

Lisbon – European Green Capital 2020: the allotment gardens contribution

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Abstract The main objective of this paper is to define the role and the importance of the urban allotment gardens in the consideration of Lisbon as the European Green Capital in 2020. In the first part of the paper, we seek to trace the historical evolution of vegetable gardens in the context of city development. In the second part, one proceeds to its mapping and its identification and characterization considering the multiple functions that allotment gardens play both to improve the quality of the urban environment and to improve the quality of human life. In this sense, the different ecosystem services that allotment gardens provide to the society are addressed, as well as their contribution to the qualification of Lisbon's urban landscape and urban food systems. For this, we used a research methodology that crossed the field work (the survey of the vegetable gardens), with bibliographic and documentary sources. The present diachronic and diatopic study about urban allotment gardens in Lisbon aims to legitimize the historical model of urban development based on the deeply intricate relationships between the city and the agriculture as a strategy to be adopted in the context of the long-term development of both Society and Nature.

Keywords: Lisbon, vegetable gardens, multifunctionality, ecosystem services, food security

1. Introduction

The cities with an ancient foundation have always maintained a close relationship with the food production spaces, located in their interior or in their immediate periphery. Historically, the city of Lisbon has integrated, in its growth, productive green spaces: farms, conventual spaces backyards, vegetable gardens, orchards, among others. This article seeks to reflect on the historical process of construction and transformation of Lisbon's urban landscape, considering the role and importance of agri-food production spaces. Associated with planned or

spontaneous occupations, these green spaces certify, in any case, the role and importance of vegetable gardens in the city's qualification. This article focuses on the role and importance of allotment gardens in considering Lisbon as recent European green capital. The study about the relevance of vegetable gardens in the urban development process of Lisbon, in spatial and temporal terms, is based on a methodology that crosses the interpretation of old cartography with written sources and fieldwork in the sense of surveying the vegetable gardens. Therefore, it is essential to proceed with the mapping of Lisbon's allotment gardens and their identification and characterization, taking into account their multiple functions and benefits for the qualification of the city's environment and for health and social well-being. The multifunctionality of vegetable gardens (production, protection, recreation) is associated with the different ecosystem services that they provide to society and whose identification and description is made in this paper. From the discussion and reflection about the historical relations between the city of Lisbon and agriculture, results on a significant set of arguments that give allotment gardens, as multifunctional green spaces and local agri-food systems, a key role and a decisive importance in the election of Lisbon as European green capital 2020.

2. Background

The study of the city of Lisbon reveals the important role that agricultural productive spaces have always played in the characterization and evolution of its cultural landscape of intense and continuous human occupation (Telles, 1997). An example of this are the small spaces for food production in historic neighborhoods of medieval origin (Moya and Batista, 2017) or the large farms in its agricultural ring from the 18th and 19th centuries, but also the recent horticultural parks and allotment gardens of the urban parks of the early 21st century. In the inventory and

survey of these spaces (Telles, 1997; CML, 2019) the important role they play in the historical process of occupation and organization of the city landscape is noticeable. In Lisbon, the appearance of a high number of productive green spaces is justified by the favorable natural conditions (fertile soil, water, microclimate, etc.) and by the improvement of land exploration techniques over the generations, as well as by the evolution of humanity itself and their values. The way in which these spaces are distributed across the city, as well as their internal organization, is related to the biophysical characteristics of the territory and cultural characteristics (resulting from the population's own action), and to public policies and urban governance. In this sense, the aforementioned horticultural areas are testimony of the different strategies developed by man in face of the different natural characteristics and of the different economic and social situations of each historic epoch in order to ensure his subsistence, but also their visual delight and recreation. The exhibition about *Lisbon Vegetable Gardens from middle ages to the 21st Century* (Araújo, 2020), which is open to the public until September 19th at the Lisbon Museum, presents a historical and evolutionary perspective of the fascinating universe of urban gardens, through cartography, painting, literature, photography and video, about the territories and paths, practices and narratives, characters, strategies and policies associated with these identity spaces of the city of Lisbon.

3. Methods

The research methodology used, crossed the written and documentary sources with the fieldwork, in order to understand and to map the evolution of Lisbon's allotment gardens, in space and time. The mapping of the gardens in Lisbon (Fig. 1) resulted from the crossing of the analysis of old cartography, mainly from the *Atlas da Carta Topográfica de Lisboa* (Atlas of the Topographic Chart of Lisbon) (Folque, 1858), from the consultation of the *Plano Verde de Lisboa* (Lisbon Green Plan) (Telles, 1997), from the survey of Horticultural Parks (Fonseca, 2020) and the vegetable gardens survey (CML, 2020). The compilation and systematization of the contents drawn from the aforementioned documents made it possible to map the two main types of vegetable gardens: the spontaneous gardens that resulted from the occupation of free and vacant land by the population and the planned gardens that are the result of interventions associated with projects and programs municipal initiative. In addition to the spatialization of the vegetable garden areas and the identification of the type of vegetable garden, the period of construction or installation of these food production spaces, and the area occupied by them was recorded (Fig 1). The analytical method associated with the spatial and temporal representation of vegetable gardens, was completed with a review of the scientific literature on its multiple functions and the ecosystem services, considered essential in the qualification of the environment and life in the city.

4. Results

The allotment gardens perform multiple functions of undeniable importance in the context of the city (Hough, 2004; Aresomena, 2012; Matos and Batista, 2013): (i) ecological-environmental functions; (ii) social and economic functions; (iii) urban and landscape functions; (iv) aesthetic functions. The multifunctionality of these agroecosystems is associated with several ecosystem services (Burkhard and Maes, 2017; FAO, 2021): (i) provisioning services (food and firewood); (ii) regulation services (air quality, soil fertility, flood control, pollination); (iii) supporting services (plants, animals, species diversity), and; (iv) cultural services (aesthetic inspiration, cultural identity, spiritual well-being), which have a direct influence on the quality of the urban environment and on the health and well-being of the population. The benefits and values associated with them have been incremented in view of the significant increase in the number and area of agri-food production spaces. The recent creation of seven Horticultural Parks (Fonseca, 2020) and the expansion of the vegetable garden network, from central to peripheral neighborhoods, contributed to the environmental and socio-cultural qualification of the city.

5. Discussion

In the historical process of construction and transformation of Lisbon's urban landscape, vegetable gardens appear as an intrinsic part of the urban fabric and of the city's experience. From *almoinhas* of Islamic tradition to contemporary horticultural parks, Lisbon's vegetable gardens play an important role in the configuration and qualification of the city. The city and agriculture have always maintained deep relationships. Urban agriculture, practiced in spontaneous or planned allotment gardens, contributes to the reduction of the city's ecological footprint in the sense that it intervenes in natural cycles, namely in the cycle of matter and in the hydrological cycle, closing them through the use of organic waste in production and the reuse of purified water for irrigating agricultural crops. With the transition to agroecology (increasingly evident), the origin of food and its quality is more effectively controlled, contributing to food security and sovereignty. In addition, vegetable gardens are true biotopes of wildlife, preferential habitats for certain fauna species (birds, insects, etc.), contributing to the increase of biodiversity in the city, to its biological balance and physical stability since they occupy spaces that remain free of building, permeable and that are understood as reserves of soils with capacity for agricultural use and support of the urban ecological structure. In this perspective, they play an important role in environmental protection and in safeguarding and enhancing endogenous resources (soil, water, vegetation, fauna) and contribute to the resolution of ecological problems: erosion, floods, recycling of water and waste, prevention fires, etc. In Lisbon, allotment gardens are considered an authentic green infrastructure that, together with the agri-food system, offers a food supply service to the city, in quantity and quality, of great socioeconomic interest. As a productive element of a sustainable urban agri-food system, vegetable gardens are

part of a network of social, economic, ecological and political connections that comprise [local] production, processing [excludes the need for storage, conservation and packaging of agricultural products] , distribution and consumption [direct sales, markets and neighborhood stores], favoring the reuse of waste and water, self-supply and self-sufficiency, traditional markets, direct marketing and the local economy (Aresomena, 2012). The experiences involving the urban cultivation of food through horticulture constitute a socioeconomic activity of great relevance both for the subsistence of the new communities recently arrived in the city (Portuguese and migrants), as well as in the enhancement of social cohesion. Agricultural practice reinforces the feeling of belonging to a place and to a community, increasing the interaction between social groups and the social integration of ethnic and religious minorities (with a strong presence in the city). The recent public urban policies are responsible for the exponential increase of the vegetable gardens area, reinforcing its role in the municipal strategy outlined, of (re) introducing nature into the city with a view to urban and metropolitan sustainability and resilience.

6. Conclusion

In Lisbon, the reinforcement of the presence of vegetable gardens in a planned and programmed way, considering both the ecological suitability of the territory and its compatibility with urban morphology, has contributed to the spatial and functional (re) organization of the urban landscape. The gardens are an integral part of the ecological and cultural structure of the city, playing an increasingly important role and articulator, contributing to ensure the global functioning and coherence, the cultural identity and the environmental and economic sustainability of the city. As key agroecosystems, vegetable gardens provide different ecosystem services to the population. The benefits, material and immaterial associated with them, have a decisive contribution to the environmental and social qualification of the city, since the allotment gardens provide habitats to wild species, promote the well-being and create aesthetics urban landscape. That is why urban gardens, as multifunctional green spaces, played a decisive role in the election of Lisbon as European green capital 2020.

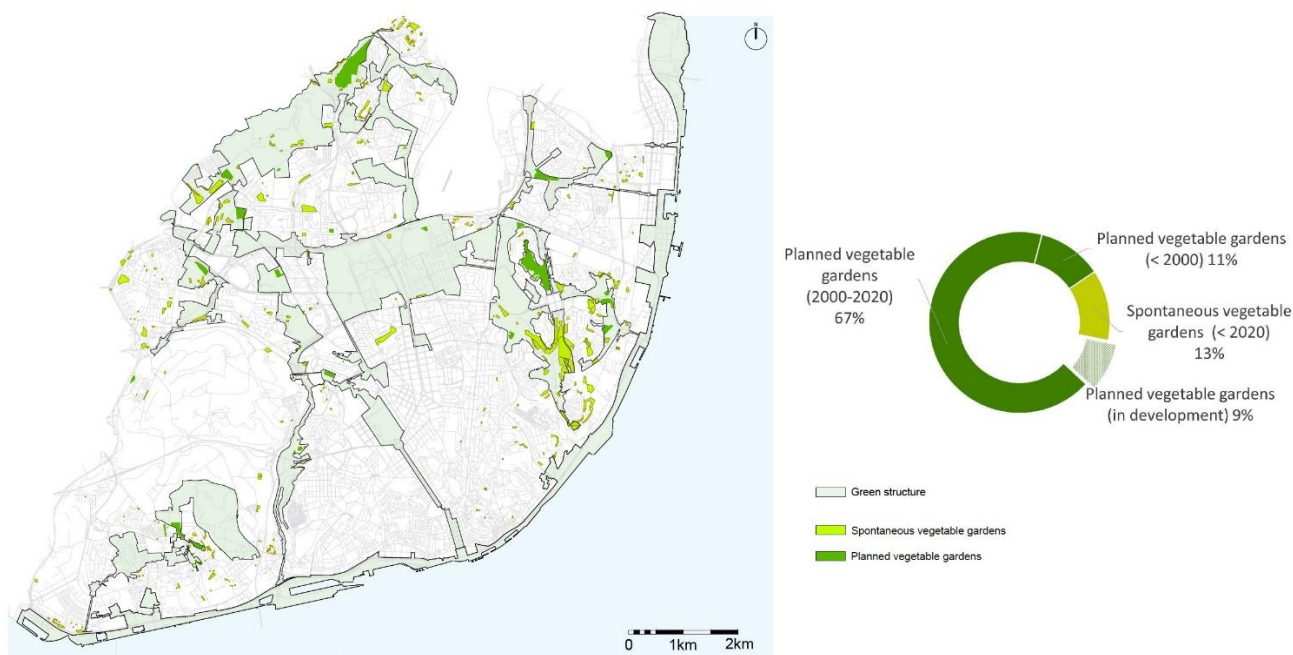


Figure 1. Map of types of allotment gardens and graph with the areas occupied by each type in the two periods under analysis: before 2000, and between 2000 and 2020. (Geographic information provided by the Geographic Information Center (NIG) of the Green Structure (DEV) of CML.)

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