly felt among educated people, as well as among their natives. Only Estremadura is an exception in this, perhaps because it is the most heterogenic and because, more than any other province, it had its limits redrawn, being cut northwards and eastwards and expanded to the south of the Tagus river, which was considered as its natural limit for a long time. Thus, it is usual to call the natives of the provinces by their ethnic designation (and they do it themselves too), but no one will call themselves estremenho, just as no one says they *go to Estremadura* or that they will *travel through Estremadura* (Ribeiro 1987: 102—author's italics).

With the 1991 creation of the AML, the relation of the Lisbon Region with the remainder of Estremadura is seldom noticed, a situation that was altered by the COVID-19 pandemic, with the administration of sanitary cordons and of the easement of lockdown measures. Currently, the Lisbon Region includes a vast diversity of activities and types of territories, ranging from the entirely urban—like the Lisbon city—to the entirely rural—like the Great Wetland of Tagus and the Montijo exclave.

In the above mentioned survey on regional (or popular) architecture, the country was divided into six zones—Minho, Trás-os-Montes, Beiras, Estremadura, Alentejo and Algarve—to which six team of architects were assigned. Estremadura corresponded to Zone 4, and its team was led by architects Nuno Teotónio Pereira, António Pinto de Freitas (1925–2014) and Francisco Silva Dias. It was delimited in a very liberal way, between Setúbal, Abrantes, Coimbra and Praia da Mira (AAVV 1961). It is interesting to recall the notes written by the architects about this area, particularly considering that this amounts to descriptions of this territory at such a recent time as the late 1950s:

> Vineyards and potatos occupy great extensions and, nearby Lisbon, the 'região saloia' [rural region] appears to be one of the neatest areas of polyculture. In basalt-based land, cereals are cultivated on open fields. Moorlands and pine forests cover the poorer soils (AAVV 1961: 10—free translation).

> In front of Lisbon […] the Tagus enters with numerous arms through the lowlands. It is a zone of intimate communion between land and water. The tidal mills and the old boats are reflected in the same landscape. On the background, the industrial zones of Barreiro and Montijo (AAVV 1961: 13—free translation).

> […] most land north of Tagus is polycultivated, which means labour and care all year long, demanding a communion between the land and the people, which favours dispersion: on the Centre, between hamlets and settlements, and on the North in small cores or on plain fields resulting from subdivision alongside circulation routes, through a special form, an ordered dispersion, profoundly reflected on the settlement structures – linear, almost without a core and often reduced to a single street marked by houses. […] The

Fig. 4 Rural houses in Cascais (left) and threshing floor in Arneiro dos Marinheiros, Sintra (right). Source: Inquérito sobre a a Arquitectura Regional Portuguesa (1955–1960). Zona 4 (Arquitectos Nuno Teotónio Pereira, António Pinto de Freitas e Francisco Silva Dias) © Ordem dos Arquitectos

> South on the other hand is covered by uniform vegetation or large extensions of the same cultivation, be it rice or wheat. The majority of the population owns no land, and labour is required only a few times a year, for reaping or paring and little else, and this separation between labour and the field favours concentration (AAVV 1961: 17—free translation).
>
> When the core is located on a high place, streets have movement and include ramps and stairwells, alongside ingenious ditches for the fast drainage of floods. Houses are huddled as in nativity scenes. There is a constant use of curved lines, gables and terraces […]. Streets curl or break in small segments for adaptation. Settlements have a nearly organic malleability (AAVV 1961: 26—free translation).
>
> To the structured and compact character of the hilltop or old inland settlements, the agrarian areas of disperse population oppose settlements of disperse elements. Each house is surrounded by a 'courela' [a strip-shaped vegetable garden] and often includes a haystack, a winery and a barn. The alleys and squares infiltrate or are defined between walls and hacks of each house. The street as a fundamental structuring element disappears. Now it results from the shape of properties […] In the ill-defined squares, trails are open by footsteps and chickens are pecking and sheep graze. On a corner, or between houses, are the threshing floor which is individual or collective, as well as the church and a common well (AAVV 1961: 28—free translation).

These descriptions are found alongside a wide array of photographs of settlements, fields and landscapes, and chiefly of buildings. Among these, there are several that illustrate the social and economic aspects of life in this region. It is noteworthy that cities and towns are not heavily featured in the survey, which tended to focus more on the rural territories of Portugal. However, it is still visible that, even on municipalities just a few miles away from the capital city, there is still a predominance of a rural life and of a primary economy, where the landscape often includes windmills, haystacks, granaries, barns and other agricultural implements; where settlements are usually small and old, typical of a society where families stick to the same premises, inheriting and inhabiting the properties of their elders; where fairs and festivals are still influenced by the agricultural cycles and the seasons.

There are still many villages in the Lisbon Region, and even more if we consider Estremadura altogether. But the life they harbour is unlikely to match that which is portrayed in the survey. If the 1974 democratic Revolution brought about, among other things, a liberalization