

Exploring urban gardening experiences in Europe and Asia: Rome vs. Tokyo

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Abstract

Nowadays the trend of urban gardening can be observed in many parts of the world. This phenomenon responds to the demand of rurality and the requalification of abandoned urban green areas expressed by city residents. Recently, many researchers have investigated about different types of urban gardening but mostly referring to English speaking developed countries (Guitart et al. 2012).

To grasp the worldwide trend of urban gardening, this paper aims to compare urban gardening experiences in Rome and Tokyo. In Italy, the analysis is conducted through a direct investigation while the Japanese experience has been analysed through secondary data. The study of these two quite different metropolitan contexts helps to understand: (i) motivations on why urban residents need to grow food by themselves; (ii) types of ecosystem services (i.e. safeguard of agricultural land, food culture, production system, leisure model, environmental education, social cohesion) provided to stakeholders (Langemeyer et al. 2018; Speak et al. 2015). By comparing the two areas in Europe and Asia, we found urban residents' interests in self-harvesting in common. Yet, there were differences in the form of urban gardening. Urban gardening in Rome is characterized by voluntary community activities, while Tokyo has commercial services to provide opportunities to not only those who have eagerness to grow vegetables, but also those who have less time and skills of growing plants.

Keywords

Ecosystem services, urban green resilience, community food production, willingness to pay.

1. Introduction

In the modern urbanization trend the growing concerns focus on food insecurity and cost and quality of food that drive people to consider to grow vegetables and fruits locally. In modern European and Asian metropolis (to refer to the geographical area of investigation), citizens look at place of aggregation and socialization such as to the opportunity to produce their own food.

Since 2011, the analysis about urban gardening highlighted also the aspects related to the provision of ecosystem services (ES) used as a proxy of people preferences/needs and motivations (Langemeyer et al. 2018; Cabral et al. 2017; Chan et al. 2016; Speak et al. 2015), as well as to address problems of food shortage becoming relevant in European suburban areas (Martin et al. 2017). Looking at the daily experience, urban greening responds to the demand of rural life and socialization expressed by people. To evaluate their provision of benefits to city residents, it is critical to understand the production of ES values in different kinds of urban gardens (UGs) (Plieninger et al. 2018; Langemeyer et al. 2018; Bailey et al. 2018; Cabral et al. 2017).

In Italy, UGs are constantly growing; in fact in the period 2011-2014, this form of management of public green areas has increased by 18.5% (Istat, 2016). The Italian legislation identifies them as “small land allotments owned by the municipality and used - not for profit - for domestic use cultivation (including self-consumption functions) or for recreational gardening”. They are assigned on loan to the requesting citizens and addressed to increase social inclusion or to promote educational initiatives. In Rome, from 2011-2014, urban green space in this metropolis increased by 1,9 million m², and it is the Italian metropolitan city with the highest average green area per inhabitant: 19.3 m² (Istat, 2016). The number of allotment garden sites in Japan is increasing from 691 in 1994 to 4,223 in 2016 according to the governmental statistics, which reflects the rise of demands for urban gardening. These allotment gardens are most well-known Japanese UGs where urban residents can rent a plot through municipality to grow vegetables in their leisure time. The original land use of the gardens is usually agricultural land owned by a farmer. Therefore, UGs can help preventing agricultural lands from being developed. This is applicable to the capital, Tokyo, with 7,400 ha of agricultural lands (as of 2013), which is 3.4 % of the Tokyo prefecture area. In addition, there are other types of UGs which appeared later on agricultural lands or any other lands.

The aim of this paper is to analyse and evaluate urban gardening from the point of view of ecosystem services provided, through case studies in Rome and Tokyo. After this brief introduction, the methodology is presented in section 2 while results and discussion are provided in section 3. The paper concludes with the final remarks (section 4) and the essential references.

2. Methodology

In Rome, two questionnaires have been designed and tested to collect information from different types of stakeholders: gardeners and UG managers among the Roman most successful UG realities. Questionnaires have been administrated in person with a sample of 30 gardeners of an UG “Tre Fontane”. In the same period, we interviewed managers of “Tre Fontane” and “Valle dei Casali” because their point of view was relevant in terms to understand which are: (i) the reasons that move a community to commit voluntary itself; (ii) the difficulties to realize these projects; (iii) the future challenges. Last but not least, the responsible of the spin off Zappata Romana was interviewed because this project is considered the milestone in Roman urban gardening movement. All interviews have been

conducted during the winter time: January-March 2018; during this time it was rainy in an unexpected way, and for this reason we could not have more respondents.

On the other hand, there are enough academic articles on Tokyo's urban gardening and surveys available from public statistical organizations to compare the two cities. Therefore, these data were used to highlight the characteristics of Roman cases.

Our analysis shows the preliminary results of a wider project (i.e. a larger sample of gardeners) that will include the participation of public officers of the Roman and Tokyo municipalities to analyse and discuss with them the challenges for the near future in terms of green infrastructure policies.

3. Urban Gardening in Rome and Tokyo: results and discussion

In Rome, urban gardening was born as a spontaneous phenomenon involving urban public areas often subtracted to any form of legal markets. In 2010, the first quantification of this phenomenon has been done by an architects' firm – Studio UAP – that, at that time, was involved by the municipality in a requalification project of an abandoned urban public space in order to guarantee its maintenance through a collective action. Working on this project, they verified that inside the Roman urban boundaries there were at least 40 important, in terms of size, UGs. Actually, there are more than 200 community gardens, community edible gardens and guerrilla spot gardens (Zappata Romana, 2018).

After the mapping, Studio UAP realized Zappata Romana: a spin off for citizens that intend to create community-run green areas, returning the use of public goods to the community. In fact through sharing of experiences, the UG managers gathered exchanging information to address issues ranging from: how to deal with the bureaucracy, how to seek funding, how to manage the gardens and various activities.

In Rome, the process to open an UG starts with the request of a non-profit association to the municipality of Rome, for the requalification of an abandoned urban green area. Land use is guaranteed with a free loan contract in which the association is committed to the land clearance and its restoration by preparing the allotments for gardens and leaving green areas available for the community and/or to share with other non-profit associations involved in various activities such as: educational, social and physical rehabilitation, artisanal etc.

Allotments size is on average of 50 m² and the cultivation ranges from green vegetables to flowers and some times to small orchards, often managed in common in a central area.

Through a public assignation, Roman citizens receive an allotment, paying a fee of about €50/year. From our interviews emerges that the average willingness to pay (WTP) for the participation is €75, greater than the fee paid. Further, many participants declared that they would spend even more if money would be used to improve the garden and increase the activities. If we assumed that the WTP is a proxy variable of interest manifestation, it is evident the underlying great value of the urban garden.

In Tokyo, the culture of the garden as a place of rest and meditation has spread since the time Japan opened the country to the world after the abandonment of the policy of seclusion (Shimpo and Saito, 2015). Around '30s, public officers and academicians visited Europe, especially Germany and England, and took the concept of allotment gardens back to Japan. They introduced how the gardens looked and the relevant legal regulations. Then five

allotment gardens with smaller plots than European ones – app. 15 m² - and without huts were established in Osaka and Tokyo.

After the World War II, Japan experienced a miraculous economic growth and the cities sprawled rapidly. Agricultural lands were sold and converted into residential areas and the area of agricultural land was decreased from app. 6.1 million ha in 1960 to app. 5.5 million ha in 1980. Some of the remaining agricultural lands were turned to allotment gardens. Such gardens were illegal at that time because agricultural lands should have been cultivated by their land owners by law. In response to high demand for allotment gardens, the government gradually admitted such gardens temporarily but still expected the lands would be developed into residential lands in the near future.

The rapid economic growth ended in 1980s due to the oil crises, which made the possibility of urbanizing remaining agricultural lands low. The government then established laws to legalize allotment gardens. In addition, in 1990s, farmers in Nerima Ward of Tokyo created a new business model “experience gardens”, allotment gardens with the supervision of farmers. The average annual fee to rent a plot of experience gardens is 44,000 JPY (€330), while normal allotment gardens cost 9,200 JPY/year (€70/year). The number of experience gardens run by private companies is also increasing and now 37 gardens can be found in Tokyo prefecture according to our investigation. The annual fee range for a plot of 5 m² on average is from 50,000 to 240,000 JPY (€380 to €1800). Some community gardens also appeared since 2000s and does not require participation fee basically.

To answer to the first research question of our analysis: **Q1 - motivations on why urban residents need to grow food by themselves** - we have interviewed Roman UG managers as well gardeners.

The general and shared opinion between the two categories gives the highest importance to environmental and social motivations followed by economical ones. Among the main advantages of an urban garden, our analysis shows that majority of people (more than 60%) consider very important its environmental and social value especially the opportunity to give nature to the city, promote aggregation and improve quality of life. In addition, all people interviewed consider the urban garden like the best way for the requalification of abandoned areas reducing criminality and helping citizens to actively control part of the city.

In the opinion of UG managers and Zappata Romana representative, an extreme relevance has been given to the participative process that is born from the bottom and realize activities collectively, the so called bottom-up process (vs. the top-down process) and, in this case, UG become a security garrison in an often peripheral area where before there was environmental and social degradation. As a consequence of the participatory consciousness of the community, managers refer that vandalism and theft are not frequent even if the majority of UG have no protective fences.

Regarding Tokyo, a study (Mitarai and Matsushima, 2017) showed motivations of gardeners. It proved that their top priority was related to growing food. Almost 100% of the gardeners of an allotment garden in a suburb of Tokyo wanted ‘to grow vegetables themselves’. 90% of them also selected ‘to get safe food’. The second most frequent motivation was ‘to have fun recreational activities’, which was answered by 90 % of the gardeners. On the other hand, it is

around 50% of the gardeners who selected 'to communicate with other gardeners' as their motivation.

Another study (Yamada and Monma, 2006) showed that gardeners of experience gardens in Tokyo mentioned growing their own food by themselves as the most important benefit. Secondly, they favoured the easy step to start agricultural activities with necessary instruments and fertilizers under the supervision of a farmer. The subsequent benefits were to acquire knowledge on cultivating and touch with nature. Here, social interaction got the lowest mark.

The second research question of our analysis refers to: **Q2 - types of ecosystem services provided to different stakeholders.**

In Rome, the predominant ecosystem services provided are those belonging to the categories: cultural, followed by provisioning and habitat (Langemeyer et al. 2018). Great relevance is given to 'social cohesion', 'place making', 'relax and stress reduction', 'food supply' and 'biodiversity caring'. According to the interviews, 33% of the gardeners' sample decided to attend the garden because of the environmental value while 20% decided to participate in order to improve the quality of their life arguing that the gardening help to improve their psycho-physical wellbeing. Finally, 13% of them is interested in the aggregation and social value of the gardening. The remaining ones are interested in more than one of these categories, responding to the aim of the garden in promoting social aggregation helping, in the main time, to improve the natural capital of Rome. Great importance is given to the biodiversity improvement and in many gardens a particular attention is devoted to the cultivation of traditional plants and vegetables.

UG managers, confirming the relevance of environmental and social values, highlighted that these green areas contribute to the economic sustainability: property values increased (e.g. on sale signs is mentioned the facing on the garden as a plus) and municipality saves the costs of annual green maintenance (e.g. fire prevention during the summer).

On the other hand, the major UGs in Tokyo, allotment gardens and experience gardens, started as a kind of new agricultural business by farmers followed by private companies (Shimpo and Saito, 2015). This fact indicates that stakeholders in Tokyo mostly regard UGs as a form of new agricultural business providing economic incentives to farmers rather than ecological impact or social cohesion. However, newly appearing community gardens focus on various function as well as growing food. One of them located in the western side of Tokyo contributes to organic waste recycling and social inclusion of handicapped people and children (Shimpo et al., 2014).

4. Final remarks

The relevance in terms of social sustainability is quite evident from Roman UG experience but it also emerges that have to be included - in the range of provided ecosystem services - also those practices of eco-social work; recently investigated for their relevance to allow to eco-social workers to develop a certain professionalism in a context where egalitarian, cooperative and trusting social work practice can take place (Bailey et al. 2018). On the contrary, Tokyo gardeners pursue mostly growing vegetables as individual recreation

although they recognize the ecological and social value of urban gardening to some extent. UGs are also a way to keep agricultural lands as essential green space in the city and provide enough profits for farmers and private companies. These motivations and benefits are important, however, to enhance eco-social sustainability of the city, the role of community gardens with various functions might be of more importance. These preliminary results provide some policy implications that in Rome private initiatives are highly motivated and actives, while public support has to be improved in terms of: regulation not yet finalised; extension to collaborations with other stakeholders such as foundations and support to social innovation practices such as crowdfunding initiatives. In Tokyo, municipalities should evaluate and emphasize eco-social values of urban gardening so that more citizens can recognize the importance of urban gardening and improve their quality of life.

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