

INTEGRATION OF URBAN AGRICULTURE IN URBAN PLANNING – THE CASE STUDY OF PORTO MUNICIPALITY

EXTENDED ABSTRACT

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ABSTRACT

Urban agriculture, due to its multifunctional character, contributes to improve the life quality of the population and also to improve the urban sustainability. Urban planning is presented as the process of selecting the best way of action to achieve the desired objectives for an urban area and to prevent new and existing problems. Regarding to this, the present dissertation aims to propose recommendations for a better articulation between urban agriculture and urban planning, using the city of Porto as a case study.

The well-being of communities and the attempt to answer their yearnings defines the relevance, the necessity and the opportunity to obtain a clear picture of the evolution, the situation and the perspectives of urban agriculture's universe, developed and discussed on the literature review. Subsequently were analyzed, comparatively, the urban agriculture management models of Porto and Lisbon, considering that these are the main metropolitan areas nationwide and whose soil is fully classified as urban. Based on the interviews performed to the main stakeholders of urban agriculture area in Porto municipality, are presented measures, goals and actions, which should be followed to achieve the main objective initially proposed.

Keywords: Urban agriculture; urban planning; green infrastructures; sustainability; articulation

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INTRODUCTION

Environmental and sustainability issues, quality and food safety, the need for subsistence and the demand for recreation and leisure spaces, are leading to a growing demand, by the population of the cities, for spaces where they can grow their own food, where they can develop urban agriculture (UA). At the same time, urban expansion and the processes of intensification, specialization and concentration of productive agriculture activity in rural and peri-urban areas have been set a widening gap between the place of production and the place of consumption of food, which can cause difficulties of supply which, together with the rising of fuel prices, can lead to a "supply crisis" as observed in mid-2008.

The prices of fuel during most of 2008 led to a crisis in a lot of businesses related to logistics and transport and, in Portugal, many of them paralyzed their fleets², which resulted in lack of fuel supply in many fuel stations and also the lack of certain goods in supermarkets and hypermarkets. This reality refers to issues related to food security of urban centers, issues to which UA, together with urban and regional planning actions, attempts to answer.

Many of the definitions of "urban agriculture" despise the critical features that make it really be "urban". The agriculture in urban space differs from agriculture in rural areas (and it is complementary to it) precisely because it is integrated into the economic and ecological urban system (Mougeot, 2006).

Urban Agriculture, for its transversality to other topics such as the food supply of the cities, environmental education, social integration or the leisure facilities, allows planners to intervene and make proposals for better articulation of these spaces at a territorial level.

In Portugal, several cities have recently invested in management of urban areas in order to improve the quality of life of their citizens and to find a suitable destination for certain empty spaces.

OBJECTIVE AND METHODOLOGY

Due to the increasing demand, by the population, for UA spaces which reflects into long waiting lists for a plot or sometimes the occupation of public or private land that is currently without any use in the municipality of Porto, is the general aim of this study, to suggest recommendations for UA in the municipality of Porto, through its connection with urban planning.

This main objective includes the following operational objectives:

1. Analyze urban agriculture and its articulation with urban planning.
2. Analyze, comparatively, Porto and Lisbon urban agriculture management models.
3. Listen the perspectives of the "stakeholders", in particular, the perspectives of decision-makers and promoters / managers of urban agriculture spaces, in the municipality of Porto.

² http://www.rtp.pt/noticias/economia/ha-varios-postos-de-combustiveis-que-estao-secos_v180542

The methodology followed in this dissertation was defined to achieve the predefined objectives and was developed through the following phases:

1. Preparation of a review about UA, in which was done a research on the concepts and key UA characteristics, the relation between urban population and food, was discussed the contribution of UA to urban sustainability, its relationship with urban planning and its approach in Portugal.

2. Collection of information about Porto and Lisbon UA management models. For the municipality of Porto, the data were collected through direct observation and interviews of the movements / initiatives of UA. In Lisbon, the data were obtained from dissertations on the subject, contacts with entities responsible for managing UA spaces and by searching on the Internet. In both cases, the respective Master Plans (Planos Directores Municipais - PDM) and their characterization studies were also important in the analysis of management models.

3. Selection and characterization of the case study – the municipality of Porto, considering the lack of green spaces, the need to improve the quality of life of its inhabitants and the importance of this issue in the city, reflected in long waiting lists for plots, as well as the need for greater integration between urban planning and UA.

4. Preparation of a diagnosis, through strategic planning, considering the growing complexity and increasingly unpredictable changes that the territories are subject.

For that, it was necessary to do a SWOT matrix of strong points, weak points, threats and opportunities, which allowed to obtain an insight of the main dynamics of the territory, in a medium and long term perspective. At last, it was identified the main key-vectors and was obtained the desirable scenario from the perspective of the improvement of the population life quality.

4. Based on the information obtained in the earlier stages, aggregated in a critical analysis, were proposed recommendations, involving measures, objectives and actions. The measures ensured the implementation of the chosen scenario, relying on concrete objectives. The objectives were effected in actions, which aims to contribute positively and prospectively in the medium / long term.

URBAN AGRICULTURE AND URBAN PLANNING

Urban agriculture can be defined as "*that which occurs within and on the outskirts of cities around the world and includes crop production, animal husbandry, fisheries and forestry*" (FAO, 1999 cit. In FAO, 2001, p. 4). According to Action COST - Urban Agriculture Europe (2013), p.1, the UA can be defined as "*the agriculture practiced inside (intra-urban agriculture) or on the outskirts (peri-urban agriculture) of spatial contexts that are perceived as "urban", covering all stakeholders, communities, activities, places and economies that focus on the production of bio-based.*"

Urban planning (UP) has for aim the organization and management of territorial space at urban areas level, in order to ensure the execution of the planning model (Costa Lobo et al, 1995). UP is a process conducted by the public administration, of selection of the best action path to achieve the desired objectives for an urban area and to prevent new and existing problems (Bartone et al., 1994; Smith, 1993; Hodge, 1991 cit in. Quon, 1999).

The importance of the UA be present in the UP is that can give another visibility, which promotes greater security for urban farmers on issues related to ownership of land, allows a greater technical and training support, improves the characteristics of urban gardens, since it can contribute to greater proximity to organic production methods, promotes urban "*continuum naturale*" and make available more parcels of land, that were previously unused, to the practice of UA.

Despite these benefits, the UA is often marginalized of the UP because it is seen as uncompetitive compared to other land uses, more profitable, lacking in importance by urban leaders and continuing to be a very secondary concern in urban development programs (Mbiba and Veenhuizen, 2001).

FAO and the RUAF jointly organized a virtual conference on "Urban and Periurban Agriculture (UPA) in the Policy Agenda" in 2000, and one of the main conclusions was the fact that UA needs to be an activity more official or formalized to be integrated into processes of urban planning. The creation of urban farmers associations can be an important step, even to the participatory process of urban planning.

Recently, Katrin Bohn and Andre Viljoen proposed a coherent strategy for the introduction of productive landscapes interconnected within cities, called "*Continuous Productive Urban Landscape*" (CPUL). The aim of this approach is to promote green corridors containing cycle paths and walkways, and where urban agriculture is developed along the city.

URBAN AGRICULTURE IN URBAN PLANNING AND LOCAL MANAGEMENT

In Portugal the process of urbanization began in the 40s, with the increase of migratory movements towards the city. In the 70s, with the return of many emigrants, soldiers and residents in the ex-colonies, there was an explosion of small complement of agriculture on the outskirts of Lisbon, which consisted mainly of farms with quite unstable character due to pressure from the expansion of urban activities in the territory. Maintaining a stable agriculture only made sense beyond the peri-urban municipalities, where lived the new generations of local agricultural affiliation (like Sintra).

This type of agriculture was born by improvisation of the need to supplement income with other means of subsistence and of the will of occupy time but, currently, starts to be seen by the authorities as an intervention in terms of sustainability, by enabling the proliferation of green spaces, the renovation of urban landscape and to reduce the transport sector's emissions.

However, according to Cancela (2014), p. 12, "are still few urban planning processes, in recent decades, in Portugal that evidence and fall within its framework agricultural uses in urban land, but feels that this process also gives signs of change."

In addition to the regulated UA exists, in Portugal, UA not regulated, and assigned a number of settings, such as (Cabannes and Raposo, 2013):

- Clandestine occupation: terminology considered simplistic and more used by the media;
- Informal occupation: generally refers to popular forms of occupation and space management (Cancela, 2010 cit in Cabannes and Raposo, 2013.), Highlighting the absence of formal standards but that does not highlight the value and importance of these spaces;
- Illegal: term generally used in urban planning. In urban planning, to be considered legal, the buildings must comply with urban planning laws and instruments. However, in the case of UA, this practice does not represent any act that goes against the legality or that is prohibited by a specific decree.

According to Zahlé (1999), Arruda (2006), Resende and Cleps Jr. (2006), Farfan *et al.* (2008), Smith (2009) *cit in*. Castelo Branco and Alcantara (2011), the urban gardens grown in urban areas, without enrollment in a specific category of space in PDM, bring along some negative aspects to urban farmers, such as:

- Depend on the momentary political will of governments in the case where there are government subsidies involved;
- Are under pressure from unplanned urban expansion of municipalities, which affects the area available for cultivation;
- Have difficulties to form partnerships, which difficults the access to funding for expenses and / or investment;
- Struggle to create incentives for investments by the urban gardeners. After all, because this occupation is not permanent, urban gardeners are afraid of being evicted at any time.

In the regulation of Porto PDM, currently under review, there is no reference to the term "urban agriculture" or "urban gardens", not contemplating its own space sub-category, however is considered that, by its multifunctional character, is a cross-cutting activity to various sub-categories and various land uses. However, it can be considered as mainly included in the "Soil assigned to the ecological structure" and in that, in the sub-categories "collective spaces system" and "urban green structure", being considered structural elements of the city, contributing for its balance and full enjoyment of urban supply for the population.

The current model in Porto is based preferably on the support, by the Municipality of Porto, of the actions of associations / institutions, in partnership with LIPOR, that want to boost UA projects in the city, providing for that purpose, municipal land under lease or in some cases on loan.

The regulation of Lisbon PDM, the terms "urban agriculture" and "urban gardens" are present throughout the document, especially its association with one of the strategic objectives of the PDM, "*the promotion of a city environmentally sustainable and efficient in the way of using the resources*", covering also the Execution Program, an '*Incentive Program for Urban Agriculture and Horticulture*'.

In Lisbon, urban agriculture appears embodied in class of "central and residential spaces" and sub-class "patio" and class "green spaces" and sub-class "green recreational and production spaces". In the first, the patio, urban agriculture has already historic character, constituting spaces that, for its cultural and landscape value, must be safeguarded. In second, the green spaces of recreation and production, "urban agriculture initiatives can be encouraged in order to increase food production at the local level by strengthening self-sufficiency levels of the city, urban resilience and contributing to the cohesion of urban communities" constituting the spaces where the Horticulture Parks are present, promoted by the Municipality of Lisbon.

It was in 2007 that the Lisbon City Council started the project of Lisbon Horticulture Parks. This plan had as main objectives the consolidation of existing spaces and the creation of new green areas in order to ensure not only the ecological continuity but also to promote the diversity of sustainable typologies. The Lisbon City Council wanted, that it was developed spaces of horticultural aspects associated with living with extended use. These productive spaces called "Horticulture Parks" can be found in gardens or city parks, whose valences undergo produce goods and provide catering establishments, cafeteria, playgrounds, bike paths, etc. (CML, 2011).

In the case of the municipality of Lisbon, contrary to the municipality of Porto, the territorial management model of urban agriculture is a model based mainly on boosting by the City Council, through the Horticulture Parks.

CASE STUDY - MUNICIPALITY OF PORTO

The identified UA spaces are presented according to their types. The presented typologies were defined based on the typology proposed by COST - Urban Agriculture Europe and adapted to the reality of the city of Porto.

1) City Gardens: spaces that are promoted and managed by the city council of Porto or intermunicipal companies, such as LIPOR. Had in its genesis to revitalize lands that were abandoned, insecure and permanently used for illicit activities such as drug trafficking and drug addiction. At present there are playground areas with occupational valences, to supplement the family budget (subsistence farming), establishing itself as an example of management and conservation of semi-public spaces, with economy of resources. They follow a mode of production that does not use chemical products, considered close to the principles of organic farming.

2) Pedagogical gardens: are spaces promoted and managed by the city of Porto, in the context of pedagogic activities with the participation of schools in the municipality, or institutions with pedagogical valences, such as Serralves Foundation and the Portuguese Catholic University. Are the older types of gardens in the municipality of Porto and their main purpose is the teaching of farming, husbandry and horticultural production, always combined with a sustainable vision of resources utilization and in order to eat healthy.

3) Social gardens: are spaces managed and promoted by social-oriented institutions present in the municipality of Porto, as is the case of the APPACDM - Porto. The main aim is the use of a space that belongs to these institutions and that it was with no use, now serving to promote the integration of disadvantaged users, also with playful and convivial objectives in these spaces.

4) Therapeutic Gardens: although in the future, some of the above-mentioned gardens will have a therapeutic component, currently only the “Horta do Parque José Avides Moreira” located the Conde Ferreira Hospital Centre, has this valence. It's the latest and greatest garden city, with about 7,000 m² intended for cultivation, for therapeutic purposes, a wellness generator and sociability space, both for users of the Hospital, either for users of the plots and either to the general population that can find there a space for leisure and entertainment.

5) Community gardens: are spaces managed and promoted by civil society through associations, which stands out for its dynamism and its intervention distance, the “Espaço Musas” and the “Associação Movimento Terra Solta”, in which prevails a spirit of community, where initiatives are preferably of the type "bottom - up", with essentially leisure and entertainment purposes.

7) Unregulated gardens: are gardens developed in areas considered "space-channel", such as the gardens present in certain sections of “Via de Cintura Interna (VCI)” or land with water lines, such as Nevogilde gardens, being the latter also considered an expectant soil, given the degree of urbanization of the surroundings and the fact that it is in a prime city location.

It is emphasized the predominant location of these spaces in the western part of the city, namely in “Aldoar, Foz do Douro and Nevogilde” and “Lordelo do Ouro and Massarelos”, parishes that do not have as much real estate pressure as the central areas of the city and at the same time are considered good areas, with better quality of life.

On the other hand, the eastern part of the city, corresponding to the parish of Campanhã (with the largest area of the city - 8.3 km²) is not connect with the rest of the city, not just physically due to the railway line but also with regard with its social, ecological and economic development. The existence of the “Parque Oriental” could establish itself as a link, however, it is little known, between social housing considered problematic, increasing the feeling of insecurity by its users. C.M.P. stresses the need for intervention in the remediation of “Rio Tinto”, the river that runs through this parish and that could contribute to an added value for the development of gardens in this part of town, but which is currently dependent on a joint

operation with the city council of Gondomar, due to the the fact that the pollutant discharge points are located almost exclusively in this city.

DIAGNOSIS

Were, in total, conducted ten interviews, one to the technical and policy makers and nine to the "stakeholders" responsible for the promotion / management of fifteen of these spaces, following an open-ended survey model, not intending that the sample would be representative but that allow to draw a recent picture of UU in the municipality of Porto.

In response to question 5, "Who owns the land?", the majority of the interviewed said to Porto City Council, in some cases with building rights transfer contract. Some interviewed reported that they pay rent for the use of those lands, while others, usually associations, explain that are not required to pay any rent.

On the question 6, "There is any infrastructure? Who built and who paid? " is regarded that all spaces have at least an infrastructure (water and electricity), which was installed by CMP in seven cases and by the association itself or institution in 6 cases. Although the question of the existence of a monthly or annual fee paid by users have not been answered, most respondents refer to their values. These range from the lack of monthly / annual fee, to 50 € + VAT / year.

The answers to question 9, about what motivates the users of those spaces to practice UA, are connected with question 8 about the objectives of the project in concrete, with almost all respondents saying that the main reason is the "contact with land and with a healthier way of life." All respondents said it was necessary, and sometimes urgent, to give a use to the space that was previously abandoned. At the same time, leisure and socializing, as well as educational activities, were the most mentioned objectives. There was one respondent who referred to the need of the institution to reduce the cost of food, which could also be obtained in this way.

Regarding to the threats, most of the answers goes in the direction of the absence of threats in the short term, the main threat identified is related to the urban "pressures", arising mainly from its location, in the areas of consolidation or expansion of the urban area and the possible real estate speculation. Regarding to the opportunities these refer mainly to the improvement of existing spaces, via european funds for urban renewal, including the refurbishment of infrastructure systems, equipments, and green or urban spaces of collective use.

When asked about the question 12, about the existence of legal requirements to be met to practice UA in theses spaces, the majority of respondents replied that it was not necessary to meet any legal requirements, excepting only the commitment established with LIPOR, that the practice of agriculture would be the closest of organic farming, without the use of chemical products, or the need for compliance with the lease agreement with CMP and lending agreement with the Parish Council. Another of the respondents pointed out the need to carry out water analyzes as the only legal requirement.

With regard to question 13, about the active and regular participation of "stakeholders", the responses were divided, with 8 respondents saying that do not participate and 7 saying that participate. The main reason for not participating lies in the depreciation of the importance of participation.

As for the possibility of boosting new spaces for the practice of UA in the municipality of Porto, 13 of 15 respondents said it is not a possibility to consider now, especially because "it is not the main purpose of the institution." This finding, linked with the "demand for these spaces by a very large number of citizens," suggests a continuity in future terms, of the demand exceeding the supply.

About the perspectives of the various "stakeholders" for the next five years for the various spaces, these are going in the way of maintaining / continue, with all of the respondents saying that liked that the space would remain. Of the 15 respondents, 6 stressed that they would like to see the spaces improved, especially the support facilities.

The chosen scenario allows to take advantage of European funds from "Portugal 2020" program to support urban regeneration, allowing to make a public space attractive for citizens, and UA becoming part of the public space.

This approach will include the creation of green infrastructures such as bike lanes, multi-functional green spaces – with production, leisure and biodiversity promotion, and the inclusion of existing ones, as part of a continuous landscape.

This can only have relevance, both for the population and for the city, if, at the same time, exists a promotion and certification of local products from urban organic farming, for example by AgroBio and by the promotion near the traditional trade through, for example, "Prove" which aims to contribute to the marketing of local products, fostering close relationships between those who produce and those who consume, establishing short marketing channels between small farmers and consumers, using information and communication technologies.

Moreover, it is essential to promoting activities involving various age groups in society, in order to enable a temporal continuity of these spaces and, on the other hand, urban design and logic of conception of these urban infrastructures must also include the assumption of spatial continuity, in order to avoid "islands" in the city without any connection to the environment and to which only a niche of the population can access.

CONCLUSIONS

UA associated with environmental and sustainability issues, quality and food safety, the need for subsistence and mainly looking for leisure and recreation spaces by the population, is a theme with growing interest, considering the numerous articles and academic papers produced recently.

UA, due to its multifunctionality, should be seen in a coordinated manner among the various "stakeholders" and throughout the territory, which is currently not the case in the municipality of Porto.

Emphasizes the high-performance of "stakeholders" initiatives, the challenge of maintaining such activity despite not being its primary vocation and the political will to cover a wider audience than the present.

The proposed recommendations that enable better UA integration in urban planning, through the urban renewal of public space, the creation of green infrastructures and the integration of existing ones, the creation of local economies that support the certification and promotion of local products from UA near the traditional trade and the promotion of spatial and temporal continuity of these spaces.

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