

## LEARNING AND TIPS FOR MORE SUSTAINABLE URBAN ALLOTMENTS IN PORTUGAL

Ana Maria Viegas Firmino

*Keywords: urban allotments, gentrification, good practices, holeriturisme, Portugal*

*Abstract: The recent interest in planning horticultural gardens in urban and peri-urban areas in Portugal, confronts us with incongruent effects, a tricky situation that generates controversial discussions. On the one hand, we can accept wholeheartedly the setting up of infrastructure, such as water, sheds for tools, rainwater catchments and fences, but on the other hand it is regrettable that people who always worked a certain plot of land, although possibly illegally, must often look for an alternative location, because either they do not know how to apply for a plot, they do not want to accept the regulations inherent to the planned horticultural park, or they refuse to pay to go on using the plot. This creates a gentrification of the gardeners associated with the planning and legalization of the plots that has not been properly studied. This affects mainly immigrants and older people, who work informally plots that they do not own, but which are fundamental to their self-sufficiency even if only partially. These plots are usually located along the main roads around the larger cities, and these gardeners are often blamed for producing products that are polluted by the fumes expelled by the vehicles and by the sewage water used in irrigation.*

*The paper will discuss as to what can be done so that CPUL's can continue to fulfill the strategic task to feed the cities and do not become a mere playground for the middle classes and will give good examples on how to contribute to social inclusion.*

---

### 1. Introductory Remark

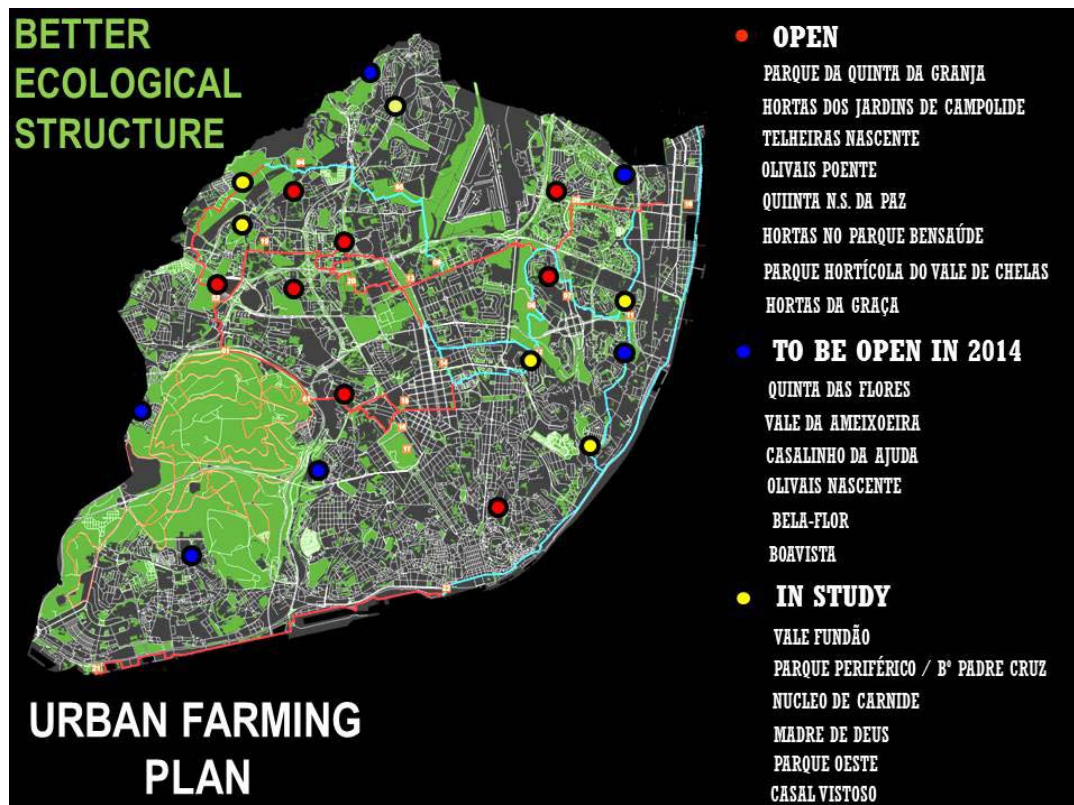
In the thirties, when Lisbon enlarged its built area to the North (the New Avenues Quarter) the buildings were planned in order to offer a small backyard, where the neighbors could plant cabbages, salads, flowers, or even breed a couple of small animals such as chicken, rabbits, pigeons ... Some of these gardens still exist, surprising the visitors with the presence of fruit trees, occasionally olive trees (for instance in Defensores de Chaves Avenue or Rom Avenue). However little by little, many backyards were transformed into garages or were covered with concrete, much easier to keep (no weeds, nor watering). According to Mata (2014) over the last decades the poor environmental conditions, were, together with real state issues, expensive (land) prices, reduced availability of good public spaces and decline in associated quality of life, responsible for the abandonment of the inner city of Lisbon by its inhabitants.

In order to revert this situation a "Green Plan" was launched in 1997, under the coordination of Ribeiro Telles, where a new element of the urban planning was created – the Urban Ecological Structure, as a subarea of the Urban Green Structure (Ribeiro Telles, 1997, p. 126). This was intended to guarantee a better functioning of the fundamental ecosystems and larger biological diversity.

The Urban Allotments and Backyards are here presented as an important typology that contribute to a better environmental quality of the city, and should be emptied of any edification or impermeable pavement and be covered by vegetation. Ribeiro Telles considered that the non-observation of these premises would drive to a more and more dusty city, dryer and hotter in Summer and colder in

Winter (ibid, p. 130). Besides these small green patches are important step stones for the urban avifauna.

Thus in 2008, and based on the Green Plan, the Lisbon City Council adopted some preventive measures in the Master Plan and in 2012 the New Master Plan "includes several specific work fields of the "Green Plan" such as Urban Allotments, Green Structure Areas, Water Cycle improvements, among others", Figure 1 (Mata, 2014, p. 1).



[http://www.urbanallotments.eu/fileadmin/uag/media/Lisbon/2-GVSF-CML-paper\\_COST-LNEC\\_FINAL.pdf](http://www.urbanallotments.eu/fileadmin/uag/media/Lisbon/2-GVSF-CML-paper_COST-LNEC_FINAL.pdf)  
Figure 1 – Urban Allotments Gardens Program for Lisbon 2011 – 2017. Source: Mata, D. 2014, p. 3

The actual trend to create horticultural parks and other green areas in the city is a valid contribution to a better environmental quality and offers leisure and recreational spaces to its inhabitants. But is this being achieved at the expense of the former users of these areas (even if often they are not their legal owners) and do the new gardeners really contribute to the so much praised food security, or do these urban parks constitute a nice piece of design whose multifunctional activities are indeed reducing the areas formerly effectively cultivated by people who needed them for their nutrition? And what can be done to integrate the most needy and bring some added value to these areas? This is what will be discussed next based on literature review, consultation of information available on the internet, as well as interviews with gardeners at "Quinta da Granja", technician of the Municipality of Lisbon and the coordinator of the project "Hortas do Mundo".

### 1.1 Gentrification in the organized Urban Allotments?

The majority of the urban allotments inside and around Lisbon occupy derelict land and they are cultivated by elderly people, often retired, such as in Quinta da Granja, or younger people employed or unemployed as in Chelas Valley. Recently young and more educated people have also shown interest in having a plot, namely the groups working on permaculture. According to the areas, a predominance of migrants, namely from Cape Verde, may occur.

Mata (2014, p. 2) informs that "before 2011 all urban allotments were spontaneous on the Landscape" but their area has been decreasing as follows (Table 1):

**Table 1. Urban Allotments in Lisbon (Ha)**

<b>Year</b>	<b>Area (Ha)</b>
1987	304
1995	190
2014	84

Source: Adapted from Mata, 2014, p. 2

Nowadays from the existing 84,0 hectares of urban allotments in Lisbon almost 12,0 hectares are constituted by organized municipal parcels being located in 8 Municipal Urban Allotments Parks, some of them such as the one of Chelas Valley, of considerable size (16 ha and about 200 parcels) and 20 new urban allotment parks are planned in Lisbon up to 2017. According to the same source Lisbon has still 70 ha of other types of agriculture, such as olive trees, cereals and pastures for cattle.

The construction of buildings and large infra-structures has contributed to the destruction of many spontaneous allotments that illegally occupied land not owned by the gardeners. Indeed it is common to find such plots along the motorways and railroads as well as in the interstices of the built fabric, often close to social quarters, where people with low income and/or spare time due to retirement or unemployment cultivate a diversity of crops basic to their food needs. They are easily identifiable since these gardeners use all kind of waste to create hedges, build improvised sheds and rain catchments. Some of these invents are very ingenious and functional (see examples in Figures 2 and 3).

However both are jerry-built structures that may easily hurt the sensibility of some who have a different interpretation of landscape in spite of the fact that they accomplish three very important premises propelled for sustainable development: reduction, reuse and recycling!

As Matos, R. and Batista, D. write (n/d, p. 1) "the landscape reflects the free creative action of man as a result of an anthropogenic action aimed at changing nature towards the useful and the beauty. Landscape is an aesthetic but also an ethical reality because it is linked to an action and to a human being in his own environment and community". Thus what we find in these spontaneous urban allotments corresponds to the feeling of their gardeners which, whether we like it or not, represents their way of living and being. We can, in a certain way, compare it to the "graffitis", formerly considered vandalism but that evolved into what is called today "urban art/street art", an artistic expression with participation in festivals and financed by some municipalities (Figure 4).





Figure 2. Rainwater catchment in Apelação Quarter, Loures Municipality, North of Lisbon



Figure 3. Containers made of large plastic bottles in Guimarães, near Porto (North of Portugal).





Figure 4. Spontaneous urban allotments and "urban art" in the social quarter of Apelação (Loures)

Perhaps someday the same will happen with these spontaneous gardens!

In regards to the quality of their products, they are blamed for using water from dubious sources such as sewerage systems, since most of these plots have no drinking water; air pollution, caused by vehicles along the main roads, are additional problems that may occur as is the accumulation of waste.

However air pollution also occurs in other areas of the city, namely Alta de Lisboa, where a relatively recent urban allotment succeeded in winning prizes, in spite of the fact that it is polluted by carbon dioxide from the motorway running alongside its boundaries and the kerosene from the planes that operate at the nearby airport. In this case nobody seems to be worried with the pollution! Is it because this is a planned infrastructure? As a positive remark, part of this garden is accessible to people in wheelchairs who can work the plots, since these were built as raised plant beds, designed to suit their special needs.

Indeed pollution is a serious problem that affects many urban areas, as stated by Costa (2015, p. 8) quoting examples of studies carried out in cities such as Berlin, where levels of heavy metals (cadmium, lead, zinc, nickel, chromium) in salad items produced mainly in allotments close to the roads with more traffic were above the concentrations found in the same products on sale in the supermarkets (Säumel et al, 2012).

Pinto (2007) conducted a similar research in Braga, North Portugal, looking for the presence of heavy metals in salad items produced in 5 allotments inside the urban perimeter and 3 located outside. He found out that inside the urban perimeter the values of cadmium, lead and zinc in salad items and in the soils were higher than in the outside ring. These studies raise the question of food safety in urban areas in general, and not only in the marginal spontaneous allotments, mainly cultivated by

immigrants, although these, being often located along the roads, may be more affected, but not only these, as the example of the urban allotment of Alta de Lisboa shows.

Finally the gardeners who cultivate land that does not belong to them, are often disregarded although they may have more or less consent from the legal owner or who work the land for a long period without having been pursued by the law, which according to usucapio principle entitles them as its future owners. Notwithstanding in general they are a vulnerable population who ignore their legal rights and prefer to look for another plot.

The fact that, when integrated into a legalized urban allotment, these gardeners have to respect a list of regulations (and pay a certain amount of money, even if this is calculated according to their income and do not exceed about 70 Euros/Year) and still face precariousness in the use of the plot, since they may not be entitled to continue after a certain period of time, contributes to gentrification, because some of them will not match the "model" and will leave.

Even if this may not be the intention of the municipality, there is a change in the profile of the actors and their submission to the dominant power, as discussed by Giroud (2015).

Last but not the least, not only the ethnical groups and less favored/elderly people face problems to be part of some urban allotments. Communities that advocate a different model of society, such as those who practice permaculture as a life philosophy, may incur in conflicts. "Horta do Monte" (The Vegetable Garden from Monte) took over a small steeply sloping plot that had been previously cultivated during three years by a group of young people. They presented themselves as having a project different from the other traditional urban allotments because they were a collectivity open to the public with pedagogical activities aimed at promoting healthy and sustainable life styles in the city. They had a blogspot, which in the meanwhile has been discontinued, where they presented their activities (Figure 5).



Figure 5. Images of the Community "A Horta do Monte", Graça, Lisbon

Source: Errore. Riferimento a collegamento ipertestuale non valido., in: Loupa Ramos, I. et al., 2011

The decision of Lisbon's municipality to rehabilitate the area, faced them with the dilemma of staying and accepting the conditions that were offered by the Municipality (but diverged from their fundamental principles) or leave. First they tried to fight for the project that during three years they had been implementing in the area. Their intention was not to own the plot but only to spontaneously work in a place that pleased them and where they had planted about 500 perennial species.



Although they have been informed by the municipality that they could continue in the place if they agreed with the conditions, they could not accept that the machines would destroy everything they had planted, namely fruit trees, neither did they agree with the terms of the contract that gave them no guarantee to stay for a long period nor allowed them to plant new trees.

The day the municipality started pulling out the trees with the bulldozers some of their members opposed this action. The confrontation with the police was unavoidable (Figure 6).

In a work about ethics and aesthetics of allotment gardens, Matos (2013, p. 1) writes about the "work that has been developed to regulate, to improve and to include" spaces such as Quinta da Granja and Chelas Valley allotment gardens in the city planning, "both in terms of ethics – social, environmental, emotional and economical aspects – and in terms of aesthetics – namely its importance in the urban regeneration and city design".

In spite of the recognition that it is not easy to deal with situations such as the described above with Horta do Monte, it is important to recall the emotional link that usually ties all those who care for Nature and who have planted something. Crouch explains that "because an allotment provides a means of freedom to deploy effort in relation to numerous constraints as well as dreams and possibilities, what results on a plot of land can be an expression of many feelings and encounters between people and the ground they use. In this way the plot holder produces a representation of his or her own life; a temporary, changing aesthetic worked with influences even the best plant cultivation cannot control" (Crouch, 2003, p. 2).



Figure 6. Confrontations between police and supporter of Horta do Monte (2013)

<http://www.publico.pt/local/noticia/dois-detidos-e-tres-feridos-em-desocupacao-de-horta-comunitaria-em-lisboa-1598320>

The example of Horta do Monte presented here aims at stressing the susceptibility of such actions and the difficulty in getting unanimity, as it is clear from the reading of the dialogues in the blogs, where some welcome the intervention of the municipality and others condemn it. Basically it is once more the aesthetic (and hygienic) elements that seem to play in favor of the municipal decision, which can be summarized in comments, such as: "the area is well organized, free from rubbish and makes good use of a small steeply sloping piece of land" opposing to those who support the emotional and material investment carried out by the former gardeners. Notwithstanding the Horta do Monte community gave rise to the Horta do Mundo (World's Vegetable Garden) and keep active organizing workshops on how to create a vertical vegetable garden on the balcony according to permaculture, how to prepare meals according to the Ayurvedic principles or how to produce artisanal soaps. But, at the moment, they are a "World's Vegetable Garden" without a garden of their own! (Figure 7).



"The World's Vegetable Garden, we "Cultivate" People is a collective of permaculture which promotes healthy and sustainable life styles. Permeated by a creative and constructive spirit we work out solutions that contribute to a more human and responsible society at the social, cultural and environmental level.

Figure 7 . The "World's Vegetable Garden" Logo and presentation

## 1.2 Urban Agriculture: more than only food production

The fact that more than half the world's population live in cities, and in 2030 this may reach 60%, raises much concern about the supply of food to a growing population that is not involved in the production. However "although urban agriculture refers, in general, to activities connected to the

production of fresh vegetables in the city, it does not mean that it has to be strictly related to production; urban agriculture is also fundamental in including ecological, cultural, recreational and aesthetic concerns, related to the landscape. This means, urban agriculture can integrate, and be, a structuring continuum that assures the occurrence of the processes and flows of the various systems that constitute the landscape" (Matos, n/d, p. 459).

The design of the urban allotments and horticultural parks in Lisbon follow the Continuous Productive Urban Landscape (CPUL) concept, designed by Viljoen and Bohn in 1998, which advocates the creation of a network of multifunctional open spaces giving urban agriculture a complement and support of the constructed environment. They aim at a multifunctionality that may attract different people, not only the gardeners themselves but also those looking for a moment of relaxation, practice of sport, conviviality with friends, a pause for coffee, a walk in contact with Nature. Thus, and according to their location, these parks offer to the local population something that may be of their interest.



One of the largest pieces of equipment built in one of such parks in Lisbon was the Skate Park Rock in Rio, located in the Urban Park of Chelas Valley, comprising 2000 square meters where the young can practice skateboarding, BMX and inline skating, side by side with the largest horticultural park in the country (16 ha).

The fact that Chelas has many social quarters where life is not always easy, and is frequented by a large number of youth, restless, many unemployed, explains this initiative which intends to keep them occupied and contribute to a better image of the area. But why not involve them in gardening too? That is what social agriculture is for!

Although it is understandable the choice made by the municipality, this shows that, at least in densely populated areas such as the Metropolitan Area of Lisbon, urban agriculture has a modest contribution to supply the food necessary to guarantee the certainty of food security to its population, because there is not enough land available and many of the gardeners enjoy gardening for pleasure and not for need, which may not be motivation enough to try to maximize their production. However urban agriculture is important also for other benefits as Matos explains: "- Social (leisure, fomenting local groups, therapy for individuals with special needs, rehabilitation of youngsters). - Environmental (renewal of abandoned urban spaces, diversification of the usage of urban land, increase of biodiversity, preservation of the water, soil and air cycle, reduction of the carbon footprint). - Human (promotion of sociability through the encouragement of personal qualities such as altruism, the improvement of the quality of life through social interaction, health benefits through physical exercise, better food quality and greater diversity) - Economical (stimulus of the local economies, creation of employment and wealth, directly or indirectly). - Emotional (due to the interruption that it can provide to the monotonous and grey everyday life of the citizens, allowing them to realize the real dimension of time)" (Matos, n/d, p. 467).

## **2. Learning with the examples**

### ***2.1 The urban allotments of Braga and Póvoa de Lanhoso in Portugal***

Examples of successful projects undertaken by solidarity institutions and municipalities, include one in Braga and another in Póvoa de Lanhoso (both in North Portugal) that contribute to the social inclusion of low income and socially stigmatized families.

The first project is named "Garden of Knowledge", and aims to combine the clients' training to their learning capacity throughout life. It was an initiative of the Portuguese Red Cross, Delegation of Braga, through its Community Centre in Vila de Pedro, and included 16 family plots (200 m<sup>2</sup>/plot) and a training course on organic farming (200 hours). The project was based on the characteristics and expectations of the beneficiary families, and included a technical project for organic horticultural production. According to its authors the "Garden of Knowledge", "an intelligent park and an innovative project with a sustainable proposal" has given these families "a great sense of motivation, commitment and willingness to participate, improving the social relations with the local community. The project by stimulating the families' skills and self-esteem, by providing training, creating duties and stimulating their compliance to schedules, as well as promoting environmental awareness and teamwork, has showed a great opportunity towards social insertion" (Silva et al., 2015, p. 2). Besides "the technical strategy aimed to be maximized in its structure, organization and individual space sizes

to allow the maximum production of food for the families as well as to help the family income by selling their surplus" (ibid, 2015, p. 2).

The second project started in 2010 in the municipality of Póvoa de Lanhoso, which presents itself as a pioneer in social allotments in Portugal and is certified as organic operator since 2006. Due to the endeavor of Natália Costa (2015), organic farming has been promoted in different projects, namely Biologic@, which was financed by the European Union. The municipality has a 0,5 ha vegetable garden where 17 beneficiaries of the Social Insertion Income (RSI) work 3,5 hours/day once or twice a week. They do not get a wage for their work but they receive a basket with products from the vegetable garden at the end of the week. Most of the beneficiaries are between 41 and 50 years old and are unemployed. Two of them are retired.

The beneficiaries work under the supervision of the project coordinator, who also gives them training in organic farming.

Both examples show good practices that can be implemented in order to integrate socially and economically people with lower income.



**Figure 8. Social Allotment in Póvoa de Lanhoso**  
Foto: Natália Costa



## **2.2 Social City: an example from Germany (Dessau-Rosslau)**

Social City is presented by Glaze et al (2014, 59) as a program of an area based policy which intends to wash off the stigmatization of a certain quarter contributing to its better image. Urban Gardens are often part of the program. In Germany, the Ministry of Environment, Nature Protection, Construction and Nuclear Security promotes projects of urban gardens, such as the Garden of Senses, in Desslau-Rosslau (Sachsen – Anhalt), which intends to offer a diversity of activities that cover themes such as biological diversity, Earth conservation, healthy food, identification of fruits, salads and spices, construction of birds' nests in an area. It created a social network that supports its activities and it is financed by regional enterprises and individuals. The success of the garden is achieved not only by the project manager and four workers but also with the community that contributes with labour and materials.

Besides it has a an intensive activity through protocols established with different official entities, such as the Ministry of Culture and the Ministry of Environment and many social associations at a regional level and with schools.

This is a very successful project that in the future, when in Portugal, citizens will be more mobilized to this kind of initiative, may inspire groups such as the "World's Vegetable Garden" to start similar projects.

## **2.3 Holeriturisme: a tip to diversify services in the urban allotments**

Holeriturisme, which means "vegetable tourism" (from the Latin word holus, meaning vegetable) has been developed since 2009 in the Baix Llobregat Agricultural Park (BLAP), a protected farmland in the metropolitan area of Barcelona, as a strategy to reinforce links between BLAP producers and nearby consumers. According to Paül et al (2013, p. 115) this alliance promotes alternative food networks (AFNs) and it has also been presented as "a new form of agritourism, because it incorporates a leisure dimension". The interviewees consider holeriturisme as a "pretext" or "excuse" to promote specific vegetables to consumers. A daily package includes:

- 1) A visit to farms and an explanation by the farmers of what organic farming is and whether the farmer is certified;
- 2) A visit to an interactive museum exhibition where the visitors will get information about each agricultural product used in the holeriturisme experience;
- 3) A cooking and tasting workshop based on the seasonal products;
- 4) A restaurant meal using local produce (adapted from Paül, 2013, p. 119 – 120).

The experience intends to make the consumer aware of the differences between the locally produced food and that which has to travel from far, as well as the advantages of consuming the products available in each season.

## **3. Conclusions**

The purpose of this paper was to show that some interventions in areas where spontaneous allotments existed may contribute to gentrification, even if in general not many people will be affected. Indeed elderly people, who are not willing to change their gardening practice to adapt it to the urban allotment regulations, are usually the most affected, or those who do not agree in paying

for a plot that they already cultivated for free, although this price is not very expensive, taking into account the advantages of the infrastructures that are offered.

Some people may also disagree with the intervention during the rehabilitation, due to the destruction of the existing trees and plants and for the fact that they are not allowed to install permanent crops since their occupancy of the plot is ephemeral.

In the second part of the paper some examples are given of good practices that contribute to integrate people with less income in social agriculture, contributing to their food supply and self-esteem.

The Garden of Senses, an example from Germany, shows a different form of organization, based on a bottom up approach, self-sufficient in resources and mobilizing the local community, offering a large variety of activities, especially for schools.

Finally holeriturisme is presented as an initiative that may bring visitors to the horticultural parks, who will buy the local products and will learn about the advantages of eating according to the seasons and can complement the income of the people involved. However, as we have seen in these examples, people have to get organized in associations and be less individualist, a lesson that many Portuguese still have to learn!

#### 4. References

- Costa, N., 2015. Estudo dos Benefícios Sociais, Ambientais e Económicos das Hortas Sociais Biológicas do Município da Póvoa de Lanhoso (Study of the Social, Environmental and Economic Benefits of the Social Allotments in the Municipality of Póvoa de Lanhoso). Master Thesis in Organic Farming. Ponte de Lima: Instituto Politécnico de Viana do Castelo.
- Crouch, D., 2003. The Art of Allotments – Culture and Cultivation. Nottingham: Five Leaves Publications.
- Giroud, M., 2015. Mixité, control social et gentrification. La vie des idées, 3 novembre 2015. ISSN: 2105-3030. [online] Available at: <<http://www.laviedesidees.fr/Mixite-controle-social-et-gentrification.html>> [Accessed 17 November 2015]
- Glasze, G. et al., 2014. Stigmatisierung von Stadtvierteln. Einleitung in das Themenheft. Europa Regional 20, 2012 (2014) 2-3: 59-62.
- Hartmann, R., n/d. Garten der Sinne [online] Available at: <<http://www.bmub.bund.de>> [Accessed 2 September 2015]
- Mata, Duarte, 2014. Lisbon's Green Plan Actions: Towards a Green City. [online] Available at: <[http://www.urbanallotments.eu/fileadmin/uag/media/Lisbon/2-GVSF-CML-paper\\_COST-LNEC\\_FINAL.pdf](http://www.urbanallotments.eu/fileadmin/uag/media/Lisbon/2-GVSF-CML-paper_COST-LNEC_FINAL.pdf)> [Accessed 2 September 2015]
- Matos, R.S. and Batista, D.S., n/d, Urban Agriculture: The Allotment Gardens as Structures of Urban Sustainability, [Accessed 2 September 2015]
- Matos, R.S. and Batista, D.S., 2013. The ethics and aesthetics of allotment gardens. Évora: CHAIA.
- Paül, V., McKenzie, F.H., Araújo, N., Rodil, X., 2013, Alternative Food Networks or Agritourism? The 'Vegetable Tourism' Experience in the Barcelona Peri-urban Area (Catalonia, Spain). In: Kim, D-C., Firmino, A.M., ICHIKAWA, Y. ed. Globalization and New Challenges of Agricultural and Rural Systems, Nagoya, Japan: IGU Commission on the Sustainability of Rural Systems, pp. 114-128.
- Pinto, R., 2007. Hortas Urbanas: Espaços para o Desenvolvimento Sustentável de Braga. Dissertação de Mestrado em Engenharia Municipal, Especialização em Planeamento Urbanístico, Departamento de Engenharia Civil, Escola de Engenharia, Universidade do Minho, Braga, Portugal, 531 pp.



- Ramos, I. et al, 2011, As hortas como elemento estruturante do espaço urbano. Lisboa: Instituto Superior Técnico, Departamento de Engenharia Civil, Arquitectura e Georecursos.
- Ribeiro Telles, G. (Coord.) 1997. Plano Verde de Lisboa (Green Plan of Lisbon). Lisboa: Edições Colibri.
- Säumel, I., Kotsyuk, I., Hölscher, M., Lenkerei, C., Weber, F., Kowarik, I., 2012. How healthy is urban horticulture in high traffic areas? Trace metal concentrations in vegetable crops from plantings within inner city neighborhoods in Berlin, Germany. *Environmental Pollution* 165:124-32.
- Silva, M.L. et al, 2015. "Garden of Knowledge" – Strategic Project to Support Low Income Families, Braga, Pt. In: Rome: Second International Conference on Agriculture in an Urbanizing Society, Reconnecting Agriculture and Food Chains to Societal Needs.
- Viljoen, A. (Editor) 2005, Continuous Productive Urban Landscapes, Architectural Press, Elsevier, Oxford

*Acknowledgement:*

*The author wishes to thank to Graham Reed for editing this text.*